Psychological Review
2000, Vol. 107, No. 1, 101–126

Copyright 2000 by the American Psychological Association, Inc.
0033-295X/00/$5.00 DOI: 10.1037//0033-295X.107.1.101

A Model of Dual Attitudes

Timothy D. Wilson and Samuel Lindsey
University of Virginia

Tonya Y. Schooler
University of Pittsburgh Cancer Institute

When an attitude changes from A_1 to A_2, what happens to A_1? Most theories assume, at least implicitly, that the new attitude replaces the former one. The authors argue that a new attitude can override, but not replace, the old one, resulting in dual attitudes. *Dual attitudes* are defined as different evaluations of the same attitude object: an automatic, implicit attitude and an explicit attitude. The attitude that people endorse depends on whether they have the cognitive capacity to retrieve the explicit attitude and whether this overrides their implicit attitude. A number of literatures consistent with these hypotheses are reviewed, and the implications of the dual-attitude model for attitude theory and measurement are discussed. For example, by including only explicit measures, previous studies may have exaggerated the ease with which people change their attitudes. Even if an explicit attitude changes, an implicit attitude can remain the same.

> The conceptions of childhood will long remain latent in the mind, to reappear in every hour of weakness, when the tension of reason is relaxed, and the power of old associations is supreme. (Lecky, 1891, p. 96)

People evaluate their environments. It is difficult to imagine a person who is impartial toward all that he or she encounters, and it would be odd to hear someone say, "I am completely neutral toward my family, my job, my dog, and whether I have anchovies on my pizza."

Social psychologists have made considerable progress in understanding the nature of evaluation (e.g., Eagly & Chaiken, 1993; Fazio, 1995; Petty & Cacioppo, 1986; Tesser & Martin, 1996). It is clear, for example, that an important function of attitudes is to provide valenced summaries of one's environment that serve as a "predisposition or readiness for response" (Allport, 1935, p. 805). Attitudes signal people about whether objects in their environment are good or bad and thus perform an important approach–avoidance function (Fazio, 1986; D. Katz, 1960; M. B. Smith, Bruner, & White, 1956).

To serve this function, it is important that attitudes have a single valence. People often must decide quickly whether an object is good or bad, rather than vacillating between positive and negative reactions. Reflecting this assumption, most theories define attitudes as "unidimensional summary statements" (Thompson, Zanna, & Griffin, 1995, p. 362). Although an allowance is made for occasional states of conflict or ambivalence, these theories generally portray attitudes as univalent. Eagly and Chaiken (1993), for example, defined an attitude as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (p. 1). Consistent with this definition, attitudes are typically measured with unidimensional scales. People are asked to rate the positivity or negativity of their feelings toward everything from social issues and consumer products to political candidates and romantic partners, and they have little trouble doing so.

There are times, however, when people have more than one evaluation of the same attitude object, one of which is more accessible than the other. The quotation by Lecky (1891) at the beginning of this article suggests that current attitudes have not fully replaced earlier ones and that the older "latent" attitudes reappear under some circumstances. Similarly, literature provides examples of characters who believe that they have unambivalent feelings toward something, only to discover that they have quite different feelings. In Proust's (1934) *Remembrance of Things Past,* the protagonist, Marcel, is convinced that he no longer loves Albertine and should end his relationship with her. If a social psychologist were available to give him standard attitude measures, Marcel would surely have responded—unambivalently and confidently—that his love for Albertine had died. When his housekeeper rushes into the room with the news that Albertine has left him, however, he realizes that he still loves her:

> A moment ago, as I lay analyzing my feelings, I had supposed that this separation without a final meeting was precisely what I wished, and, as I compared the mediocrity of the pleasures that Albertine afforded me with the richness of the desires which she prevented me from realizing . . . [I] concluded that I did not wish to see her again, that I no longer loved her. But now these words: "Mademoiselle Albertine has gone!" had expressed themselves in my heart in the form of an anguish so keen that I would not be able to endure it for any length of time. And so what I had supposed to mean nothing to me was the only

Timothy D. Wilson and Samuel Lindsey, Department of Psychology, University of Virginia; Tonya Y. Schooler, Behavioral Medicine and Oncology, University of Pittsburgh Cancer Institute.

Some of this research was supported by National Institute of Mental Health Grant 41841.

We thank Michelle Damiani, Russ Fazio, Roger Giner-Sorolla, Aiden Gregg, Jonathan Haidt, Richard Petty, Jonathan Schooler, Barbara Spellman, Abraham Tesser, and Daniel Wegner for their insightful comments on a previous version of this article.

Correspondence concerning this article should be addressed to Timothy D. Wilson, Department of Psychology, Gilmer Hall, University of Virginia, Charlottesville, Virginia 22903-2477. Electronic mail may be sent to tdw@virginia.edu.

> thing in my whole life. How ignorant we are of ourselves. (Proust, 1934, pp. 675–676)

As another example, consider a White American reared in a racist family who learned to be prejudiced against African Americans. As an adult, this person adopts egalitarian views and abhors prejudice of all kinds. What is this person's attitude toward African Americans? Traditional views of attitudes would suggest that the prior racist attitude has been replaced by the new egalitarian one. Recent models of prejudice, however, suggest that this individual has two attitudes toward African Americans: a habitual negative evaluation—the "conceptions of childhood" in Lecky's (1891) words—and a more recently constructed positive evaluation (e.g., Devine, 1989a; Dovidio, Kawakami, Johnson, & Johnson, 1997; Gaertner & Dovidio, 1986; Higgins & King, 1981).

Current models of attitudes have not dealt sufficiently with examples such as these. They assume, at least implicitly, that when people change their attitude from A_1 to A_2, the new attitude (A_2) replaces the former one (A_1). We propose that people can have dual attitudes, which are different evaluations of the same attitude object, one of which is an automatic, implicit attitude and the other of which is an explicit attitude. The attitude that people endorse at any point in time depends on whether they have the cognitive capacity to retrieve the explicit attitude and whether the explicit attitude overrides the implicit one.[1]

Although variants of the dual-attitude hypothesis have been offered in specific areas of research, there is no general model that links these diverse literatures and explores the implications of a general model. We present such a model, linking several literatures that have not previously been thought of as addressing similar phenomena. Although there is empirical support for many aspects of the model in these literatures, we also identify speculative questions that have not received much empirical attention. We conclude by discussing some of the consequences of having dual attitudes, arguing that basic definitions of attitudes need to be revised to take into account the fact that people can have different evaluations of the same attitude object. For example, many of the ways that social psychologists have developed to change attitudes—such as inducing cognitive dissonance (Festinger, 1957) and asking people to think about the reasons for their attitudes (Wilson, Dunn, Kraft, & Lisle, 1989)—may not replace the original habitual attitude. The original attitude might persist along with the newer one, resulting in dual attitudes.

Contrasting Portrayals of Attitudes

The dual-attitude hypothesis can be derived from two main lines of research on attitudes: one indicating that attitudes are stable evaluations that are activated automatically and the other indicating that attitudes are context-sensitive constructions that often change. How can attitudes be both stable and labile? We begin with a summary of these seemingly inconsistent views of attitudes, followed by a discussion of models (including ours) that can account for both stability and lability.

Stability and Automaticity: Attitudes as Stored Evaluations

Attitudes have traditionally been viewed as evaluations that are stored in memory and persist over time. Sherif and Cantril (1947) noted that "attitudes, once formed, are more or less enduring states of readiness" (p. 22), whereas Allport (1935) observed that "attitudes are often as rigid as habits" (p. 813) and "often persist throughout life in the way in which they were fixed in childhood or in youth" (p. 814). Tesser (1993) found that some attitudes have a large heritable component and that these attitudes are especially resistant to change.

In recent years, researchers have discovered another important property of stored evaluations: They often come to mind automatically. Fazio, Sanbonmatsu, Powell, and Kardes (1986), for example, demonstrated that attitudes are accessed from memory very quickly with little conscious control. The automatic activation of attitudes has proved to be a highly replicable phenomenon, found in several laboratories with many types of stimuli (e.g., Bargh, Chaiken, Raymond, & Hymes, 1996; De Houwer, Hermans, & Eelen, 1996; Fazio, Jackson, Dunton, & Williams, 1995; Hermans, De Houwer, & Eelen, 1994). Whether all attitudes or only strong attitudes are activated automatically remains controversial, though for our purposes, the important point is one agreed on by all parties: At least at times, people's stored evaluations are activated automatically and guide people's interpretation of their environments (Houston & Fazio, 1989; E. R. Smith, Fazio, & Cejka, 1996).

The Lability of Evaluation: Attitudes as Context-Sensitive Constructions

In recent years, a different view of attitudes has emerged. Instead of viewing attitudes as stored evaluations of objects and issues, researchers have found that people construct on-the-spot attitudes on the basis of information that happens to be accessible at that point in time. Some researchers have argued that evaluations are so context-dependent that there is no such thing as a "true" attitude (Anderson, 1974; Tesser, 1978).

There is considerable empirical support for the attitudes-as-constructions view. People have been found to infer attitudes from observations of their own behavior (Bem, 1972; Fazio, 1987; Olson, 1990), their current thoughts and feelings (e.g., Chaiken & Yates, 1985; Judd & Lusk, 1984; Millar & Tesser, 1986a, 1986b; Tesser, 1978; Wilson, Dunn, et al., 1989; Wilson & Hodges, 1992), their mood (e.g., Forgas, 1992; Petty, Schumann, Richman, & Strathman, 1993; Schwarz & Clore, 1983), and the nature of the social context (e.g., Feldman & Lynch, 1988; Markus & Wurf, 1987; McGuire & Padawer-Singer, 1976; Schuman & Presser, 1981; Schwarz & Bless, 1992; Strack, 1992; Tourangeau & Rasinski, 1988; for a review, see Wilson & Hodges, 1992).

Researchers have found, for example, that when people are asked to think about why they feel the way they do, they often construct a new attitude that is based on reasons that are accessible, plausible, and easily verbalizable (e.g., Wilson, Dunn, et al., 1989; Wilson, Hodges, & LaFleur, 1995). Drawing on such findings, E. R. Smith (1996) proposed that attitudes may be best viewed as the current state of activation of a connectionist system, rather than

[1] Current models of attitudes do take into account attitudinal ambivalence, in which both positive and negative feelings toward a stimulus are activated. As seen shortly, dual attitudes are hypothesized to be different from a state of ambivalence.

as evaluations stored in memory. Most parallel distributed-processing models assume that mental representations are highly sensitive to the current context, because aspects of the context always influence the pattern of activation that determines mental representations (Arieli, Sterkin, Grinvald, & Aertsen, 1996). According to this view, it makes little sense to think of attitudes as stored evaluations that are context-independent.

Despite the evidence for the attitudes-as-constructions view, it appears to have some limitations. First, can it be that people have no attitudes until they go to the effort to construct them? Such a view is reminiscent of Guthrie's (1952) critique of the idea that rats have mental representations, namely, that Tolman's (1932) rats were so buried in thought they could never act. The attitudes-as-constructions position seems to suggest a similar view of people scratching their heads and wondering what their current attitude is before they are able to do anything. Whereas there are times when people's evaluations are quite thoughtful and deliberative, there are many other times when it is necessary to know very quickly how they feel. Clearly, when people step out into a street and notice a car speeding toward them, they do not stop and deliberate about their current attitude toward large, onrushing vehicles.

Second, most attitudes-as-constructions models assume that once people construct an attitude, that evaluation is stored in memory, at least temporarily. In research on the effects of analyzing reasons, for example, researchers assumed that the reasons-based attitude that people construct, after thinking about why they feel the way they do, is stored in memory and influences people's immediate behavior (e.g., Wilson et al., 1993). True enough, these stored evaluations may not persist for very long. Nevertheless, people store their constructions in memory. Perhaps the best characterization of the attitudes-as-constructions approach is that attitudes are like the needle of a spinner that can point to a wide range of evaluations. This needle moves easily and is highly influenced by the context. Once it lands on a particular evaluation, however, it stays there (i.e., it remains in memory) until it gets spun again.

Although the attitudes-as-constructions approach allows for the possibility that attitudes are retained in memory, it differs in fundamental ways from the attitudes-as-stored-evaluations view. As seen earlier, the latter approach suggests that attitudes can be quite stable over time (i.e., the needle gets stuck in one place) and that they come to mind quickly when an attitude object is encountered. If so, why do people construct new attitudes?

Reconciling the Attitudes-as-Stored-Evaluations and Attitudes-as-Constructions Views

A comprehensive model of attitudes must account for the fact that evaluations are often stable and come to mind automatically (the stored-evaluation view) and the fact that attitudes are often quite labile, changing according to the context and one's current thoughts (the attitudes-as-constructions view). In this section, we show that established attitude theories can account for both sets of findings, at least to some extent.

The solution adopted by most theories is what we refer to as *the anchoring-and-adjustment model of attitude change.* According to this approach, when people are confronted by an attitude object, people's stored evaluation often comes to mind automatically. People then adjust this attitude, if warranted, according to other information that is currently accessible, such as reasons they happen to be thinking about or salient aspects of the situation. Furthermore, each of these sources of information (the initial evaluation retrieved from memory, A_1, and the currently accessible information) varies in strength and thus can receive little or substantial weight. At one extreme, people might have no prior attitude or only a very weak one; thus, their evaluation is constructed completely from their currently accessible thoughts (Converse, 1970; Hovland, 1959). At the other extreme, people might have a very strong prior attitude, and their evaluation is a function solely of this stored evaluation: Currently accessible thoughts receive no weight, and A_2 equals A_1. There are also many cases in between, in which people weight both their stored evaluation and their current thoughts. They bring to mind A_1, adjust it in light of currently accessible information, and replace A_1 with A_2.

This approach to attitude stability and change is shared by most current models of attitudes and impression formation, such as Petty and Cacioppo's (1986) elaboration likelihood model (ELM), Chaiken's (1987) heuristic–systematic model (HSM), Fazio's (1990) motivation and opportunity as determinants (MODE) model, and Carlston and Skowronski's (1986) model of trait versus behavior memory. Fazio (1990, 1995), for example, argued that stored evaluations vary in their accessibility. The more accessible A_1 is, the more likely it will be activated automatically when the attitude object is encountered, and the more it will bias the processing of relevant information. Under these conditions, people's evaluation is based more on A_1 and less on any current thoughts; in fact, when A_1 is highly accessible, it biases the direction of people's thoughts in an attitude-congruent direction (e.g., Houston & Fazio, 1989). When people's initial attitude is relatively inaccessible and when people are motivated and have the cognitive capacity to think carefully about how they feel, their evaluation results from a more deliberative consideration of their current thoughts (Fazio, 1990).

Similarly, the ELM and the HSM argue that when an initial attitude is very strong, it biases processing of new information in such a way as to maintain that attitude. Under these conditions, people's evaluation is a function of their prior evaluation ($A_2 = A_1$). When an initial attitude is weaker, people often change their evaluation, basing it on currently accessible information. A distinctive feature of the ELM and the HSM is that they point to two ways in which people use accessible information to change their attitudes. When capacity and motivation are relatively high, people carefully consider the information and form strong new attitudes. When capacity and motivation are relatively low, people process the information less thoroughly and rely on simple heuristics or peripheral cues, resulting in attitude change that is temporary and weak—a point we return to shortly.

Our portrayal of the anchoring-and-adjustment approach is admittedly broad and ignores the many ways in which major attitude theories differ. We simply wish to point out that despite their differences, approaches such as Fazio's (1990) MODE model, Petty and Cacioppo's (1986) ELM, and Chaiken's (1987) HSM agree in their resolution of the attitudes-as-stored-evaluations approach versus the attitudes-as-constructions approach. Attitudes can be formed and maintained either way, depending on such moderator variables as the strength of the initial attitude and people's motivation and capacity to consider new information.

Furthermore, we would like to emphasize that there is support for the anchoring-and-adjustment approach to attitude change.

Numerous studies (including some from our own laboratory) have found that people are most likely to construct new attitudes when their initial attitude is weak (e.g., Chaiken, Pomerantz, & Giner-Sorolla, 1995; Eagly & Chaiken, 1993; Fazio, 1995; Petty & Krosnick, 1995; Petty, Priester, & Wegener, 1994; Tesser, 1993; Wilson, Kraft, & Dunn, 1989). As we previously mentioned, numerous studies have found that when an initial attitude is strong, it biases the processing of new information in an attitude-congruent direction.

The Dual-Attitude Model

Our purpose is not to challenge this well-supported approach to attitude change but rather to point out that it is not the full story. The anchoring-and-adjustment model assumes, at least implicitly, that when attitude change occurs, the new attitude replaces the old one. Under some conditions, we suggest, people change their attitude to A_2, and this new attitude is stored in memory. However, people's original attitude, A_1, is not replaced and remains in memory, resulting in what we call a *dual attitude* (Wilson et al., 1995). Dual attitudes can also result from the simultaneous acquisition of implicit and explicit attitudes or from the acquisition of an implicit attitude after an explicit attitude has been formed. The following five hypotheses can be derived from the model:

1. Explicit attitudes (A_E) and implicit attitudes (A_I) toward the same attitude object can coexist in memory.
2. When dual attitudes exist, the implicit attitude is activated automatically, whereas the explicit one requires more capacity and motivation to retrieve from memory. When people are able to retrieve A_E, it can override A_I, such that they report A_E. When people do not have the capacity and motivation to retrieve A_E, they report A_I.
3. Even when the explicit attitude has been retrieved from memory, A_I influences implicit responses, namely, uncontrollable responses (e.g., some nonverbal behaviors) or responses that people do not view as an expression of their attitude and thus do not attempt to control.
4. Explicit attitudes change relatively easily, whereas implicit attitudes, like old habits, change more slowly. Attitude-change techniques often change explicit but not implicit attitudes.
5. Dual attitudes are distinct from ambivalence and attitudes with discrepant affective and cognitive components. Rather than experiencing a subjective state of conflict, people with dual attitudes report the attitude that is most accessible.

To understand these hypotheses, it is useful to draw an analogy to motor behavior. Consider an experienced female tennis player who has a well-learned way of serving the ball. Her serve has become automatic; she consistently executes it with little thought during a match. In an effort to strengthen her game, she takes some lessons and learns to position her elbow differently and to snap her wrist more forcefully while serving. With practice, the tennis player learns the new serve and is able to use it in her next match, as long as she pays close attention and reminds herself of what she has learned. The new serve, however, has not fully replaced the old one. Well-ingrained habits are hard to overcome, and when she is tired or engrossed in the heat of the match, she serves the ball the old way.

Although everyone is familiar with such examples, attitudes have not been conceived in this way (for an exception, see Petty, Baker, & Gleicher, 1991). As we have shown, most theories define an attitude as an evaluation of an attitude object with a single valence. Imagine, though, that the old serve is an implicit attitude and the new serve is an explicit evaluation of the same attitude object. In this case, people would possess two attitudes. Consider, for example, a person who has changed his or her explicit attitude toward a dating relationship as a result of thinking about the reasons for his or her feelings (Wilson, Dunn, Bybee, Hyman, & Rotondo, 1984; Wilson & Kraft, 1993). We suggest that the new attitude toward the relationship does not fully replace the older, more habitual one and that the implicit and explicit attitudes are each expressed under different circumstances.

What are these circumstances? Again, the analogy to motor behavior is apt: Because the implicit attitude is habitual and automatic, it is the default response that is expressed when people do not have the capacity or motivation to retrieve the more recent attitude. The explicit attitude is expressed and acted on when people have the motivation and cognitive capacity to retrieve it.

Definition of Implicit Attitudes

Because the term *implicit* has acquired several meanings, it is important for us to make our definition clear. Consistent with Greenwald and Banaji (1995), we define implicit attitudes as evaluations that (a) have an unknown origin (i.e., people are unaware of the basis of their evaluation); (b) are activated automatically; and (c) influence implicit responses, namely, uncontrollable responses and ones that people do not view as an expression of their attitude and thus do not attempt to control.

An unresolved issue is whether people are aware of the implicit evaluation itself. In several of Greenwald and Banaji's (1995) examples of implicit attitudes, such as evaluations resulting from mere exposure, people are aware of their attitude but not where it came from. That is, people are unaware that a positive evaluation has resulted from frequent exposure to an attitude object, but they are aware of the positive evaluation itself. In other examples, such as implicit prejudice, people seem to be unaware of the evaluation (i.e., that they possess a negative evaluation of an out-group). We believe that not all implicit attitudes are alike on this dimension. As we show shortly, it is useful to consider when people are and are not aware of their implicit evaluations.

Another difference between the dual-attitude model and Greenwald and Banaji's (1995) implicit-attitude model concerns the role of explicit attitudes. We suggest that explicit attitudes can coexist with implicit attitudes toward the same stimulus. Interestingly, Greenwald and Banaji anticipated this possibility:

> Possibly, the evaluative content of this implicit attitude [toward B] may disagree with results from a direct measure of attitude toward B; such disagreement, referred to as a *dissociation* of implicit and explicit attitudes, is especially interesting and perhaps most dramatically indicates the value of the implicit attitude construct. (p. 8)

They did not pursue this idea, however, and focused mostly on cases in which people have a single implicit attitude toward a stimulus that they attempt to control or suppress when aware of its origins. For example, Greenwald, McGhee, and Schwartz (1998) developed a new measure of implicit attitudes that they compared with explicit measures. Although they found a divergence between implicit and explicit measures in some of their studies, they attrib-

uted this discrepancy to self-presentational concerns, not to the possibility that people held two different attitudes toward the same stimulus. In one study, White participants expressed more positive attitudes toward Blacks on explicit than implicit measures of prejudice, and the correlation between the different types of measures was quite low. Greenwald et al. interpreted this as evidence that implicit measures are "more resistant to self-presentational factors than are explicit measures" (p. 1476), rather than to the possibility that people had two attitudes.

Undoubtedly, people can have a single attitude that is suppressed or disguised when they report their attitudes on explicit measures. We believe that Greenwald and Banaji (1995) were right, however, to entertain the possibility that people can simultaneously have two attitudes toward the same stimulus, one of which is more implicit than the other.

Types of Dual Attitudes

By examining different components of automaticity, such as awareness of an implicit attitude and the extent to which motivation and capacity are needed to override an implicit attitude with an explicit attitude, we can derive four types of dual attitudes (Bargh, 1989, 1997). We do so for reasons of theoretical clarity and as a means of organizing our subsequent review of the empirical literature. We acknowledge that it is not a simple matter to empirically distinguish the types of dual attitudes and that there is more support for some types than others. Nonetheless, the typology is useful as an organizing heuristic, especially because most of the four types have been hypothesized to exist in the literature.

First, we assume that, once formed, the implicit attitude is activated automatically when people encounter an attitude object; neither cognitive capacity nor motivation is required for its activation. As discussed earlier, this assumption is consistent with research on the automatic activation of attitudes (e.g., Fazio, Sanbonmatsu, Powell, & Kardes, 1986). Second, we assume that the explicit attitude has not had a chance to become automatic and thus requires more capacity and motivation to retrieve. These are the hallmarks of dual attitudes, shared by all types.

There are two other features of automaticity that vary according to the type of dual attitude. The first concerns people's awareness of A_I, once it is activated. We suggest that people are often aware, at least fleetingly, of A_I. There may be times, however, when people are unaware of its existence. Second, once people have retrieved A_E from memory, the amount of motivation and cognitive capacity required for it to override the implicit attitude varies. We suggest that, in some cases, A_E automatically overrides the implicit attitude, whereas in others, people must be motivated and have the capacity to override A_I with A_E. Classifying dual attitudes according to these two variables—awareness of the implicit attitude and the capacity and motivation required to override it—yields four hypothetical types of dual attitudes, as shown in Table 1. Although our focus is primarily on two of these types (motivated and automatic overriding), it is worth considering all four.

Repression. The first hypothetical type of dual attitude results from repression, whereby an attitude is kept out of awareness because it is anxiety-provoking. A dual attitude would result if people also had a more conscious attitude toward the same attitude object that differed from the repressed attitude. One example of such a case is reaction formation, the defense mechanism whereby unconscious desires are disguised as their opposite. Erotic attraction toward a member of the same sex, for example, may be so threatening to people that they transform this desire into homophobia (Freud, 1911/1958). Similarly, it is possible that in the Proust (1934) passage at the beginning of this article, Marcel was threatened by his feelings of love and intimacy for Albertine, causing him to repress these feelings and experience their opposite—until she left him, and his feelings of love burst through the dam of repression.

The term *repression* has undergone several changes in meaning; Erdelyi (1985) noted that Freud himself used the term differently in his many writings on the topic. We are using the modern psychoanalytic definition of repression, namely, the case in which feelings are kept out of awareness because they are anxiety-provoking. The process of repression involves capacity and motivation; that is, according to Freud (1911/1958), defense mechanisms are effortful, capacity-draining processes. Thus, theoretically, people could become aware of their implicit attitude if their ego defenses were weakened (such that repression failed) or if their motive to repress the feeling were removed.

Though the existence of repression of this sort is controversial (Holmes, 1990), we believe it is worth considering as a cause of dual attitudes for historical reasons. As we discuss shortly, repression has been offered as an explanation of dual attitudes, especially in models developed during the heyday of psychoanalytic theory. As psychology moved from psychodynamic to more cognitive interpretations of nonconscious processes, however, many of these literatures abandoned repression as an explanation and adopted a more cognitive view. Although we allow for the case of repression, our interest is mainly in the types of dual attitudes that exist in the absence of censorship, which we believe are at least as common as repression. By examining sources of dual attitudes other than repression, our approach is similar to those who have reinterpreted psychoanalytic ideas in terms of modern cognitive and social psychology (e.g., Erdelyi, 1985; Kihlstrom, 1987; Westen, 1998).

Table 1
Types of Dual Attitudes

Aspects of automaticity	Repression	Independent systems	Motivated overriding	Automatic overriding
Awareness of A_I?	No	No	Yes	Under some conditions
Capacity and motivation needed to override A_I with A_E?	Yes	No	Yes	No

Note. A_I refers to an implicit attitude, whereas A_E refers to an explicit attitude toward the same attitude object.

J. W. Schooler and Engstler-Schooler (1990), for example, found that asking people to verbalize their memory for a face impaired recognition for that face. This memory impairment was reduced when people performed the recognition task under time pressure, supporting the idea that there was a "coexistence in memory of the original visual information and a new conceptual representation that competes with the original visual memories" (Brandimonte, Schooler, & Gabbino, 1997, p. 916; see also J. W. Schooler, Fiore, & Brandimonte, 1997). This view is consistent with the dual-attitude hypothesis, which argues that implicit and explicit evaluations of the same attitude object can coexist in memory.

Human Motivation

People's chronic level of motivation, such as their need for achievement, affiliation, and power, is a central component of personality (Atkinson, 1964; McClelland, 1985; Murray, 1938; Winter, John, Stewart, Klohnen, & Duncan, 1998). Interestingly, there is disagreement over how best to measure these motives. Murray and McClelland advocated the use of the Thematic Apperception Test (TAT), which involves coding the content of people's imaginative stories about pictures for the presence of various motives. Other researchers have relied on explicit self-report instruments, whereby people are asked to report their level of motivation (e.g., their need for achievement). Although it has sometimes been assumed that the self-report questionnaires and the TAT are different measures of the same variable, McClelland, Koestner, and Weinberger (1989) suggested that they in fact measure different constructs. Supporting this view, a meta-analysis by Spangler (1992) found that the average correlation between the two measures was .09.

There are, of course, a number of possible reasons for this lack of association, such as low levels of reliability or validity of one or both of the instruments. McClelland et al. (1989), however, built a convincing case that both are valid measures of motivation but of different types. The TAT assesses what they called "implicit motives," whereas explicit self-report measures assess what they called "self-attributed motives."

Implicit motives are similar to what we call habitual implicit attitudes, in that they "automatically influence behavior without conscious effort" (McClelland et al., 1989, pp. 698–699) and "are like rules that guide behavior that have been acquired on the basis of repeated affective experiences" (p. 699). These motives appear to be triggered automatically by the nature of the task in which a person is engaged without a great deal of deliberative thought. Constantian (as cited in McClelland, 1985), for example, found that affiliation needs, as assessed by the TAT, predicted whether people were talking with another person when they were beeped at random intervals over several days, whereas a self-report measure of affiliation did not (see also Craig, Koestner, & Zuroff, 1994). Self-attributed motives are akin to explicit attitudes that are expressed when people are asked directly how they feel. Constantian found that the self-report measure of affiliation was a better predictor than the implicit measure of more explicit responses, such as people's choices of which types of behaviors they would prefer to do alone or with others (e.g., visit a museum).

McClelland et al.'s (1989) model of motivation and our dual-attitude model share many features. Both argue that people can simultaneously possess an automatized, habitual response (an implicit motive in McClelland et al.'s [1989] model, an implicit attitude in ours) and an explicit response (a self-attributed motive in McClelland et al.'s [1989] model, an explicit attitude in ours). Both argue that these responses can exist simultaneously and predict different behaviors. Although there are important differences between the constructs of attitudes and motivation, motives often have evaluative consequences. A strong need for affiliation, for example, will lead to positive evaluations of some situations and negative evaluations of others.

It is interesting to apply our classification of dual attitudes (portrayed in Table 1) to McClelland et al.'s (1989) conception of implicit and explicit motives. Reflecting the influence of psychoanalytic theory at the time when research in this area began, researchers originally suggested that people's lack of access to their motives was due to repression (Murray, 1938; Winter et al., 1998). The TAT was thought to be a projective measure of implicit motivation that bypassed attempts to repress one's true motives. Murray (1958) came to doubt that the TAT was a *projective measure* in the psychoanalytic meaning of the term, however, and the modern view of implicit motivation—and the one endorsed by McClelland et al.—is closer to our conception of independence (see Table 1). People are unaware of their implicit motives not because of repression but because these motives stem from early prelingual experiences that are difficult to verbalize. Self-attributed motives, in contrast, develop after people acquire language and are more conscious constructions. The picture that McClelland et al. painted is of two independent systems that operate in parallel and influence different types of behaviors.

Working Models of Attachment

A similar distinction between implicit and explicit states can be found in the attachment literature. In recent years, a number of researchers have extended Bowlby's (1969) and Ainsworth's (1973) classic research on infant attachment to adult attachment. This research has been conducted by two largely independent groups of researchers, each with its own way of measuring adult attachment. Developmental and clinical psychologists typically measure attachment with the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985), whereby people's verbal and nonverbal responses while discussing their childhood and their parents are coded by trained researchers. The AAI is hypothesized to tap people's internal working models of attachment that originate in early childhood and influence adult relationships (Main, Kaplan, & Cassidy, 1985). These models are hypothesized to "have an existence outside of consciousness as well as a propensity for stability" (Main et al., 1985, p. 76). People's adult attachment styles, as revealed by the AAI, have been found to be good predictors of such important variables as the attachment classification of their children, as assessed by Ainsworth's Strange Situation procedure.

Meanwhile, personality and social psychologists have examined the relationship between attachment and romantic relationships, relying primarily on self-report measures of adult attachment (Hazan & Shaver, 1987). Researchers in this tradition assume that people's adult romantic relationships are determined in part by the internal working models they learned as infants, and indeed, the self-report instruments are correlated with people's recollections

of their relationships with their parents (Hazan & Shaver, 1987; Rothbard & Shaver, 1994) as well as other interesting social behaviors, such as people's reports of their emotions during opposite-sex interactions (Tidwell, Reis, & Shaver, 1996).

Some researchers have assumed that the AAI and self-report instruments about romantic attachment should correlate highly because they measure the same construct: people's internal working models of attachment. Interestingly, though, the measures appear to correlate only moderately, at best (Bartholomew & Shaver, 1998). As with the literature on motivation, there are a number of possible explanations for this lack of correspondence. From our perspective, the most interesting possibility is that the measures are assessing models of attachment at different levels of accessibility—one that is relatively habitual, automatic, and nonconscious and the other that is relatively deliberative, constructed, and conscious. Furman and Flanagan (1997) endorsed this view, arguing that self-report measures assess "conscious attachment styles" whereas interview techniques assess "internalized, often unconscious, working models" (p. 183).

Which type of dual attitude best captures these different kinds of attachment? Bowlby (1980) discussed two possibilities that are similar to repression and independence (see Table 1). First, Bowlby noted that there are cases of "defensive exclusion," whereby information about one's attachment relationship is selectively excluded because of its threatening nature. He observed, for example, that it is not unusual for a person to have a conscious, favorable view of a parent while "at a less conscious level he nurses a contrasting image in which his parent is represented as neglectful, or rejecting, or as ill-treating him" (Bowlby, 1980, p. 71). The more negative view is kept out of consciousness because of repression.

Bowlby (1980) also endorsed the modern cognitive view of nonconscious processing, arguing that a good deal of information is unavailable to consciousness for reasons of efficiency and overlearning, not because of repression. In fact, he presaged our analogy between dual attitudes and well-learned motor behaviors:

> On the analogy of a physical skill that has been acquired in the same kind of way, both the cognitive and the action components of attachment are thought to become so engrained (in technical terms overlearned) that they come to operate automatically and outside awareness. (Bowlby, 1980, p. 55)

This view is similar to our conception of independence, as portrayed in Table 1.

Other Areas of Personality

A similar disparity between implicit and explicit measures exists in other areas of personality. Although none have been researched as extensively as the areas of motivation and attachment, there is growing evidence for the independence of implicit and explicit constructs. For example, Bornstein (1995), in a meta-analytic review of the literature on dependency needs, found that implicit projective measures are only moderately correlated with explicit self-report measures. Furthermore, women reliably score higher on explicit tests of dependency, whereas men tend to score higher on implicit tests of dependency. Consistent with the present conception of dual attitudes, Bornstein suggested that implicit measures tap motives "which affect the individual's behavior automatically and unconsciously" (p. 320) whereas explicit measures tap motives that "the individual openly acknowledges as being characteristic of his or her day-to-day functioning and experience" (p. 320).

Peterson and Ulrey (1994) proposed a similar distinction in the realm of explanatory style, a personality variable reflecting the way people typically explain the causes of negative events. They, too, found surprisingly little correspondence between a questionnaire measure of explanatory style (the Expanded Attributional Style Questionnaire) and attributions coded from people's TAT responses and suggested there may be an important distinction between self-attributed and implicit explanatory style. Finally, Hetts, Kuwano, and Pelham (in press) found an interesting discrepancy in implicit and explicit self-evaluations in people who had been raised in collectivist cultures but had exposure to Western culture. Recent Asian immigrants to the United States exhibited relatively low levels of positive self-regard on an implicit measure, which is typical of members of collectivist cultures. However, the recent immigrants showed a Western-like pattern of self-esteem on explicit measures, namely, more positive self-regard. Hetts et al. suggested the intriguing hypothesis that acculturation occurs first at a conscious, explicit level and more slowly at a habitual, implicit level (see also Pelham & Hetts, 1999; Spalding & Hardin, 1998).

The independence of implicit and explicit self-esteem is particularly interesting for our purposes because self-esteem includes an evaluative component (positive or negative evaluations of the self). Of the research we have reviewed so far, this area comes closest to our concept of dual attitudes. We turn now to research that deals directly with attitudes per se.

Empirical Support From Research on Attitudes

Dual Attitudes Are Implicit in the Anchoring-and-Adjustment Model

Although prevailing attitude theories do not allow for the existence of two simultaneous attitudes toward the same attitude object, this possibility is implicit in the anchoring-and-adjustment approach, especially in its treatment of the conditions in which attitude change is temporary. What happens when attitude change does not persist? People begin with an attitude toward a topic, A_1; change their attitude to A_2, often as a result of peripheral processing of a persuasive message; then, after the passage of time, they change back to their previous attitude, A_1. A question that has seldom been asked is, What happens to people's initial attitude, A_1, during the time they adopted the new attitude? The anchoring-and-adjustment model assumes that old attitudes are erased when new ones are adopted. But how, then, can people so easily revert to their previous attitude? We suggest that the initial attitude is not completely erased but is retained in memory in some form.

There are a number of alternative explanations of transitory attitude change, such as the possibility that when people change their attitude to A_2, they remember having held A_1 but no longer endorse this position. People might know that they used to feel differently about legalized abortion, for example, and remember precisely what their previous position was. They might even remember the basis of this old attitude, such as the antilegalization arguments they used to endorse. They no longer believe these arguments, however, and thus have only one current evaluation

(A_2). As time goes by, the persuasiveness of the arguments for the new attitude fades while the persuasiveness of the old arguments increases, causing people to abandon the new attitude and readopt the old one. Dual attitudes never existed, because people never held two evaluations at the same time. Although such a sequence of events could undoubtedly occur, we suspect it is relatively rare. People often forget that their past attitudes were different from their current attitudes (Bem & McConnell, 1970; Goethals & Reckman, 1973; M. Ross, 1989; Wilson, Houston, & Meyers, 1998). If people do not remember that they used to feel differently about an attitude object, they are unlikely to initiate a "repersuasion" process whereby they change back to the former attitude.[2]

We suggest that people often adopt a new explicit attitude while their implicit attitude remains unchanged. After the passage of time, the new attitude "wears off," and the original implicit attitude reemerges. We suspect that this is the best explanation of studies in which attitude change has been found to be temporary (e.g., Chaiken, 1980; Mackie, 1987).

Prejudice and Stereotyping

The literature on stereotyping and prejudice has examined the nature of dual evaluations in some detail. A number of dual-process models argue that stereotyping and prejudice can exist at both an implicit, automatic level and an explicit, controlled level. Some of these models provide the best empirical support to date for the dual-attitude model. Indeed, our model can be seen as an extension of these approaches to attitudes in general (as well as an attempt to develop a more specific model of the nature of dual attitudes). Not all dual-process models of prejudice, however, endorse the view that people simultaneously have implicit and explicit attitudes toward members of out-groups. The dual-attitude model provides a useful framework for illustrating some important differences between dual-process models of prejudice and highlighting some unanswered questions in this literature.

We note first an approach that is clearly different from the dual-attitude view. I. Katz et al. (1986) discussed the role of racial ambivalence, arguing that people can "hold two opposing and contradictory racial attitudes, one friendly and the other hostile" (p. 56). However, as the name implies, theirs is a model of ambivalence in that people are said to be fully aware of both their positive and negative attitudes, resulting in a state of conflict. Racial ambivalence is measured with a self-report scale that contains both positive and negative statements about African Americans and people who endorse both items are rated as high in ambivalence. As discussed earlier, dual attitudes are hypothesized to be different from ambivalence. People have two different evaluations of an attitude object, one that is more implicit and automatic and the other that is more explicit and controlled.

To demonstrate a dual attitude, we would need to show that people have an implicit evaluation of an out-group and an explicit evaluation of that same group that is of a different valence. We believe that there is evidence for such dual evaluations as well as hints about the specific kinds of dual attitudes that are likely to exist.

A number of studies demonstrate that stereotypes and prejudiced attitudes can exist at an automatic, habitual level (Fiske, 1998). One line of research has found that stereotypic knowledge can be activated and used quickly and nonconsciously in social judgment (e.g., Banaji & Hardin, 1996; Devine, 1989b; Gaertner & McLaughlin, 1983; McCrae, Bodenhausen, Milne, & Jetten, 1994; Wittenbrink, Judd, & Park, 1997). To the extent that an evaluation is associated with these implicit stereotypes, this research is consistent with our hypotheses about the existence of automatic implicit attitudes. More direct evidence for this hypothesis comes from research on the automatic activation of prejudiced attitudes (i.e., negative evaluations of members of an out-group), as opposed to stereotypic knowledge (i.e., beliefs about the attributes of members of an out-group). Several studies have found that such attitudes do exist at an automatic level (e.g., Dovidio, Brigham, Johnson, & Gaertner, 1996; Fazio et al., 1995; Greenwald et al., 1998).

These studies are consistent with half of the dual-attitude hypothesis—that people have automatically activated implicit attitudes. To qualify as having a dual attitude, people would also need to have an explicit attitude toward the same out-group. It is on this question that different dual-process models of prejudice part company. Some argue that prejudiced attitudes exist solely at the implicit, automatic level; some argue that they exist solely at the explicit, controlled level; and some, consistent with the dual-attitude model, argue that they exist simultaneously at both levels.

Fazio et al. (1995) and Greenwald et al. (1998) found that their measures of implicit or automatic prejudice were uncorrelated with more explicit measures (e.g., the Modern Racism Scale; McConahay, 1986). In contrast to the dual-attitude model, they suggested that people do not simultaneously hold different attitudes at implicit and explicit levels. In their view, the automatic attitude is the only evaluation that people have, and people are fully aware of this attitude. Responses on explicit measures such as the Modern Racism Scale, they suggest, reflect political conservatism or an unwillingness to express prejudice, not a separate attitude. As we show shortly, however, this view is similar to the case of motivated overriding and is not as discrepant from a dual-attitude perspective as it may at first seem.

Devine (1989a, 1989b, 1995), in her influential dissociation model, argued that in contemporary American culture, virtually everyone knows the negative stereotypes of such groups as African Americans, gay men and lesbians, and women. This knowledge is acquired at an early age and is activated automatically (see also Higgins & King, 1981). The nonprejudiced person is one who attempts to control or suppress this negative stereotype, whereas the prejudiced person is one who does not attempt to control or suppress it. Devine's model differs from our dual-attitude perspective in two main ways. First, she focused primarily on the activation of stereotypical knowledge about members of other groups

[2] The idea that people change their attitudes but then are repersuaded by the arguments in favor of their original attitudes is reminiscent of the sleeper effect. The sleeper effect is the case in which people are initially unpersuaded by a set of arguments because of a discounting cue (e.g., the source of the arguments lacks credibility). Over time, the link between the arguments and the discounting cue fades, causing people to be more likely to believe the arguments they heard and to change their attitudes. In neither case, however, do people have dual attitudes, because they never held two attitudes at the same time. In the case of the sleeper effect, they were initially unpersuaded but then changed their attitude from A_1 to A_2.

and not on the activation of affect or evaluation, and second, the stereotypical knowledge that people possess at an automatic level was assumed to be common to everyone in American culture. The dual-attitude model, in contrast, focuses on implicit evaluations that vary from person to person. Similarly, Banaji and her colleagues (Banaji & Greenwald, 1995; Banaji & Hardin, 1996; Blair & Banaji, 1996; Greenwald & Banaji, 1995) have focused on the extent to which stereotypic beliefs, not affect or evaluation, can be activated automatically. For example, Banaji and Hardin found evidence for the automatic activation of gender stereotypes but noted that their results demonstrated the activation of stereotypical beliefs but not attitudes or evaluations.

Despite these differences, there are elements of the dual-attitude hypothesis in models that focus on stereotype activation. Although stereotypes and prejudice are separate constructs—one referring to knowledge structures, the other referring to evaluations and affect (Judd & Park, 1993)—a stereotype usually has evaluative implications. It is not much of a theoretical leap to say that if a negative stereotype of an out-group is activated automatically, then the evaluation implied by that stereotype is too (Dovidio et al., 1996). Consistent with this view, Devine (1989a, 1989b) compared the automatic knowledge component of a stereotype with a bad habit that has affective consequences (e.g., it can serve as a negative prime when one is evaluating another person; see Devine, 1989b, Experiment 2; Lepore & Brown, 1997). To the extent that an evaluation is activated automatically and to the extent that people also possess a more explicit attitude of a different valence, a dual attitude exists.

The most similar approach to our dual-attitude model is Gaertner and Dovidio's (1986) research on aversive racism. They argued that some White Americans are best characterized as aversive racists, defined as people who consciously endorse egalitarian values about African Americans but who have negative feelings that are "typically excluded from awareness" (Gaertner & Dovidio, 1986, p. 62). Similar to other dual models of stereotyping, Gaertner and Dovidio suggested that there are both automatic and controlled components to prejudice. Unlike the other approaches, however, they considered both components to have the properties of attitudes, one assessed by self-report instruments and the other by implicit measures, such as priming techniques developed by Fazio et al. (1995) and Dovidio et al. (1997). As argued by Dovidio et al., "Self-reported attitudes and response latency measures of attitudes may both be valid measures of attitudes (one conscious, the other unconscious) that predict different types of behaviors" (p. 518).

Evidence for Dovidio et al.'s (1997) characterization of prejudice comes from two main sources. First, as already mentioned, a number of studies have found low correspondence between implicit and explicit measures of prejudice (Dovidio et al., 1997; Fazio et al., 1995; Gaertner & McLaughlin, 1983; Greenwald et al., 1998), suggesting that people have two evaluations with different valences toward the same group. Second, there is some evidence that automatic and explicit evaluations predict different behaviors (Dovidio, 1995; Dovidio et al., 1997; Fazio et al., 1995). As summarized in Table 2, implicit measures of prejudice have been found to predict behaviors that people do not monitor consciously, such as how friendly they acted toward an African American experimenter (Fazio et al., 1995) and how often they handed a pen to an African American confederate, as opposed to placing it on a table (Wilson, Damiani, & Shelton, 1998). Conscious, explicit measures have tended to predict behaviors that people monitor more closely, such as their ratings of how guilty a Black defendant is. These findings are consistent with the hypothesis that people can hold two contradictory attitudes toward out-groups, one automatic and one more controlled, each of which predicts different social behaviors. We consider these results to be important evidence for the dual-attitude model.

As previously mentioned, Fazio et al. (1995) and Greenwald et al. (1998) interpreted the results summarized in Table 2 somewhat differently, suggesting that people have only one attitude toward out-groups. They argued that, rather than constituting another attitude, people's responses to explicit measures reflect the motivation to control prejudice. Consistent with this view, Fazio et al. found that participants responded differently to the Modern Racism Scale when it was administered by a White versus a Black experimenter.

Table 2
Evidence for Differential Predictive Validity of Automatic Prejudiced Attitudes and Explicit Prejudiced Attitudes

Behaviors predicted by automatic evaluation	
Whites' friendliness toward African American experimenter (as rated by the African American experimenter)	Fazio et al. (1995)
Whites' friendliness toward African American participant (as rated by the African American participant)	Dovidio (1995)
Number of times Whites handed pen to African American vs. placed pen on table	Wilson, Damiani, & Shelton (1998)
Nonverbal behavior toward African American and White interviewers[a]	Dovidio et al. (1997)
Behaviors predicted by explicit attitudes	
Whites' friendliness toward African American participant (as rated by the White participant)	Dovidio (1995)
Attitude toward Rodney King verdict	Fazio et al. (1995)
Attractiveness ratings of photos of Blacks vs. Whites	Fazio et al. (1995)
Ratings of guilt of African American defendants	Dovidio et al. (1997)

[a] The rate at which participants blinked their eyes while being interviewed by an African American and a White interviewer and the amount of time participants spent looking at each interviewer.

Dunton and Fazio (1997) and Greenwald et al. (1998) acknowledged, however, that the motivation to control prejudice can stem from personal standards that have been internalized as well as concerns about public presentation (Devine, Monteith, Zuwerink, & Elliot, 1991; Monteith, 1993). In other words, there are people who have prejudiced, automatic attitudes but also internalized, nonprejudiced beliefs that motivate them to act in a more positive way toward members of out-groups, even when concerns about public self-presentation are subtracted out. We believe that such a state of affairs fits our definition of dual attitudes. In our terms, such people have a habitual, implicit, prejudiced attitude and an explicit, egalitarian attitude. This approach differs from Fazio et al.'s (1995) and Greenwald et al.'s only in the willingness to call this latter set of beliefs an attitude. Like Dovidio et al. (1997), we believe that it makes sense to say that people have two attitudes toward minority groups: one that is expressed on automatic measures and one that is expressed on more deliberative, controlled measures.

Which type of dual attitude characterizes evaluations in the domain of prejudice? As seen in Table 1, a key issue in distinguishing different types of dual attitudes is the extent to which people are aware of their implicit attitude. In the literatures we have reviewed so far (e.g., McClelland's [1985] research on motivation), it has been assumed that people are unaware of the implicit attitude because of repression or independence. Interestingly, in the realm of prejudice, there is disagreement on this key issue.

The aversive racism model argues most strongly that people are unaware of their implicit attitudes (in this case, negative attitudes toward African Americans). Gaertner and Dovidio (1986) argued that such feelings "are typically excluded from awareness" (p. 62), and Dovidio et al. (1997) argued that many Whites "harbor unconscious negative attitudes toward Blacks" (p. 534) while at the same time maintaining explicit positive attitudes. According to these researchers, prejudiced attitudes are unconscious because these feelings are threatening to the aversive racist's self-image, motivating him or her to keep them out of awareness. This state of affairs fits our definition of repression.

The aversive racism model also allows, however, for the occasional intrusion into consciousness of racist attitudes. "When a situation or event threatens to make the negative portion of their attitudes salient," argued Gaertner and Dovidio (1986), "aversive racists are motivated to repudiate or dissociate these feelings from their self-image, and they vigorously try to avoid acting wrongly on the basis of these feelings" (p. 62). Aversive racists seem to be in one of two states: Sometimes, they succeed in keeping their prejudiced attitudes outside of awareness and genuinely believe that they do not possess such feelings. People have implicit negative attitudes that are "expressed subtly and indirectly in interactions involving blacks" (Gaertner & Dovidio, 1986, p. 67) but "still perceive themselves as being nonprejudiced and egalitarian" (p. 73). Other times, people become aware of their negative feelings and do their best to deny or suppress these feelings, which fits our definition of motivated overriding (see Table 1). People are aware of their implicit attitude but do not want to possess it. With sufficient capacity and motivation, they succeed in overriding the implicit attitude with a different one (in this case, a more positive attitude toward Blacks).

Fazio et al.'s (1995) and Greenwald et al.'s (1998) research on prejudice is also compatible with our definition of motivated overriding. These authors assumed that people are aware of their automatically activated attitudes toward minority groups and that people are motivated to hide or disguise these attitudes. As noted earlier, this view differs from the dual-attitude model only in the willingness to call the explicit response an attitude. We believe it makes sense to do so, to the extent that privately held egalitarian evaluations govern people's explicit responses and not just concerns about public posture. If so, this research fits our definition of motivated overriding: (a) An implicit attitude is activated; (b) people are aware of this attitude; (c) they also retrieve from memory a more egalitarian attitude; and (d) if they have capacity and motivation, they override the implicit attitude with the explicit one.

It is admittedly difficult, though, in a domain as controversial as prejudice, to disentangle a privately held attitude from concerns about public self-presentation. Although progress is being made in this area (Plant & Devine, 1998), we believe that the best way to investigate motivated overriding is to move to a "colder" domain than prejudice, in which there is not such a strong tendency to disguise one's feelings or to conform to societal norms.

Affective Perseverance

To study motivated overriding in the laboratory, it is necessary to create an attitude and then convince people that this attitude is incorrect (e.g., that the information it is based on is flawed or inaccurate). The question is, Can people erase their initial attitude and replace it with a corrected one? Or, does the original attitude persist at an implicit level, as it appears to do in the area of prejudice? In a study by Golding, Fowler, Long, and Latta (1990), participants read several facts about a target person and formed an impression of him. Participants in one condition were then told that a mistake had been made, namely, that the last set of facts they read—which were all negative—actually referred to someone else. These people's attitudes toward the target person were as positive as the attitudes of people who did not receive the false-negative information, suggesting that they were able to "erase" their initial impression and form a new one that disregarded the false-negative facts.

However, it is important to note that Golding et al. (1990) included only an explicit measure of people's attitude toward the target person, namely, ratings on an attitude scale. It may be that people's initial negative attitude persisted at an implicit level. To find out, Wilson, Lindsey, and Anderson (1998) conducted a study similar to Golding et al.'s, except that they assessed attitudes with both explicit and implicit attitude measures. The predictions were that (a) people would override their discredited initial attitude on explicit measures, if they had sufficient capacity and motivation, but that (b) their original attitude would persevere on implicit attitude measures.

Participants listened to tape-recorded descriptions of an extremely unlikable person (a convicted sex offender) and a likable person (a prosecutor who was responsible for capturing the sex offender). Photographs of the people being described were projected during each recording, with the assumption that people would develop fairly strong positive or negative attitudes toward the people depicted in the photographs. After listening to the

descriptions, some participants were told that the experimenter had accidentally switched the photographs, such that the person who they thought was the sex offender was actually the prosecutor, and vice versa. After apologizing for the error, the experimenter said that she would project the picture of the "correct" person while people rated him. Thus, when rating the sex offender, people in the switch condition saw the photograph of the man who they originally thought was the prosecutor.

The dependent measures were as follows. First, all participants evaluated the people in the interviews on semantic differential scales assessing the affective, cognitive, and evaluative components of attitudes (Crites et al., 1994). They were given unlimited time to answer these questions, with the assumption that in the switch condition, people would ignore their initial "illegitimate" association to the pictures and would report their newer attitude (as in Golding et al.'s [1990] study). Next, people completed trait ratings of the target people under time pressure (3 s per question) or no time pressure (30 s per question). Wilson, Lindsey, and Anderson (1998) predicted that people in the switch condition would report their initial attitude under time pressure but the new "corrected" attitude under no time pressure. Finally, they included both explicit and implicit measures of people's attitude toward the sex offender. Participants read a letter that supposedly had been written by the sex offender from prison, complaining about the conditions of the prison and asking for a pen pal. After reading the letter, participants completed four questions that directly assessed their reaction to the sex offender, such as how likely they would be to write him a letter and how sympathetic they were to his complaints. Wilson, Lindsey, and Anderson hypothesized that people would view their liking for the sex offender as relevant to these questions and that those in the switch condition would thus ignore their implicit attitude and report their newer "correct" attitude. Other items were more implicit, such as one that asked how much people agreed with the statement, "Prisons in America should be reformed so that they are more humane places for people to live." Wilson, Lindsey, and Anderson predicted that people would be less likely to view their liking as relevant to these questions and that those in the switch condition would thus be less likely to attempt to ignore or correct for their implicit attitude. Finally, they measured ambivalence with measures developed by Thompson et al. (1995) to test alternative interpretations of dual attitudes.

The results were largely as predicted regarding people's attitudes toward the sex offender.[3] As Figure 1 shows, people in the no-switch condition reacted in similar ways on all of the dependent measures. This was to be expected because they had only one attitude. In contrast, people in the switch condition reacted differently on the different dependent measures. They were relatively unaffected by the switch on the standard attitude measures and in their explicit reactions to the letter. The same was true of their trait ratings when they were given ample time to respond. There was no significant effect of the switch manipulation on any of these measures.

If these had been the only dependent measures, researchers might have concluded that people were quite capable of erasing their initial attitude, such that they had only one updated evaluation of the sex offender. The results of the remaining dependent measures, however, were different. When people were allowed only 3 s to give their trait ratings of the sex offender, those in the switch

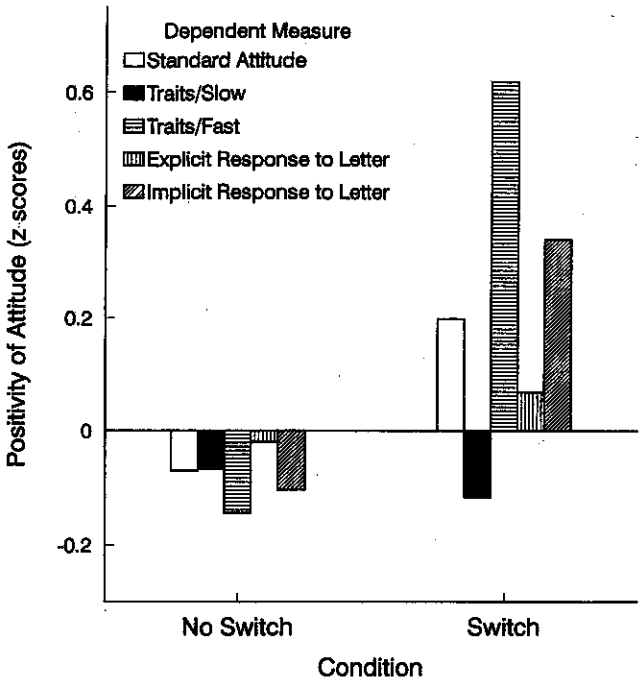


Figure 1. Attitudes toward sex offender as a function of type of measure and switch condition. All means have been standardized and scored such that the higher the number, the more positive the attitude. Data are from Wilson, Lindsey, and Anderson (1998).

condition gave significantly more positive evaluations, as if they could not as easily ignore the positive evaluation that had originally been associated with the photograph of the offender. They also expressed more positive attitudes on the implicit measures (e.g., how sympathetic to prison reform they were after reading the letter from the sex offender; see Figure 1). Wilson, Lindsey, and Anderson (1998) termed this finding *affective perseverance,* which is the case when an implicit evaluation of a stimulus persists even after it has been discredited. This finding is similar to belief perseverance (L. Ross, Lepper, & Hubbard, 1975), except that it is a discredited affective reaction that persists, not a discredited belief

[3] There were few effects of the switch manipulation on people's attitudes toward the prosecutor, possibly because, when rating the prosecutor, people in the switch condition avoided looking at the picture of the person who they originally thought was the sex offender. By not looking at the picture, the evaluation they had originally formed was less likely to be accessed and expressed on the dependent measures. We should also note that because several participants were suspicious about the switch of pictures, we eliminated them from the analyses. Given these limitations of the study, it is important to note that Gregg (2000) recently found very similar results. He induced positive and negative attitudes toward members of two hypothetical groups and then told some participants that he had accidentally reversed the names of the groups. People changed their attitudes toward the groups on a measure of explicit attitudes, but their original attitudes persisted on a measure of implicit attitudes (the Implicit Association Test).

(e.g., that one has good interpersonal skills).[4] Finally, it is noteworthy that there were no significant differences in ambivalence or affective–cognitive discrepancies between people in the switch and no-switch conditions, bolstering the claim that dual attitudes are distinct from states of ambivalence and attitudes with discrepant components.

We can pose the following question about the participants in the switch condition of Wilson, Lindsey, and Anderson's (1998) study: What was their attitude toward the sex offender? Their responses on the explicit measures of liking, when not under time pressure, were similar to those of their counterparts in the no-switch condition, suggesting that they were unambivalently negative toward this despicable person. Their responses when under time pressure and on the implicit measures suggest that they had a more positive attitude than their counterparts in the no-switch condition. We suggest that they had dual attitudes, with the attitude that was expressed depending on their cognitive capacity and the nature of the measure (explicit or implicit).

Studies of Automatic Overriding

So far, we have presented examples of repression, independence, and motivated overriding but have not yet demonstrated automatic overriding. This kind of dual attitude is similar to motivated overriding, in that people have an implicit attitude that is overridden, under some circumstances, by an explicit attitude. However, this overriding process is hypothesized to occur more automatically and does not require extensive capacity or motivation. Specifically, when people do not retrieve an explicit attitude from memory, the implicit attitude determines how they respond on explicit measures. Unlike the case of motivated overriding, however, once A_E is retrieved, it automatically overrides A_I. That is, in the case of motivated overriding, people are fully aware of A_I and must exert effort to replace it with A_E (as when people exert effort to replace a prejudiced attitude with a nonprejudiced one). In contrast, with automatic overriding, A_E replaces A_I with little effort or capacity. People may have little awareness of the implicit attitude because it is quickly replaced by A_E.

A fascinating implication of automatic overriding is that dual attitudes may not be limited to cases in which people are motivated to disguise or replace an implicit attitude (as in studies of prejudice and affective perseverance). An explicit attitude might override an implicit attitude in virtually any domain, even when neither attitude is viewed as more legitimate or desirable than the other. Consider, for example, the many studies of attitude change in social psychology, such as change resulting from introspection about the reasons for one's attitudes (Wilson, Dunn, et al., 1989). Attitudes resulting from analyzing reasons might not fully replace people's preexisting evaluations, resulting in dual attitudes. Habitual implicit attitudes may be as slow to change as habitual motor behaviors, as in our tennis analogy.

We have tested this hypothesis by using manipulations known to produce attitude change, such as asking people to analyze the reasons for their attitudes. When we were measuring people's attitudes, some participants were asked to respond under time pressure and others were not. If genuine attitude change occurs and the new attitude replaces the old one, then it should not matter whether people respond under time pressure. There is only one attitude to retrieve from memory, and it should be accessible under fast and slow response conditions. If people adopt a new explicit attitude, however, that overrides but does not replace an implicit attitude, then the time-pressure manipulation should influence the attitude that people report.

According to the dual-attitude model, implicit attitudes are activated automatically, whereas newer attitudes require more capacity and motivation to retrieve from memory. With limited response time, then, people will not have the opportunity to retrieve their explicit attitude and will report the implicit evaluation. Under these conditions, people are fully aware of their implicit attitude, and it determines their responses on explicit attitude measures. With a longer response time, people will retrieve A_E from memory, and it will override the implicit attitude, determining their responses on explicit attitude measures.

Analyzing reasons and time pressure. To test these hypotheses, Wilson and Lindsey (1998) replicated a study by Wilson and Kraft (1993), in which people involved in steady dating relationships rated how happy they were with their relationships. A few weeks later, people were randomly assigned to a reasons condition, in which they wrote down (privately and anonymously) why they felt the way they did about their relationship, or to a control condition, in which they wrote down why they had chosen their major. All participants then rated again how happy they were with their dating relationships. Crossing the reasons manipulation, half of the participants were given only 3 s to respond to this question, whereas the other half were given 30 s.

The main dependent measure was the correlation between people's initial attitude and their attitude after participating in the study. As shown in Table 3, participants in the no-reasons/no-time-pressure condition reported very similar attitudes at Times 1 and 2 ($r = .80$), whereas participants in the reasons/no-time-pressure condition tended to change their attitude at Time 2 ($r = .10$). This difference, which was significant, replicates previous studies on the effects of analyzing reasons (e.g., Wilson & Kraft, 1993). When people answered the attitude questions under time pressure, however, the standard effect of analyzing reasons was not replicated. Instead, little attitude change was found in either the no-reasons or the reasons condition. A planned contrast testing the specific pattern of predicted correlations (with weights of -3 to the reasons/no-time-pressure correlation and weights of 1 to the other three correlations) was significant.

These results raise the following question: When people analyzed reasons for their relationships with their dating partners, was their attitude the new explicit one based on their analysis, or was

[4] As a more stringent test of the hypothesis that the switch affected the implicit measures more than the explicit ones, all responses were converted to standard scores, and a series of 2 (switch condition) × 2 (type of measure) between–within analysis of variance was performed. The Switch × Type of Measure interaction was significant when responses to the trait items were compared in the fast versus slow response conditions. The interaction was also significant when the standard attitude scales were compared with the fast response–trait ratings and was nearly significant ($p = .06$) when the explicit reactions of the letter from the sex offender were compared with the implicit reactions and when the standard attitude ratings were compared with the implicit reactions to the letter. These analyses suggest that the effects of the switch manipulation were significantly larger on the implicit measure and speeded responses than on the other measures.

Table 3
Effects of Analyzing Reasons and Time Pressure on the Stability of Attitudes Toward a Dating Relationship

	Reasons condition	
Time-pressure condition	Control	Reasons
No time pressure		
n	12	17
r	.80	.10
Time pressure		
n	16	19
r	.74	.61

Note. The dependent measure is the correlation between people's attitudes toward the dating relationship in the mass testing session and attitudes toward the dating relationship in the laboratory session. Data are from Wilson and Lindsey (1998).

it their preexisting attitude reported earlier at the mass testing session? We suggest that the answer is both and that the one they reported depended on how they were asked. Under time pressure, they reported their initial attitude; under no time pressure, they reported their newer attitude.

One question raised by this interpretation is why people's newer reasons-based attitude was not reported in the time-pressure condition. Because the newer attitude was formed more recently than the one reported at Time 1, it might be argued that this attitude was more accessible and should have been reported on the fast response measure. Alternatively, we suggest that implicit attitudes often become habitual and automatic, such that they are the default "knee-jerk" response when people are under cognitive load—even if a new attitude has been constructed more recently. This interpretation is consistent with Jost's law, which says that older associations are likely to be especially accessible (Hovland, 1951). With substantial practice, new constructions can replace implicit attitudes, just as, with practice, a new serve can become automatic for a tennis player, replacing an earlier technique. Without extensive practice, explicit attitudes are predicted to override, but not replace, earlier automatic ones and to require more cognitive capacity to be expressed.

Another key issue concerns the point at which people in the reasons condition formed a new attitude and stored it in memory. We believe that the attitude change occurred on-line as people analyzed their reasons. That is, as people brought to mind reasons why they felt the way they did about their relationship, they formed a new attitude and stored it in memory. Alternatively, people who analyzed reasons might not have changed their attitudes until they were asked to report how they felt and had ample time to construct a new attitude. We call this the "triggered-change hypothesis" because it assumes that attitude change did not occur until it was triggered by the attitude dependent measure. This interpretation further assumes that it took time, after people were asked for their attitude, to consolidate their thoughts and form a new evaluation. Thus, rather than having two attitudes, people in the time-pressure/reasons condition possessed only their implicit attitude, because the attitude change process did not have time to unfold.

We believe that the triggered-change interpretation is implausible for a number of reasons. First, there is growing evidence that people spontaneously form inferences about themselves and the social world (e.g., Carlston & Skowronski, 1994; Graesser, Singer, & Trabasso, 1994; Hastie & Park, 1986; Newman & Uleman, 1989), and it seems unlikely that people who analyzed reasons would wait to change their attitudes until the experimenter asked them how they felt.

Support for this interpretation comes from research by Mackie and Asuncion (1990), who examined the conditions under which people changed their attitudes spontaneously while reading a persuasive message (on-line change) or only after reading the message and being asked for their evaluation (triggered, memory-based change). Mackie and Asuncion found on-line attitude change whenever people were "aware of the relevance or importance of message arguments for their attitudes" (p. 14). On-line attitude change seemed to be the default response, preventable only by making people focus on nonattitudinal aspects of the message (e.g., by asking them to proofread the message or to jot down every verb they heard). We suggest that analyzing the reasons for one's attitudes triggers on-line change because it virtually guarantees that people will recognize the relevance of their thoughts to their attitudes—the condition that Mackie and Asuncion found is necessary for such change.

Data from previous studies support the idea that people change their attitudes while analyzing reasons. If attitude change does not occur until people are asked how they feel, then it should take a relatively long time to report an attitude after analyzing reasons, because people need time to think about their reasons and construct their attitude (Mackie & Asuncion [1990] followed the same logic, using response time to attitude questions as their measure of on-line versus memory-based attitude change). Although response time was not measured in Wilson and Lindsey's (1998) study, in two previous studies of the effects of analyzing reasons (Wilson & Dunn, 1986, Study 2; Wilson et al., 1984, Study 1), it was measured. In both studies, people familiarized themselves with five puzzles. Half then analyzed why they felt the way they did about each puzzle, and half did not analyze reasons. All participants then reported how much they liked each puzzle, and a computer timed their response to each question. In both studies, the reasons manipulation changed people's attitudes toward the puzzles. If the triggered-change hypothesis were true, this change should not have occurred until people were asked to report their attitudes, and the time it took them to recompute their attitudes should have resulted in longer response times in the reasons condition. People in the control condition, who did not recompute their attitudes, should have responded relatively quickly.

Contrary to the triggered-change hypothesis, people in the reasons conditions reported their attitudes faster than people in the control conditions did (M = 4.92 vs. 5.70 s, z = 2.37, p = .02, averaged across studies). These results are inconsistent with the triggered-change hypothesis and instead support the view that people recomputed their attitudes while analyzing reasons prior to the attitude questions.

There was a third condition in Wilson and Dunn's (1986) experiment that provides a better comparison with the reasons condition. In a focus condition, people were asked to think about how they felt about the puzzles (as opposed to why they felt the way they did) before rating them. Wilson and Dunn predicted and found that this focus did not lead to any attitude change; that is, people who focused on their attitudes did not change their atti-

tudes, whereas people who analyzed reasons did. Consistent with previous research by Fazio (1995), focusing on people's attitude increased its accessibility; people in the focus condition took an average of 5.90 s to respond to the attitude questions, whereas control participants took an average of 6.75 s ($p < .05$). Of most relevance is the fact that people in the reasons condition also reported their attitudes relatively quickly ($M = 5.91$ s). The fact that these participants reported their new attitudes so quickly provides strong evidence that they had consolidated these attitudes into memory before they were asked how they felt.

It is interesting to recall, in light of this finding, that when people were under time pressure in Wilson and Lindsey's (1998) study—having to report their attitude within 3 s—there was no evidence of attitude change due to analyzing reasons. We view this as support for our dual-attitude hypothesis: Even when a new attitude has been constructed and is relatively accessible, an older, more habitual attitude can remain and be the default response when people are under severe cognitive load. When people are not under cognitive load, as in Wilson et al.'s (1984) and Wilson and Dunn's (1986) studies, the recently constructed attitude can be retrieved and reported relatively easily. We discuss ways in which constructed attitudes can override implicit attitudes in more detail later.

Two other findings from Wilson and Lindsey's (1998) study are noteworthy. First, consistent with the hypothesis that dual attitudes are distinct from ambivalence, there were no significant differences in ambivalence between people who analyzed reasons, and were thus hypothesized to have dual attitudes, and those who did not. Second, there was no evidence that the reasons or time-pressure manipulations influenced the consistency between the affective and cognitive components of people's attitudes.

Dissonance and time pressure. Two studies by T. Y. Schooler (1990) examined one of the most common kinds of attitude change studied by psychologists: change in the insufficient-justification dissonance paradigm. Many studies have shown that inducing people to perform counterattitudinal behaviors (e.g., writing an essay against their beliefs) for low, external justification leads to attitude change in the direction of the behavior. This attitude change has been assumed to be "genuine," in the sense that the new attitude replaces the old one.

The dual-attitude model makes a different prediction. To the extent that people have an implicit attitude on the topic in question, the attitude change resulting from dissonance arousal might override, but not replace, the implicit attitude. Just as analyzing reasons leads to the construction of a new attitude that does not replace the prior one, so might dissonance reduction. T. Y. Schooler (1990) tested this hypothesis by replicating a standard insufficient-justification experiment, in which students were induced to write an essay against their attitudes (advocating a tuition increase at their university), under conditions of low or high perceived choice. The dependent measure was a question asking the students the extent to which they agreed with the statement that their university "should increase tuition by a substantial amount," with low numbers indicating agreement with the statement.

T. Y. Schooler (1990) manipulated the time that people had to respond to this question as follows: The paper with this measure on it was distributed facedown. In the time-pressure condition, participants were asked to turn it over and answer the question within 5 s. This time interval was selected because it was just enough time for people to read the statement, figure out the response scale, and make their response. In the unlimited time condition, people were given as long as they wanted to respond to the question.

The results are illustrated in Figure 2. As shown in the two bars on the left, the standard dissonance effect was replicated when people were given unlimited time to respond: People who wrote the essay under conditions of high perceived choice were more in favor of a tuition increase than were those who wrote the essay under conditions of low perceived choice. The simple effect of choice was significant in the unlimited time condition. When people were given only 5 s to respond, however, there was no evidence of attitude change. People in both the high and low choice conditions expressed opposition to a tuition increase. There was no significant difference between these means, and furthermore, the interaction between choice and time pressure was statistically significant.

The results of T. Y. Schooler's (1990) study pose an intriguing question: What is the nature of the attitude change that occurs when dissonance is aroused? The hundreds of previous studies in this area assumed that the answer was straightforward: People reduce dissonance by changing their attitude, and this new attitude replaces the previous one. We suggest a different answer: People might end up with two attitudes—their previous habitual one and their newly constructed one—and the attitude they report depends on how they are asked. In T. Y. Schooler's study, people given unlimited time to respond reported a very different attitude than those given limited time.

An alternative interpretation of T. Y. Schooler's (1990) study is similar to the triggered-change hypothesis discussed earlier. It may

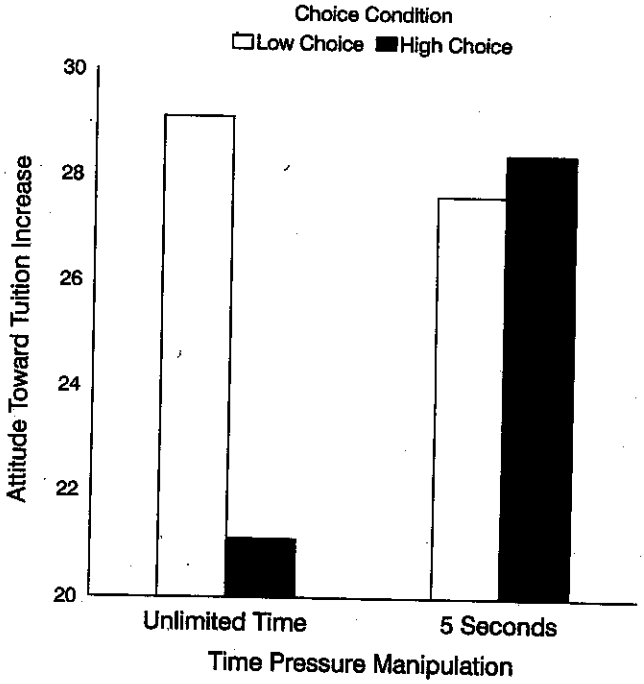


Figure 2. Dissonance and Time Pressure 1: Attitudes toward a tuition increase as a function of perceived choice to write the essay and time to respond. Higher numbers indicate more opposition to a tuition increase. Data are from T. Y. Schooler (1990).

be that people never had two attitudes toward a tuition increase; rather, dissonance was reduced in the form of attitude change only when people were asked how they felt and had sufficient time to reduce their dissonance by changing their attitude (i.e., in the unlimited time condition). According to this view, people in the time-pressure condition did not have ample time to reduce their dissonance and thus never changed their attitude.

There is evidence consistent with the idea that dissonance reduction occurs only after people write counterattitudinal essays and are asked for their attitudes, not while they are writing the essay. Simon, Greenberg, and Brehm (1995), for example, found that the way in which people reduced dissonance depended on the questions they were asked by an experimenter. In one study, Simon et al. asked participants to write counterattitudinal essays and then manipulated the order in which they received two dependent measures: a measure of their attitudes and a measure of trivialization (the tendency to minimize the importance of the essay and the issue). People tended to take the first avenue of dissonance reduction they were offered: attitude change when the attitude measures came first and trivialization when the trivialization measures came first (see also Elliot & Devine, 1994; Gotz-Marchand, Gotz, & Irle, 1974; Stone, Wiegand, Cooper, & Aronson, 1997). These results suggest that in T. Y. Schooler's (1990) study, people did not change their attitudes until they received the attitude question and had enough time to reduce their dissonance by changing their attitude. Rather than having dual attitudes, people in the time-pressure condition may never have reduced dissonance by changing their attitudes.

It is important to note, however, that there are two interpretations of Simon et al.'s (1995) results. One possibility is that dissonance reduction occurs only when people are offered a way of reducing it. According to this view, if people had not received the attitude or the trivialization questions, they might never have reduced their dissonance. A second possibility is that people do reduce dissonance spontaneously but that it takes time. If people are offered a particular mode of dissonance reduction before they have reduced the dissonance themselves, they will take whatever mode they are offered (as in Simon et al.'s 1995 study). If no one offers them a specific way of reducing dissonance, however, they will eventually find a way of reducing it on their own.

We believe that the dissonance literature supports this second interpretation of Simon et al.'s (1995) results. First, there is evidence that dissonance is an uncomfortable drive state that people are motivated to reduce (e.g., Elliot & Devine, 1994; Zanna & Cooper, 1976), and it seems implausible that people would remain in this uncomfortable state until they were offered a way out of it. Second, some dissonance studies have found evidence for attitude change on behavioral indicators of attitudes that occur before participants are asked how they feel (e.g., Cohen, Greenbaum, & Mansson, 1969; Grinker, 1969; Schlachet, 1969), which suggests that people spontaneously changed their attitudes in the absence of questions from an experimenter. As noted by Simon et al., "It may be that people typically tolerate dissonance feelings for a while and reduce dissonance only if it persists over a certain period of time or if opportunities to do so present themselves" (p. 259).

A key question, then, is how long people take to reduce dissonance on their own, in the absence of questions from an experimenter. A study by Elkin and Leippe (1986) suggests an answer. They measured galvanic skin response (GSR) at various points after people wrote counterattitudinal essays, as a measure of the arousal that accompanies cognitive dissonance. In their second study, for example, they measured GSR 0–3 min after people wrote the essay, 5–7 min later, and 9–11 min later. A key condition was one in which people were never asked to report their attitudes. In the 3 min right after people wrote the essays, their GSR was higher than baseline levels, suggesting that they had not yet reduced dissonance. At the second time of measurement, GSR began to return to baseline levels, and by the third time of measurement, GSR was at baseline levels. To the extent that the drop in GSR reflected people's successful dissonance-reduction efforts, these results suggest that people spontaneously reduced dissonance by 9–11 min after writing a counterattitudinal essay.

Given these results, it would be interesting to replicate T. Y. Schooler's (1990) time-pressure manipulation after giving people time to reduce dissonance on their own. If people still reported their original attitude under time pressure, the dual-attitude hypothesis would receive stronger support. This is precisely what T. Y. Schooler did in a second study. She replicated her first study exactly, except that she manipulated the time that elapsed between the completion of the essay and the administration of the dependent measure (the attitude question). People were given the dependent measure right after writing the essay (as in the first study), 10 min later, or 48 hr later. At each point of measurement, she again manipulated time pressure, such that some people had to express their attitude within 5 s and others had unlimited time. Schooler predicted that at each time period, people who responded under time pressure would report their original attitude against a tuition increase, whereas those given unlimited time would report their newer attitude that was more in favor of a tuition increase. Such a pattern of results would be more difficult for the triggered-change hypothesis to explain, because it is unlikely that people held their dissonance in abeyance for 48 hr, reducing it only when someone asked them how they felt.

As seen in Figure 3, the results closely replicated T. Y. Schooler's (1990) first study. The standard dissonance effect, whereby people with high choice reported a more favorable attitude toward a tuition increase than people with low choice did, was replicated when people had unlimited time to respond to the attitude questions. When people responded under time pressure, there was no evidence of attitude change. The Choice × Time Pressure interaction was significant, with no detectable effect of whether attitudes were measured right after people wrote the essay, 10 min later, or 48 hr later. The most plausible explanation of these results, we suggest, is that people reduced dissonance by changing their attitudes, especially those who had time to do so before their attitudes were measured (i.e., in the 10-min and 48-hr conditions). The new attitude did not replace the old one, however, and was reported only when people had time to retrieve this new attitude.

An alternative version of the triggered-change hypothesis is more difficult to rule out. According to this possibility, people in the 10-min and 48-hr delay conditions spontaneously reduced dissonance in some other way than by changing their attitudes. For example, they might have spontaneously engaged in self-affirmation in an unrelated domain (Steele, 1988) or trivialized the essay-writing task (Simon et al., 1995). The presentation of the attitude questions may have rearoused some dissonance that they then reduced by changing their attitudes, if they had time to do so (Higgins, Rhodewalt, & Zanna, 1979). People thus never held two

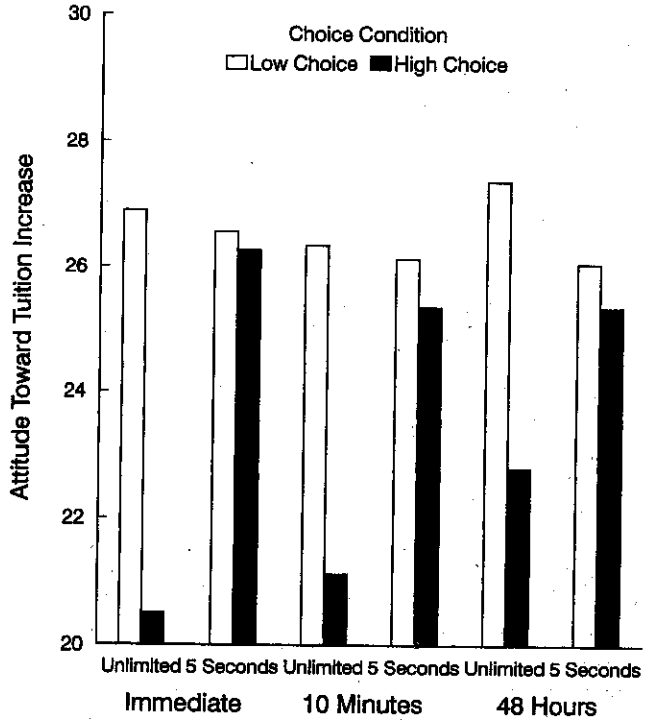


Figure 3. Dissonance and Time Pressure 2: Attitudes toward a tuition increase as a function of perceived choice to write the essay, time to respond, and delay between writing the essay and completing the attitude measure. Higher numbers indicate more opposition to a tuition increase. Data are from T. Y. Schooler (1990).

attitudes at the same time; they initially trivialized the issue and then changed their attitudes in the no-time-pressure conditions. Although we cannot definitively rule out this alternative, we note that it is contrary to studies that find that when people were offered more than one way of reducing dissonance, they typically chose only one route (e.g., trivialization or attitude change, but not both; Simon et al., 1995; Stone et al., 1997). Thus, if people had already found a way of reducing their dissonance before receiving the attitude questions, it is unlikely that they would have needed to reduce dissonance further in another way.

A closer look at automatic overriding. We believe that the most compelling interpretation of Wilson and Lindsey's (1998) and T. Y. Schooler's (1990) studies is automatic overriding. When people were under time pressure, they were unable to retrieve their explicit attitudes from memory and thus reported their implicit attitudes, which had been activated automatically. When not under time pressure, people retrieved and reported their explicit attitudes.

Such a possibility raises an intriguing question: If the implicit attitude is automatically activated and people are aware of this attitude, how can it be so easily overridden by a different one? Although the implicit attitude is the quick default response, we suggest that it can be short-circuited by the retrieval of a different evaluation. LeDoux (1996) described fear responses similarly, suggesting that information from the sensory thalamus goes first to the amygdala in rather crude form, allowing the person to react very quickly to potentially dangerous information. Information also goes to the sensory cortex on a slower path, such that the person has time to analyze it in a slower, more deliberative fashion. If necessary, this slower analysis of the information can override the initial quick reaction of the thalamus. Although we make no claims about the neurological correlates of dual attitudes, we can draw an analogy to LeDoux's arguments. People's implicit attitudes are experienced quickly (and perhaps in a rather crude, unelaborated fashion; see Giner-Sorolla, 1999). These implicit attitudes can be overridden by explicit attitudes that take longer to retrieve, particularly if the implicit attitudes are not very strong.

Are people consciously aware of experiencing an implicit attitude and then having it overridden by a constructed attitude? We suspect that in many cases they are not. LeDoux (1996), for example, suggested that information travels on thalamic pathways to the amygdala before the information reaches consciousness (see Dennett, 1991, for a description of ways in which one event in memory can be overridden by another). There may, however, be a fleeting awareness of the implicit attitude. Importantly, if people do not have the motivation or capacity to override A_I with A_E, then A_I will reach awareness and determine their explicit responses (e.g., their verbally reported attitudes).

Discussion

We presented five hypotheses about the nature of dual attitudes. Hypothesis 1 states that implicit and explicit attitudes can coexist in memory. We reviewed evidence from diverse literatures that was consistent with this hypothesis, including studies of memory, motivation, attachment, dependency, attributional style, and self-esteem. The most direct evidence for the existence of dual attitudes comes from the literature on prejudice (see Table 2) and from studies by Wilson, Lindsey, et al. (1998); Wilson and Lindsey (1998); and T. Y. Schooler (1990; see Table 3 and Figures 1–3).

Hypotheses 2–5 are more specific statements about the activation and predictive validity of dual attitudes. According to Hypothesis 2, when dual attitudes exist, the implicit attitude is activated automatically, whereas the explicit attitude requires more capacity to be retrieved from memory. When people have the capacity to retrieve their explicit attitude, it determines their responses on explicit measures of attitudes. When people do not have the capacity to retrieve their explicit attitude, their implicit attitude determines their responses on explicit measures. As noted earlier, this hypothesis is compatible with some dual-process models of prejudice, especially Dovidio et al.'s (1997) and Devine's (1989a). The studies by Wilson and Lindsey (1998), T. Y. Schooler (1990), and Wilson, Lindsey, and Anderson (1998) are also consistent with this hypothesis and have the advantage of having studied attitudes in domains that were less susceptible to alternative explanations such as self-presentation. In each of these studies, people reported implicit attitudes when under time pressure but were more likely to report explicit attitudes when not under time pressure.

Hypothesis 3 states that implicit attitudes will determine people's implicit responses, even when an explicit attitude has been retrieved from memory. Support for this hypothesis was found in a number of literatures that examined the relationship between behavioral measures and implicit measures of motives, schemas, and attitudes, such as the literatures on implicit motivation and prejudice (see Table 2). More direct support was found in Wilson, Lindsey, et al.'s (1998) study, in which people's implicit attitudes

predicted implicit responses (e.g., their ratings of prison reform), even after expressing their explicit attitude on explicit measures.

Hypothesis 4 states that attitude change techniques often change explicit but not implicit attitudes. The results of studies from our laboratory support this hypothesis, such as Wilson and Lindsey's (1998) experiment, in which analyzing reasons appeared to change explicit but not implicit attitudes. Additional support was obtained by Petty and Jarvis (1998), who found that people changed their attitudes on explicit measures of evaluation, whereas their original attitude, as assessed by an implicit measure, was not fully replaced.

Hypothesis 5 states that dual attitudes are distinct from ambivalence and attitudes that have discrepant affective and cognitive components. Support for this hypothesis was found in Wilson and Lindsey's (1998) and Wilson, Lindsey, and Anderson's (1998) studies. People hypothesized to have dual attitudes did not express any more ambivalence, or greater affective–cognitive discrepancies, than other participants. Similarly, Petty and Jarvis (1998) found that people with dual attitudes did not differ from people without dual attitudes on measures of ambivalence, attitude extremity, or accessibility.

It is a fair assessment that alternatives to the dual-attitude hypothesis exist in each of the literatures and studies we have reviewed. Even if some of the alternative explanations prove to be better accounts of individual studies than the dual-attitude model, however, none can account for all of the data. For example, as discussed earlier, it is not entirely clear how and when people spontaneously reduce dissonance in the absence of questions from an experimenter, which opens T. Y. Schooler's (1990) dissonance studies to an alternative explanation: Maybe people did not change their attitudes until they received the attitude-dependent measures and had time to reconsider their attitudes. Even if this triggered-change explanation proves to be correct in this domain, however, it cannot explain all of the findings we have reviewed, such as those on prejudice. No one has suggested that people change their attitudes from prejudiced to nonprejudiced ones only when filling out questionnaires in a psychology experiment. Rather, both implicit and explicit prejudiced attitudes are viewed as stable constructs that coexist in people's memory, sometimes with different valences.

As shown in Table 1, we also hypothesized that there are four types of dual attitudes, distinguished by how aware people are of their implicit attitudes and whether motivation and capacity are required to replace an implicit attitude with an explicit attitude. Although speculative, this classification is useful in illustrating the different kinds of dual attitudes that have been hypothesized to exist in diverse literatures. In each literature, we attempted to isolate the type of dual attitude—repression, independence, automatic overriding, and motivated overriding—that was most consistent with the empirical evidence. Table 4 summarizes the ways in which these literatures measured implicit attitudes and the types of dual attitudes that they have studied (we have not listed the ways in which explicit attitudes were measured in these literatures, because in all cases it was with self-report scales).

As seen in Table 4, several researchers initially attributed dual motives and attitudes to repression, arguing that the purpose of the explicit attitude was to push another attitude out of awareness because of its threatening nature. For both theoretical reasons (the increasing sovereignty of cognitive approaches) and methodological reasons (the difficulty of studying repression experimentally; Holmes, 1990; Wegner, 1989), independence is now the preferred explanation of dual attitudes, motives, and schemas in many of these literatures. Some attitudes, motives, and schemas are said to reside in the cognitive unconscious for reasons of efficiency and overlearning, not because of repression (Kihlstrom, 1987; Nisbett & Wilson, 1977). Because people do not have access to these implicit states, they develop explicit attitudes, motives, and schemas that exist independently of the nonconscious, implicit ones.

As Wilson (1985) argued, there are times when people's explicit theories about their own attitudes are so strong that they ignore evidence that their implicit attitudes are quite different (e.g., people do not notice that they often behave inconsistently with their explicit attitude). People can be blinded by their theories about themselves, in the absence of the censorship of repression. Even so, we suspect that cases of pure independence, in which people have no awareness of their implicit attitudes, are relatively rare. More often, people probably have some awareness of their implicit attitudes. In the quote from *Remembrance of Things Past* (Proust, 1934) at the beginning of this article, for example, Marcel became aware of his love for Albertine when he learned that she had left him. Despite his strong belief that his love had died, he could not ignore the anguish he felt.

The question then arises of how people reconcile an implicit attitude that differs from a more explicit one. We have argued that in some cases, the explicit attitude automatically overrides the implicit one, if people have the capacity to retrieve the explicit attitude from memory. We believe that this is the most parsimo-

Table 4
Literatures Relevant to the Dual-Attitude Model

Literature	Measure of implicit attitude	Type of dual attitude
Human motivation	TAT	Repression, independence
Attachment	AAI	Repression, independence
Dependency needs	ROD, TAT, HIT	Repression, independence
Attributional style	TAT	Independence
Prejudice and stereotyping	Automatic priming, IAT	Repression, motivated overriding
Affective perseverance	Time pressure, implicit measures	Motivated overriding
Attitudes toward relationships	Time pressure	Automatic overriding
Dissonance	Time pressure	Automatic overriding

Note. TAT = Thematic Apperception Test; AAI = Adult Attachment Interview; ROD = Rorschach Oral Dependency Scale; HIT = Holtzman Inkblot Test Dependency Scale; IAT = Implicit Association Test.

nious interpretation of Wilson and Lindsey's (1998) and T. Y. Schooler's (1990) studies. In other cases, people's implicit attitudes are more focal in awareness, and once a different attitude is retrieved from memory, people will override the implicit attitude only if they have the motivation and capacity to do so. We believe that this is the most parsimonious explanation of research on dual prejudiced attitudes and the affective perseverance study by Wilson, Lindsey, et al. (1998).

Clearly, a great deal of research needs to be done to explore further the different types of dual attitudes and the conditions under which they exist, addressing such important questions as when people are aware of their implicit attitudes. For example, one unexplored variable is the role of attitude strength and dual attitudes. We suspect that attitude strength is an important moderator, as it is in other areas of attitude research (Petty & Krosnick, 1995). Specifically, we offer the prediction that dual attitudes are most likely to exist when people have implicit attitudes of moderate strength. If the implicit attitude is weak or nonexistent, then any evaluation that people construct will be their only attitude. If the implicit attitude is extremely strong, people are unlikely to construct a new attitude that contradicts it (Chaiken et al., 1995; Fazio, 1995; Petty, Priester, & Wegener, 1994). For dual attitudes to exist, an implicit attitude has to be weak enough so as not to prevent the construction of a new attitude but strong enough to persist after the construction of the new attitude. The diverse areas we have reviewed suggest that these conditions promoting dual attitudes are not particularly rare.

Formation of Dual Attitudes

In much of the preceding discussion, we assumed that people acquire implicit attitudes before explicit ones. In the literature on prejudice, for example, people are often assumed to acquire prejudiced implicit attitudes first, by growing up in a racist family or acquiring negative stereotypes from their culture. Only later do people adopt less prejudiced, explicit attitudes that do not fully replace the implicit, prejudiced ones. Similarly, in many of the studies we have discussed, attitude change techniques caused people to adopt new explicit attitudes that coexisted with initial implicit attitudes.

It is important to note that this sequence of events is not the only possible route to dual attitudes. We offer two other possibilities. First, people might begin with an explicit attitude that is based on a theory about an attitude object but little personal experience toward it. When people acquire direct experience with the attitude object, their implicit attitude might change slowly, before any change at the explicit level. Consider a child who has always hated broccoli. Other than one or two times when her parents insisted that she eat her vegetables, she has never actually tried broccoli. Because of this lack of direct experience with the attitude object, her attitude has not had the opportunity to become ingrained at an implicit level. Nonetheless, on the basis of her one or two experiences, and her observation that few of her friends eat broccoli, she has a strong, explicit, negative attitude.

When this person reaches adulthood, she begins to eat more vegetables, including broccoli. Perhaps she nibbles on it occasionally at parties and puts a little on her plate at salad bars. On the basis of these experiences, she slowly acquires a positive implicit attitude—before, perhaps, she realizes at an explicit level that her attitude has changed. There would be a point, we suggest, at which she would emphatically claim, on an explicit attitude measure, that she dislikes broccoli, whereas she would show evidence of a positive attitude on an implicit attitude measure.

Second, it might be possible for explicit and implicit attitudes to develop simultaneously. Perhaps people learn cultural feeling rules at an explicit level (Hochschild, 1979) while simultaneously learning a different implicit attitude from their direct experiences with the attitude object. Consider the experiences of a woman in a short story by Kierstead (1981). While reminiscing about her childhood with her cousin, she suddenly realizes that her explicit attitude toward her pony was wrong:

> It wasn't until Blake said it [that he hated the pony] that Kate realized that she, too, had always hated Topper. For years they had been conned into loving him, because children love their pony, and their dog, and their parents, and picnics, and the ocean, and the lovely chocolate cake. (Kierstead, 1981, p. 48)

It turns out that Topper was a nasty little pony who stepped on Kate and Blake's feet and bit them when they fed him sugar cubes. These experiences quite likely led to a negative implicit attitude. At an explicit level, however, Kate truly believed that she loved Topper, just as she loved all the things children are supposed to love. The idea that explicit and implicit attitudes can develop simultaneously, in response to different cues, is reminiscent of Bateson's double-bind theory of schizophrenia, whereby parents tell their children they love them while nonverbally expressing quite different feelings (Bateson, Jackson, Haley, & Weakland, 1956). Although no longer generally accepted as a theory of schizophrenia, the double-bind hypothesis might be a reasonable description of one way in which dual attitudes develop.

The Nature of Overriding

Throughout this article, we have used the term *overriding* to describe the process whereby an explicit attitude can coexist with an implicit attitude. We should be clear about our use of this term, in light of recent research on the difficulty of controlling automatic processes. Bargh (1999), for example, took a pessimistic view of people's ability to control stereotyped reactions of others, arguing that (a) stereotypes are almost always activated when people encounter a member of a target group, even when people are trying to control their reactions; (b) once stereotypes are activated, they are very difficult to control or suppress; and (c) even if people succeed in controlling their stereotypes to some degree, the stereotypes will still influence implicit responses either that people cannot control (e.g., some nonverbal behaviors) or that they do not think to control (e.g., those that they do not view as expressions of their stereotype).

It might seem that our model is in opposition to this view, by arguing that implicit attitudes can be overridden, under some circumstances, by explicit ones. We believe that our approach is in fact both more pessimistic and more optimistic than Bargh's (1999). It is more pessimistic by arguing that it is difficult to change implicit attitudes in any domain, not just in the realm of stereotypes and prejudices. By including only explicit measures of attitudes, the vast literature on attitude change may have overestimated the extent to which change takes place. People may maintain implicit attitudes that continue to influence their behavior. Just

as stereotypes can become ingrained and lead to automatic, habitual, prejudiced responses, so can any attitude become ingrained and difficult to change.

Our model is more optimistic, however, in detailing how explicit attitudes can coexist with implicit ones and influence behavior under some conditions. Let us be clear that we agree with Bargh (1999) that implicit attitudes are very difficult to change and that these attitudes are activated automatically. We also agree that no matter how much people try, these attitudes will influence responses that they cannot control or are not monitoring. Nonetheless, we hypothesize that people can form explicit attitudes that are retrieved from memory and acted on under some conditions. Thus, while agreeing with Bargh about the prepotency of implicit attitudes, we are more optimistic about people's ability to simultaneously have explicit attitudes that influence at least some behaviors. As seen in our discussion of automatic overriding, we even believe that explicit attitudes can, under some circumstances, short-circuit the expression of an implicit attitude. Implicit attitudes remain, however, and as Bargh points out, continue to influence implicit responses.

Dual or Multiple Attitudes?

Once we entertain the possibility that people can have more than one attitude stored in memory, why not allow for more than two? Our main argument is that attitude models should allow for the fact that people can have both implicit and explicit attitudes toward the same object. It is possible, in principle, for people to have more than two attitudes; people might have one implicit attitude, for example, that is automatically activated, plus two or more newly constructed attitudes that were formed in specific contexts, stored in memory, and retrieved in those contexts. Similarly, people might have two or more implicit attitudes that are activated automatically, depending on the context (Wittenbrink, Judd, & Park, 1998). Given the empirical challenge of showing that people have three or more attitudes stored in memory at the same time, we have limited ourselves to the case of dual attitudes, with the acknowledgment that this may be a special case of multiple attitudes.

Conclusions and Implications

Attitudes are one of the oldest topics in social psychology, and a great deal of progress has been made in understanding how people evaluate their social worlds. A number of subareas of attitude research have flourished, such as attitude formation, structure, change, measurement, and attitude–behavior consistency (Eagly & Chaiken, 1993). It is interesting to consider the implications of our research on dual attitudes to these subareas of attitude research.

In terms of research on attitude structure, we suggest that people can have implicit attitudes and explicit attitudes at the same time. Dual attitudes are distinguishable from attitudes with discrepant affective and cognitive components, as found by Wilson, Lindsey, and Anderson (1998) and Wilson and Lindsey (1998).

The most important implications of the dual-attitude model are for conceptions of attitude change. Previous models may have exaggerated the ease with which people change their attitudes, by including only explicit measures of attitudes. Although people may report new explicit attitudes, they may still have their older, habitual, implicit attitudes that will be expressed under cognitive load and on other measures (e.g., implicit responses). Although the difficulty of changing some kinds of habitual attitudes has been recognized for some time (e.g., racial prejudice; Devine, 1989a), we suggest that any kind of attitude can become habitual and difficult to change.

Another unexplored area is what happens to dual attitudes over time. Eventually, one attitude probably wins out. In many cases, the explicit attitude probably fades, and the implicit attitude becomes prepotent again. If, however, people frequently "practice" the new attitude—think about it, discuss it with their friends, act on it—the attitude may become habitual, replacing the prior implicit attitude (just as, with a great deal of practice, an older, automatic motor response can be replaced with a new one). In short, the process of attitude change may often require more time and practice than previously thought.

Similarly, our research sheds light on attitude–behavior consistency. For many years, social psychologists have investigated the conditions under which attitudes will and will not predict people's behavior (e.g., Fazio, 1986; Fishbein & Ajzen, 1975; LaPiere, 1934; Wicker, 1969), and again, considerable progress has been made. Our research suggests that the attitude–behavior relationship is likely to depend on the type of attitude involved (an implicit attitude or an explicit attitude) and the type of behavior involved (implicit vs. explicit behavior). Note that this argument is compatible with others who have noted the importance of considering the type of attitude and the type of behavior involved (Fazio, 1990; Millar & Tesser, 1986a). The main difference is that these previous approaches adopted a "between-subjects" approach, whereby different individuals with different kinds of attitudes are said to act differently. Our approach is "within-subjects," in that the same individual can have both an implicit attitude and an explicit attitude, which predict different kinds of behaviors.

Finally, our research has implications for attitude measurement. Clearly, before researachers make claims about the extent to which they have changed people's attitudes, they should include measures of implicit and explicit attitudes. Similar to the personality variables we reviewed earlier, such as motives and attachment styles, implicit attitudes may be more like dispositions than labile evaluations. Interestingly, this view is reminiscent of early conceptions of attitudes as mental sets that operate automatically without conscious effort, such as the research of Lange (1888) and the Würzberg school. Due in part to the development of self-report attitude scales by Thurstone (1928) and Likert (1932), the term *attitude* eventually came to mean a more conscious, explicit response. We suggest that both meanings of *attitude* are accurate and that, when feasible, implicit and explicit measures be included in attitude research.

References

Ainsworth, M. D. S. (1973). The development of infant–mother attachment. In B. M. Caldwell & H. N. Ricciuti (Eds.), *Review of child development research* (Vol. 3, pp. 1–94). Chicago: University of Chicago Press.

Allport, G. W. (1935). Attitudes. In C. Murchison (Ed.), *A handbook of social psychology* (pp. 798–844). Worcester, MA: Clark University Press.

Anderson, N. H. (1974). Cognitive algebra: Integration theory applied to

social attribution. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 7, pp. 1–101). New York: Academic Press.

Arieli, A., Sterkin, A., Grinvald, A., & Aertsen, A. (1996, September 27). Dynamics of ongoing activity: Explanation of the large variability in evoked cortical responses. *Science, 273,* 1868–1871.

Atkinson, J. W. (1964). *An introduction to motivation.* New York: Van Nostrand.

Banaji, M. R., & Greenwald, A. G. (1995). Implicit gender stereotyping in judgments of fame. *Journal of Personality and Social Psychology, 68,* 181–198.

Banaji, M. R., & Hardin, C. D. (1996). Automatic stereotyping. *Psychological Science, 7,* 136–141.

Bargh, J. A. (1989). Conditional automaticity: Varieties of automatic influences in social perception and cognition. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 3–51). New York: Guilford Press.

Bargh, J. A. (1997). The automaticity of everyday life. In R. S. Wyer (Ed.), *Advances in social cognition* (Vol. 10, pp. 1–61). Mahwah, NJ: Erlbaum.

Bargh, J. A. (1999). The cognitive monster: The case against controllability of automatic stereotype effects. In S. Chaiken & Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 361–382). New York: Guilford Press.

Bargh, J. A., Chaiken, S., Raymond, P., & Hymes, C. (1996). The automatic evaluation effect: Unconditional automatic attitude activation with a pronunciation task. *Journal of Experimental Social Psychology, 32,* 104–128.

Bartholomew, K., & Shaver, P. R. (1998). Methods of assessing adult attachment: Do they converge? In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 25–45). New York: Guilford Press.

Bateson, G., Jackson, D. D., Haley, J., & Weakland, J. (1956). Toward a theory of schizophrenia. *Behavioral Science, 1,* 251–264.

Bekerian, D. A., & Bowers, J. M. (1983). Eyewitness memory: Were we misled? *Journal of Experimental Psychology: Learning, Memory, and Cognition, 9,* 139–145.

Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1–62). New York: Academic Press.

Bem, D. J., & McConnell, H. K. (1970). Testing the self-perception explanation of dissonance phenomena: On the salience of premanipulation attitudes. *Journal of Personality and Social Psychology, 14,* 23–31.

Blair, I. V., & Banaji, M. R. (1996). Automatic and controlled processes in stereotype priming. *Journal of Personality and Social Psychology, 70,* 1142–1163.

Bornstein, R. F. (1995). Sex differences in objective and projective dependency tests: A meta-analytic review. *Assessment, 2,* 319–331.

Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment.* New York: Basic Books.

Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss, sadness, and depression.* London: Hogarth Press.

Brandimonte, M. A., Schooler, J. W., & Gabbino, P. (1997). Attenuating verbal overshadowing through color retrieval cues. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 23,* 915–931.

Breckler, S. J. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitudes. *Journal of Personality and Social Psychology, 47,* 1191–1205.

Cacioppo, J. T., & Berntson, G. G. (1994). Relationship between attitudes and evaluative space: A critical review, with emphasis on the separability of positive and negative substrates. *Psychological Bulletin, 115,* 401–423.

Cacioppo, J. T., Gardner, W. L., & Berntson, G. G. (1997). Beyond bipolar conceptualization and measures: The case of attitudes and evaluative space. *Personality and Social Psychology Review, 1,* 3–25.

Carlston, D. E., & Skowronski, J. J. (1986). Trait memory and behavior memory: The effect of alternative pathways on impression judgment response times. *Journal of Personality and Social Psychology, 50,* 5–13.

Carlston, D. E., & Skowronski, J. J. (1994). Savings in the relearning of trait information as evidence for spontaneous inference generation. *Journal of Personality and Social Psychology, 66,* 840–856.

Chaiken, S. (1980). Heuristic versus systematic information processing in the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology, 39,* 752–766.

Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario Symposium* (Vol. 5, pp. 3–39). Hillsdale, NJ: Erlbaum.

Chaiken, S., Pomerantz, E. M., & Giner-Sorolla, R. (1995). Structural consistency and attitude strength. In R. Petty & J. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 387–412). Hillsdale, NJ: Erlbaum.

Chaiken, S., & Yates, S. M. (1985). Attitude schematicity and thought-induced attitude polarization. *Journal of Personality and Social Psychology, 49,* 1470–1481.

Clore, G. L. (1994). Why emotions are never unconscious. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 285–290). New York: Oxford University Press.

Cohen, A. R., Greenbaum, C. W., & Mansson, H. H. (1969). Commitment to social deprivation and verbal conditioning. In P. G. Zimbardo (Ed.), *The cognitive control of motivation* (pp. 174–185). Glenview, IL: Scott, Foresman.

Converse, P. E. (1970). Attitudes and non-attitudes: Continuation of a dialogue. In E. R. Tufte (Ed.), *The quantitative analysis of social problems* (pp. 168–189). Reading, MA: Addison-Wesley.

Craig, J., Koestner, R., & Zuroff, D. C. (1994). Implicit and self-attributed intimacy motivation. *Journal of Social and Personal Relationships, 11,* 491–507.

Crites, S. L., Jr., Fabrigar, L. R., & Petty, R. E. (1994). Measuring the affective and cognitive properties of attitudes: Conceptual and methodological issues. *Personality and Social Psychology Bulletin, 20,* 619–634.

De Houwer, J., Hermans, D., & Eelen, P. (1996). *Affective and identity priming with episodically associated stimuli.* Unpublished manuscript, University of Leuven, Leuven, Belgium.

Dennett, D. C. (1991). *Consciousness explained.* Boston: Little, Brown.

Devine, P. G. (1989a). Automatic and controlled processes in prejudice: The role of stereotypes and personal beliefs. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function* (pp. 181–212). Hillsdale, NJ: Erlbaum.

Devine, P. G. (1989b). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology, 56,* 5–18.

Devine, P. G. (1995). Prejudice and out-group perception. In A. Tesser (Ed.), *Advanced social psychology* (pp. 467–524). New York: McGraw-Hill.

Devine, P. G., Monteith, M. J., Zuwerink, J. R., & Elliot, A. J. (1991). Prejudice with and without compunction. *Journal of Personality and Social Psychology, 56,* 5–18.

Dovidio, J. F. (1995, August). *Stereotypes, prejudice, and discrimination: Automatic and controlled processes.* Paper presented at the 103rd Annual Convention of the American Psychological Association, New York.

Dovidio, J. F., Brigham, J. C., Johnson, B. T., & Gaertner, S. L. (1996). Stereotyping, prejudice, and discrimination: Another look. In C. N. Macrae, C. Stangor, & M. Hewstone (Eds.), *Stereotypes and stereotyping* (pp. 276–319). New York: Guilford Press.

Dovidio, J. F., Kawakami, K., Johnson, C., & Johnson, B. (1997). On the nature of prejudice: Automatic and controlled processes. *Journal of Experimental Social Psychology, 33,* 510–540.

Dunton, B. C., & Fazio, R. H. (1997). An individual difference measure of

motivation to control prejudiced reactions. *Personality and Social Psychology Bulletin, 23,* 316–326.

Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes.* Fort Worth, TX: Harcourt Brace Jovanovich.

Elkin, R. A., & Leippe, M. R. (1986). Physiological arousal, dissonance, and attitude change: Evidence for a dissonance–arousal link and a "don't remind me" effect. *Journal of Personality and Social Psychology, 51,* 55–65.

Elliot, A. J., & Devine, P. G. (1994). On the motivational nature of cognitive dissonance: Dissonance as psychological discomfort. *Journal of Personality and Social Psychology, 67,* 382–394.

Erdelyi, M. H. (1985). *Psychoanalysis: Freud's cognitive psychology.* New York: Freeman.

Erdelyi, M. H. (1990). Repression, reconstruction, and defense: History and integration of the psychoanalytic and experimental frameworks. In J. J. Singer (Ed.), *Repression and dissociation* (pp. 1–32). Chicago: University of Chicago Press.

Fazio, R. H. (1986). How do attitudes guide behavior? In R. M. Sorrentino & E. T. Higgins (Eds.), *The handbook of motivation and cognition: Foundations of social behavior* (pp. 204–243). New York: Guilford Press.

Fazio, R. H. (1987). Self-perception theory: A current perspective. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario Symposium* (Vol. 5, pp. 129–150). Hillsdale, NJ: Erlbaum.

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). San Diego, CA: Academic Press.

Fazio, R. H. (1995). Attitudes as object–evaluation associations: Determinants, consequences, and correlates of attitude accessibility. In R. Petty & J. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 247–282). Hillsdale, NJ: 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.

Fazio, R. H., Sanbonmatsu, D. M., Powell, M. C., & Kardes, F. R. (1986). On the automatic activation of attitudes. *Journal of Personality and Social Psychology, 50,* 229–238.

Feldman, J. M., & Lynch, J. G., Jr. (1988). Self-generated validity and other effects of measurement on belief, attitude, intention, and behavior. *Journal of Applied Psychology, 73,* 421–435.

Festinger, L. (1957). *A theory of cognitive dissonance.* Stanford, CA: Stanford University Press.

Fishbein, M., & Ajzen, I. (1975). *Beliefs, attitude, intention, and behavior: An introduction to theory and research.* Reading, MA: Addison-Wesley.

Fiske, S. T. (1998). Stereotyping, prejudice, and discrimination. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 2, pp. 357–411). New York: McGraw-Hill.

Forgas, J. P. (1992). Affect in social judgments and decisions: A multiprocess model. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 227–275). San Diego, CA: Academic Press.

Freud, S. (1958). Psychoanalytic notes upon an autobiographical account of a case of paranoia (dementia paranoides) (A. Strachey & J. Strachey, Trans.). In J. Strachey (Ed.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 12, pp. 9–82). London: Hogarth Press. (Original work published 1911)

Furman, W., & Flanagan, A. S. (1997). The influence of earlier relationships on marriage: An attachment perspective. In W. K. Halford & H. J. Markman (Eds.), *Clinical handbook of marriage and couples interventions* (pp. 179–202). New York: Wiley.

Gaertner, S. L., & Dovidio, J. F. (1986). The aversive form of racism. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 61–89). Orlando, FL: Academic Press.

Gaertner, S. L., & McLaughlin, J. P. (1983). Racial stereotypes: Associations and ascriptions of positive and negative characteristics. *Social Psychology Quarterly, 46,* 23–30.

George, C., Kaplan, N., & Main, M. (1985). *An adult attachment interview.* Unpublished manuscript, University of California, Berkeley.

Giner-Sorolla, R. (1999). Affect in attitude: Immediate and deliberative perspectives. In S. Chaiken & Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 441–461). New York: Guilford Press.

Goethals, G. R., & Reckman, R. F. (1973). The perception of consistency in attitudes. *Journal of Experimental Social Psychology, 9,* 491–501.

Golding, J. M., Fowler, S. B., Long, D. L., & Latta, H. (1990). Instructions to disregard potentially useful information: The effects of pragmatics on evaluative judgments and recall. *Journal of Memory and Language, 29,* 212–227.

Gotz-Marchand, B., Gotz, J., & Irle, M. (1974). Preference of dissonance reduction modes as a function of their order, familiarity, and reversibility. *European Journal of Social Psychology, 4,* 201–228.

Graesser, A. C., Singer, M., & Trabasso, T. (1994). Constructing inferences during narrative text comprehension. *Psychological Review, 101,* 371–395.

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., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology, 74,* 1464–1480.

Gregg, A. P. (2000). *Implicit inertia versus explicit elasticity in attitude change.* Unpublished doctoral dissertation, Yale University.

Grinker, J. (1969). Cognitive control of classical eyelid conditioning. In P. G. Zimbardo (Ed.), *The cognitive control of motivation* (pp. 126–135). Glenview, IL: Scott, Foresman.

Guthrie, E. R. (1952). *The psychology of learning* (Rev. ed.). New York: Harper.

Hastie, R., & Park, B. (1986). The relationship between memory and judgment depends on whether the judgment task is memory-based or on-line. *Psychological Review, 93,* 258–268.

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52,* 511–524.

Hermans, D., De Houwer, J., & Eelen, P. (1994). The affective priming effect: Automatic evaluation of evaluative information in memory. *Cognition and Emotion, 8,* 515–533.

Hetts, J., Kuwano, M., & Pelham, B. (in press). Two roads to positive regard: Implicit and explicit self-evaluation and culture. *Journal of Experimental Social Psychology.*

Higgins, E. T., & King, G. (1981). Accessibility of social constructs: Information-processing consequences of individual and contextual variability. In N. Cantor & J. F. Kihlstrom (Eds.), *Personality and social interaction* (pp. 69–121). Hillsdale, NJ: Erlbaum.

Higgins, E. T., Rhodewalt, F., & Zanna, M. P. (1979). Dissonance motivation: Its nature, persistence, and reinstatement. *Journal of Experimental Social Psychology, 15,* 16–34.

Hochschild, A. R. (1979). Emotion work, feeling rules, and social structure. *American Journal of Sociology, 85,* 551–575.

Holmes, D. S. (1990). The evidence for repression: An examination of sixty years of research. In J. L. Singer (Ed.), *Repression and dissociation* (pp. 85–102). Chicago: University of Chicago Press.

Houston, D. A., & Fazio, R. H. (1989). Biased processing as a function of attitude accessibility: Making objective judgments subjectively. *Social Cognition, 7,* 51–66.

Hovland, C. I. (1951). Human learning and retention. In S. S. Stevens (Ed.), *Handbook of experimental psychology* (pp. 613–689). New York: Wiley.

Hovland, C. I. (1959). Reconciling conflicting results derived from exper-

imental and survey studies of attitude change. *American Psychologist, 14,* 8–17.

Judd, C. M., & Lusk, C. M. (1984). Knowledge structures and evaluative judgments: Effects of structural variables on judgmental extremity. *Journal of Personality and Social Psychology, 46,* 1193–1207.

Judd, C. M., & Park, B. (1993). Definition and assessment of accuracy in social stereotypes. *Psychological Review, 100,* 109–128.

Kaplan, K. J. (1972). On the ambivalence–indifference problem in attitude theory and measurement: A suggested modification of the semantic differential technique. *Psychological Bulletin, 77,* 361–372.

Katz, D. (1960). The functional approach to the study of attitudes. *Public Opinion Quarterly, 24,* 163–204.

Katz, I., Wackenhut, J., & Hass, R. G. (1986). Racial ambivalence, value duality, and behavior. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 35–59). Orlando, FL: Academic Press.

Kierstead, M. D. (1981, April 6). The Shetland pony. *The New Yorker,* pp. 40–48.

Kihlstrom, J. F. (1987, September 18). The cognitive unconscious. *Science, 237,* 1445–1452.

Kihlstrom, J. F., & Hoyt, I. P. (1990). Repression, dissociation, and hypnosis. In J. J. Singer (Ed.), *Repression and dissociation* (pp. 181–208). Chicago: University of Chicago Press.

Lange, N. (1888). Beiträge zur Theorie der sinnlichen Aufmerksamkeit und der aktiven Apperception [Contribution to a theory of sensory attention and active apperception]. *Philosophical Studies, 4,* 390–422.

LaPiere, R. T. (1934). Attitudes vs. actions. *Social Forces, 13,* 230–237.

Lecky, W. E. H. (1891). *History of the rise and influence of the spirit of rationalism in Europe* (Vol. 2). New York: Appleton.

LeDoux, J. E. (1994). Emotional processing, but not emotions, can occur unconsciously. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 291–292). New York: Oxford University Press.

LeDoux, J. (1996). *The emotional brain: The mysterious underpinnings of emotional life.* New York: Simon & Schuster.

Lepore, L., & Brown, R. (1997). Category and stereotype activation: Is prejudice inevitable? *Journal of Personality and Social Psychology, 72,* 275–287.

Lewin, K. (1935). *The dynamic theory of personality.* New York: McGraw-Hill.

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology, 140,* 1–55.

Lindsay, D. S., & Johnson, M. K. (1989). The eyewitness suggestibility effect and memory for source. *Memory & Cognition, 17,* 349–358.

Loftus, E. F. (1991). Made in memory: Distortions in recollection after misleading information. In G. H. Bower (Ed.), *The psychology of learning and motivation* (Vol. 27, pp. 187–215). New York: Academic Press.

MacDonald, T. K., & Zanna, M. P. (1998). Cross-dimension ambivalence toward social groups: Can ambivalence affect intentions to hire feminists? *Personality and Social Psychology Bulletin, 24,* 427–441.

Mackie, D. M. (1987). Systematic and nonsystematic processing of majority and minority persuasive communications. *Journal of Personality and Social Psychology, 53,* 41–52.

Mackie, D. M., & Asuncion, A. G. (1990). On-line and memory-based modification of attitudes: Determinants of message recall–attitude change correspondence. *Journal of Personality and Social Psychology, 59,* 5–16.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development, 50*(1–2, Serial No. 209).

Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology, 38,* 299–337.

McClelland, D. C. (1985). How motives, skills, and values determine what people do. *American Psychologist, 40,* 812–825.

McClelland, D. C., Koestner, R., & Weinberger, J. (1989). How do self-attributed and implicit motives differ? *Psychological Review, 96,* 690–702.

McConahay, J. B. (1986). Modern racism, ambivalence, and the Modern Racism Scale. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 91–125). Orlando, FL: Academic Press.

McCrae, C. N., Bodenhausen, G. V., Milne, A. B., & Jetten, J. (1994). Out of mind but back in sight: Stereotypes on the rebound. *Journal of Personality and Social Psychology, 67,* 808–817.

McGregor, I., Newby-Clark, I. R., & Zanna, M. P. (1999). "Remembering" dissonance: Simultaneous accessibility of inconsistent cognitive elements moderates epistemic discomfort. In E. Harmon-Jones & J. Mills (Eds.), *Cognitive dissonance: Progress on a pivotal theory in social psychology* (pp. 325–353). Washington, DC: American Psychological Association.

McGuire, W. J., & Padawer-Singer, A. (1976). Trait salience in the spontaneous self-concept. *Journal of Personality and Social Psychology, 33,* 743–754.

Millar, M. G., & Tesser, A. (1986a). Effects of affective and cognitive focus on the attitude–behavior relationship. *Journal of Personality and Social Psychology, 51,* 270–276.

Millar, M. G., & Tesser, A. (1986b). Thought-induced attitude change: The effects of schema structure and commitment. *Journal of Personality and Social Psychology, 51,* 259–275.

Miller, N. E. (1961). Some recent studies on conflict behavior and drugs. *American Psychologist, 16,* 12–24.

Mitchell, J., Banaji, M. R., & Nosek, B. A. (1998, May). *A rose by any other name? Dissociated attitudes toward social group members.* Poster session presented at the annual meeting of the American Psychological Society, Washington, DC.

Monteith, M. J. (1993). Self-regulation of prejudiced responses: Implications for progress in prejudice-reduction efforts. *Journal of Personality and Social Psychology, 65,* 469–485.

Murray, H. A. (1938). *Explorations in personality.* New York: Oxford University Press.

Murray, H. A. (1958). Drive, time, strategy, measurement, and our way of life. In G. Lindzey (Ed.), *Assessment of human motives* (pp. 183–196). New York: Holt, Rinehart & Winston.

Newman, L. S., & Uleman, J. S. (1989). Spontaneous trait inference. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 155–188). New York: Guilford Press.

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84,* 231–259.

Olson, J. M. (1990). Self-inference processes in emotion. In J. M. Olson & M. P. Zanna (Eds.), *Self-inference processes: The Ontario Symposium* (Vol. 6, pp. 17–42). Hillsdale, NJ: Erlbaum.

Ostrom, T. M. (1969). The relationship between affective, behavioral, and cognitive components of attitude. *Journal of Experimental Social Psychology, 5,* 12–30.

Pelham, B. W., & Hetts, J. J. (1999). *Implicit self-evaluation.* Unpublished manuscript, University of California, Los Angeles.

Peterson, C., & Ulrey, L. M. (1994). Can explanatory style be scored from TAT protocols? *Personality and Social Psychology Bulletin, 20,* 102–106.

Petty, R. E., Baker, S. M., & Gleicher, F. (1991). Attitudes and drug abuse prevention: Implications of the elaboration likelihood model of persuasion. In L. Donohew, H. E. Sypher, & W. J. Bukoski (Eds.), *Persuasive communication and drug abuse prevention* (pp. 71–90). Mahwah, NJ: Erlbaum.

Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change.* New York: Springer-Verlag.

Petty, R. E., & Jarvis, B. G. (1998, October). *What happens to the "old"*

attitude when attitudes change? Paper presented at the meetings of the Society for Experimental Social Psychology, Lexington, KY.

Petty, R. E., & Krosnick, J. (Eds.). (1995). *Attitude strength: Antecedents and consequences.* Hillsdale, NJ: Erlbaum.

Petty, R. E., Priester, J. R., & Wegener, D. T. (1994). Cognitive processes in attitude change. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (Vol. 2, 2nd ed., pp. 69–142). Hillsdale, NJ: Erlbaum.

Petty, R. E., Schumann, D. W., Richman, S. A., & Strathman, A. J. (1993). Positive mood and persuasion: Different roles for affect under high- and low-elaboration conditions. *Journal of Personality and Social Psychology, 64,* 5–20.

Plant, E. A., & Devine, P. G. (1998). Internal and external motivation to respond without prejudice. *Journal of Personality and Social Psychology, 75,* 811–832.

Priester, J. R., & Petty, R. E. (1996). The gradual threshold model of ambivalence: Relating the positive and negative bases of attitudes to subjective ambivalence. *Journal of Personality and Social Psychology, 71,* 431–449.

Proust, M. (1934). *Remembrance of things past* (C. K. Scott-Moncrieff, Trans.). New York: Random House.

Rosenberg, M. J. (1960). An analysis of affective–cognitive consistency. In M. J. Rosenberg, C. I. Hovland, W. J. McGuire, R. P. Abelson, & J. W. Brehm (Eds.), *Attitude organization and change: An analysis of consistency among attitude components* (pp. 15–64). New Haven, CT: Yale University Press.

Rosenberg, M. J. (1968). Hedonism, inauthenticity, and other goals toward expansion of a consistency theory. In R. P. Abelson, E. Aronson, W. J. McGuire, T. M. Newcomb, M. J. Rosenberg, & P. H. Tannenbaum (Eds.), *Theories of consistency: A sourcebook* (pp. 73–111). Chicago: Rand McNally.

Ross, L., Lepper, M. R., & Hubbard, M. (1975). Perseverance in self-perception and social perception: Biased attributional processes in the debriefing paradigm. *Journal of Personality and Social Psychology, 32,* 880–892.

Ross, M. (1989). Relation of implicit theories to the construction of personal histories. *Psychological Review, 96,* 341–357.

Rothbard, J. C., & Shaver, P. R. (1994). Continuity of attachment across the life span. In M. B. Sperling & W. H. Berman (Eds.), *Attachment in adults: Clinical and developmental perspectives* (pp. 31–71). New York: Guilford Press.

Schlachet, P. (1969). The motivation to succeed and the memory for failure. In P. G. Zimbardo (Ed.), *The cognitive control of motivation* (pp. 161–173). Glenview, IL: Scott, Foresman.

Schooler, J. W., & Engstler-Schooler, T. Y. (1990). Verbal overshadowing of visual memories: Some things are better left unsaid. *Cognitive Psychology, 22,* 36–71.

Schooler, J. W., Fiore, S. M., & Brandimonte, M. A. (1997). At a loss *from* words: Verbal overshadowing of perceptual memories. *The Psychology of Learning and Motivation, 37,* 291–340.

Schooler, T. Y. (1990). *Do discrepant attitude components become consistent over time?* Unpublished master's thesis, University of Pittsburgh.

Schuman, H., & Presser, S. (1981). *Questions and answers in attitude surveys.* New York: Academic Press.

Schwarz, N., & Bless, H. (1992). Constructing reality and its alternatives: An inclusion/exclusion model of assimilation and contrast effects in social judgment. In A. Tesser & L. Martin (Eds.), *The construction of social judgment* (pp. 217–245). Hillsdale, NJ: Erlbaum.

Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgment of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology, 45,* 513–523.

Scott, W. A. (1969). Structure of natural cognitions. *Journal of Personality and Social Psychology, 12,* 261–278.

Sherif, M., & Cantril, H. (1947). *The psychology of ego involvements: Social attitudes and identifications.* New York: Wiley.

Simon, L., Greenberg, J., & Brehm, J. (1995). Trivialization: The forgotten mode of dissonance reduction. *Journal of Personality and Social Psychology, 68,* 247–260.

Smith, E. R. (1996). What do connectionism and social psychology offer each other? *Journal of Personality and Social Psychology, 70,* 893–912.

Smith, E. R., Fazio, R. H., & Cejka, M. A. (1996). Accessible attitudes influence categorization of multiply categorizable objects. *Journal of Personality and Social Psychology, 71,* 888–898.

Smith, M. B., Bruner, J., & White, R. W. (1956). *Opinions and personality.* New York: Wiley.

Spalding, L., & Hardin, C. D. (1998, May). *Fidgets, jitters, and unconscious unease: Behavioral consequences of implicit self-esteem.* Paper presented at the annual meeting of the American Psychological Society, Washington, DC.

Spangler, W. D. (1992). Validity of questionnaire and TAT measures of need for achievement: Two meta-analyses. *Psychological Bulletin, 112,* 140–154.

Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 261–302). New York: Academic Press.

Stone, J., Wiegand, A. W., Cooper, J., & Aronson, E. (1997). When exemplification fails: Hypocrisy and the motive for self-integrity. *Journal of Personality and Social Psychology, 72,* 54–65.

Strack, F. (1992). The different routes to social judgments: Experiential versus informational strategies. In L. L. Martin & A. Tesser (Eds.), *The construction of social judgments* (pp. 249–276). Hillsdale, NJ: Erlbaum.

Tesser, A. (1978). Self-generated attitude change. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 11, pp. 289–338). New York: Academic Press.

Tesser, A. (1993). The importance of heritability in psychological research: The case of attitudes. *Psychological Review, 100,* 129–142.

Tesser, A., & Martin, L. (1996). The psychology of evaluation. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 400–432). New York: Guilford Press.

Thompson, M. P., Zanna, M. P., & Griffin, D. W. (1995). Let's not be indifferent about (attitudinal) ambivalence. In R. Petty & J. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 361–386). Hillsdale, NJ: Erlbaum.

Thurstone, L. L. (1928). Attitudes can be measured. *American Journal of Sociology, 33,* 529–544.

Tidwell, M. O., Reis, H. T., & Shaver, P. R. (1996). Attachment, attractiveness, and social interaction: A diary study. *Journal of Personality and Social Psychology, 71,* 729–745.

Tolman, E. C. (1932). *Purposive behavior in animals and men.* New York: Century.

Tourangeau, R., & Rasinski, K. A. (1988). Cognitive processes underlying context effects in attitude measurement. *Psychological Bulletin, 103,* 299–314.

Vallacher, R. R., Nowak, A., & Kaufman, J. (1994). Intrinsic dynamics of social judgment. *Journal of Personality and Social Psychology, 67,* 20–34.

Wegner, D. M. (1989). *White bears and other unwanted thoughts.* New York: Viking Press.

Wegner, D. M. (1994). Ironic processes of mental control. *Psychological Review, 101,* 34–52.

Westen, D. (1998). The scientific legacy of Sigmund Freud: Toward a psychodynamically informed psychological science. *Psychological Bulletin, 124,* 333–371.

Wicker, A. W. (1969). Attitudes versus actions: The relationship between verbal and overt behavioral responses to attitude objects. *Journal of Social Issues, 25,* 41–78.

Wilson, T. D. (1985). Strangers to ourselves: The origins and accuracy of beliefs about one's own mental states. In J. H. Harvey and G. Weary

(Eds.), *Attribution in contemporary psychology* (pp. 9–36). New York: Academic Press.

Wilson, T. D., & Brekke, N. C. (1994). Mental contamination and mental correction: Unwanted influences on judgments and evaluations. *Psychological Bulletin, 116,* 117–142.

Wilson, T. D., Damiani, L. M., & Shelton, N. (1998). [Dual attitudes of Whites toward African Americans]. Unpublished raw data.

Wilson, T. D., & Dunn, D. S. (1986). Effects of introspection on attitude–behavior consistency: Analyzing reasons versus focusing on feelings. *Journal of Experimental Social Psychology, 22,* 249–263.

Wilson, T. D., Dunn, D. S., Bybee, J. A., Hyman, D. B., & Rotondo, J. A. (1984). Effects of analyzing reasons on attitude–behavior consistency. *Journal of Personality and Social Psychology, 47,* 5–16.

Wilson, T. D., Dunn, D. S., Kraft, D., & Lisle, D. J. (1989). Introspection, attitude change, and attitude–behavior consistency: The disruptive effects of explaining why we feel the way we do. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22, pp. 287–343). Orlando, FL: Academic Press.

Wilson, T. D., & Hodges, S. D. (1992). Attitudes as temporary constructions. In A. Tesser & L. Martin (Eds.), *The construction of social judgment* (pp. 37–65). Hillsdale, NJ: Erlbaum.

Wilson, T. D., Hodges, S. D., & LaFleur, S. J. (1995). Effects of introspecting about reasons: Inferring attitudes from accessible thoughts. *Journal of Personality and Social Psychology, 69,* 16–28.

Wilson, T. D., Houston, C. E., & Meyers, J. M. (1998). Choose your poison: Lay beliefs and unintended attitude change. *Social Cognition, 16,* 114–132.

Wilson, T. D., & Kraft, D. (1993). Why do I love thee? Effects of repeated introspections on attitudes toward the relationship. *Personality and Social Psychology Bulletin, 19,* 409–418.

Wilson, T. D., Kraft, D., & Dunn, D. S. (1989). The disruptive effects of explaining attitudes: The moderating effect of knowledge about the attitude object. *Journal of Experimental Social Psychology, 25,* 379–400.

Wilson, T. D., & Lindsey, S. (1998). [Effects of time pressure and analyzing reasons on attitudes toward dating relationships]. Unpublished raw data.

Wilson, T. D., Lindsey, S., & Anderson, E. (1998). [Affective perseverance: Dual attitudes after the discrediting of an initial evaluation]. Unpublished raw data.

Wilson, T. D., Lisle, D., Schooler, J., Hodges, S. D., Klaaren, K. J., & LaFleur, S. J. (1993). Introspecting about reasons can reduce post-choice satisfaction. *Personality and Social Psychology Bulletin, 19,* 331–339.

Winter, D. G., John, O. P., Stewart, A. J., Klohnen, E. C., & Duncan, L. E. (1998). Traits and motives: Toward an integration of two traditions in personality research. *Psychological Review, 105,* 230–250.

Wittenbrink, B., Judd, C. M., & Park B. (1997). Evidence for racial prejudice at the implicit level and its relationship with questionnaire measures. *Journal of Personality and Social Psychology, 72,* 262–274.

Wittenbrink, B., Judd, C. M., & Park B. (1998). *Spontaneous prejudice in context: Evaluative vs. conceptual judgments in automatic attitude activation.* Unpublished manuscript, University of Chicago.

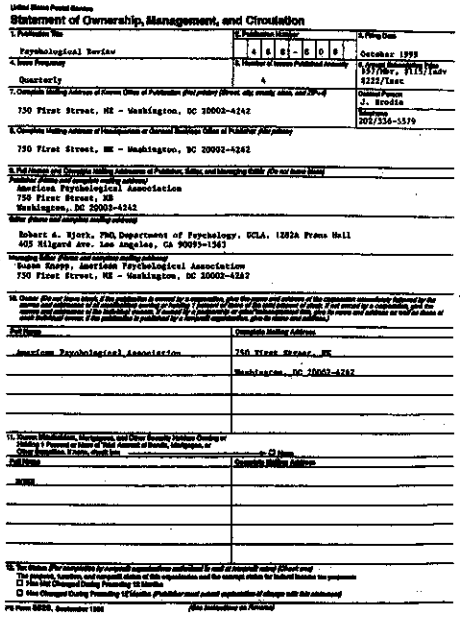
Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist, 35,* 151–175.

Zajonc, R. B. (1994). Evidence for nonconscious emotions. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 293–297). New York: Oxford University Press.

Zanna, M. P., & Cooper, J. (1976). Dissonance and the attribution process. In J. H. Harvey, W. J. Ickes, & R. F. Kidd (Eds.), *New directions in attribution research* (Vol. 1, pp. 199–217). Hillsdale, NJ: Erlbaum.

Zanna, M. P., & Rempel, J. K. (1988). Attitudes: A new look at an old concept. In D. Bar-Tal & A. W. Kruglanski (Eds.), *The social psychology of knowledge* (pp. 315–334). Cambridge, England: Cambridge University Press.

Received August 3, 1998
Revision received March 10, 1999
Accepted April 8, 1999 ■



Statement of Ownership, Management, and Circulation

1. Publication Title	2. Publication Number	3. Filing Date
Psychological Review	0 0 5 - 0 0 0	October 1998
4. Issue Frequency	5. Number of Issues Published Annually	6. Annual Subscription Price
Quarterly	4	$57/Nat., $113/Fgn $222/Inst

7. Complete Mailing Address of Known Office of Publication (Not printer) (Street, city, county, state, and ZIP+4)
750 First Street, NE - Washington, DC 20002-4242
Contact Person: J. Erdin
Telephone: 202/336-5579

8. Complete Mailing Address of Headquarters or General Business Office of Publisher (Not printer)
750 First Street, NE - Washington, DC 20002-4242

9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not leave blank)
Publisher (Name and complete mailing address)
American Psychological Association
750 First Street, NE
Washington, DC 20002-4242
Editor (Name and complete mailing address)
Robert S. Wyer, PhD, Department of Psychology, UCLA, 1282A Franz Hall
405 Hilgard Ave. Los Angeles, CA 90095-1563
Managing Editor (Name and complete mailing address)
Susan Knapp, American Psychological Association
750 First Street, NE - Washington, DC 20002-4242

10. Owner (If owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock. If not owned by a corporation, give the names and addresses of the individual owners. If owned by a partnership or other unincorporated firm, give its name and address as well as those of each individual owner. If the publication is published by a nonprofit organization, give its name and address.)

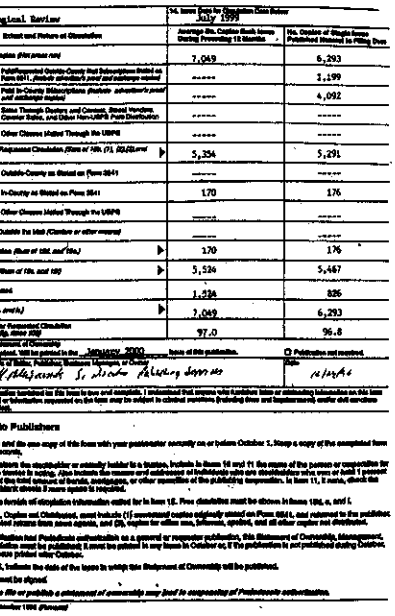
Full Name	Complete Mailing Address
American Psychological Association	750 First Street, NE Washington, DC 20002-4242

11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities. If None, Check Box → ☐ None

Full Name	Complete Mailing Address
NONE	

12. Tax Status (For completion by nonprofit organizations authorized to mail at nonprofit rates) (Check one)
The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes:
☐ Has Not Changed During Preceding 12 Months
☐ Has Changed During Preceding 12 Months (Publisher must submit explanation of change with this statement)

PS Form 3526, September 1998 (See Instructions on Reverse)



13. Publication Title: Psychological Review	14. Issue Date for Circulation Data Below: July 1999	
15. Extent and Nature of Circulation	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total Number of Copies (Net press run)	7,049	6,293
b. Paid and/or Requested Circulation (1) Paid/Requested Outside-County Mail Subscriptions Stated on Form 3541. (Include advertiser's proof and exchange copies)	-----	1,199
(2) Paid In-County Subscriptions (Include advertiser's proof and exchange copies)	-----	4,092
(3) Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Outside-USPS® Paid Distribution	-----	-----
(4) Other Classes Mailed Through the USPS	-----	-----
c. Total Paid and/or Requested Circulation (Sum of 15b. (1), (2),(3),and (4))	5,354	5,291
d. Free Distribution by Mail (Samples, complimentary, and other free) (1) Outside-County as Stated on Form 3541	-----	-----
(2) In-County as Stated on Form 3541	170	176
(3) Other Classes Mailed Through the USPS	-----	-----
e. Free Distribution Outside the Mail (Carriers or other means)	-----	-----
f. Total Free Distribution (Sum of 15d. and 15e.)	170	176
g. Total Distribution (Sum of 15c. and 15f)	5,524	5,467
h. Copies not Distributed	1,524	826
i. Total (Sum of 15g. and h.)	7,049	6,293
j. Percent Paid and/or Requested Circulation (15c. divided by 15g. times 100)	97.0	96.8

16. Publication of Statement of Ownership
☐ Publication required. Will be printed in the January 2000 issue of this publication. ☐ Publication not required.

17. Signature and Title of Editor, Publisher, Business Manager, or Owner: Date: 10/1/98

I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).

Instructions to Publishers

1. Complete and file one copy of this form with your postmaster annually on or before October 1. Keep a copy of the completed form for your records.
2. In cases where the stockholder or security holder is a trustee, include in items 10 and 11 the name of the person or corporation for whom the trustee is acting. Also include the names and addresses of individuals who are stockholders who own or hold 1 percent or more of the total amount of bonds, mortgages, or other securities of the publishing corporation. In item 11, if none, check the box. Use blank sheets if more space is required.
3. Be sure to furnish all circulation information called for in item 15. Free circulation must be shown in items 15d, e, and f.
4. Item 15h., Copies not Distributed, must include (1) newsstand copies originally stated on Form 3541, and returned to the publisher, (2) estimated returns from news agents, and (3), copies for office use, leftovers, spoiled, and all other copies not distributed.
5. If the publication had Periodicals authorization as a general or requester publication, this Statement of Ownership, Management, and Circulation must be published; it must be printed in any issue in October or, if the publication is not published during October, the first issue printed after October.
6. In item 16, indicate the date of the issue in which this Statement of Ownership will be published.
7. Item 17 must be signed.

Failure to file or publish a statement of ownership may lead to suspension of Periodicals authorization.

PS Form 3526, September 1998 (Reverse)