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# “Remembering” Dissonance: Simultaneous Accessibility of Inconsistent Cognitive Elements Moderates Epistemic Discomfort

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The evolution of cognitive dissonance theory has been shaped by its research methods. Indirect, behaviorally based methods provided compelling demonstration of the theory's bold predictions but involved elaborate social interactions as well as the presumed epistemic dynamics. As such, they opened the door for revisions that moved the theory away from Festinger's (1957) core proposition that cognitive inconsistency, in itself, is aversive and motivates interesting cognitive and behavioral reactions. We submit that the *ambivalence* construct (Jamieson, 1993) is consistent with Festinger's original conception of dissonance and that ambivalence research, in conjunction with Bassili's (1994) notion of simultaneous accessibility, provides a fresh perspective that organizes and extends dissonance theory. Ambivalence research reasserts that cognitive inconsistency, in itself, is psychologically uncom-

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fortable. We review older dissonance research and present our recent ambivalence research, which indicates that epistemic discomfort is moderated by the *simultaneous accessibility* of inconsistent cognitions. We propose that simultaneous accessibility can account for revisions to dissonance theory and some newer applications. We conclude by presenting recent research demonstrating a compensatory epistemic defense against accessible identity-related dissonance. When identity-related inconsistencies are made accessible, individuals compensate by hardening their attitudes about more circumscribed topics. Just as the discovery of this new dissonance defense derived from a new paradigm that incorporates the simultaneous accessibility concept, we propose that other burgeoning areas of social psychology may be informed and integrated by the concept. This chapter expands the purview of cognitive dissonance theory by returning to Festinger's core premise with a perspective that highlights the role of simultaneous accessibility in determining the effects of cognitive inconsistency.

## COGNITIVE DISSONANCE THEORY AND REVISIONS

The arrival of cognitive dissonance theory excited social psychologists for at least two reasons. First, it challenged the relatively bland version of reinforcement theory that was popular at the time (Aronson, 1992, p. 303). Second, it lent scientific support to the notion of motivated cognition, which had been percolating in other disciplines for many years. In philosophy, Schopenhauer (1818/1883) claimed that desire "is the strong blind man who carries on his shoulders the lame man (reason) who can see" (p. 421). In psychoanalytic psychology, rationalization was presented as a prevalent defense mechanism. The outcomes of the first high-impact dissonance studies lent vivid empirical support to the hypothesis that people sometimes act first and justify later.

Early high-impact studies cleverly demonstrated participants' tendency to justify their counterattitudinal behaviors, but in most experiments, inconsistent cognitions were assumed to follow from behaviors

that implied an inconsistent position, and psychological discomfort was inferred from attitude change. Festinger's core proposition, that inconsistent cognitions cause psychological discomfort, was not directly tested. Reliance on behavioral induction and indirect assessment of dissonance opened the door for several challenges to the epistemic basis of the theory.

The first major challenge came from Bem's (1967) self-perception theory. Bem argued that attributional processes could explain attitude change in conventional dissonance paradigms and that no aversive motivational state need exist. According to Bem, participants noticed themselves behaving in a particular way, and because no external reason for their behavior was apparent, they inferred that their behavior must have arisen from internal factors (i.e., attitudes consistent with the behavior). The cognitive dissonance interpretation was eventually rescued from the self-perception challenge by the finding that if participants have an opportunity to misattribute dissonance arousal to another source, such as a pill (Zanna & Cooper, 1974) or an unpleasant environment (Fazio, Zanna, & Cooper, 1977), attitude change will not occur. Eventually both theories found their appropriate domain of applicability. Dissonance processes are operative when counterattitudinal behaviors are outside participants' latitude of acceptance; self-perception processes are operative when counterattitudinal behaviors are within participants' latitude of acceptance (Fazio et al., 1977).

Self-perception theory challenged dissonance theory at the back end of the counterattitudinal behavior paradigm, that is, it questioned Festinger's contention that psychological discomfort mediates the attitude change following counterattitudinal behavior. A second set of challenges to the original conception of cognitive dissonance theory came at the front end of the paradigm. Most notably, self-consistency (E. Aronson, 1968; see also chap. 5, this volume), self-affirmation (Steele, 1988; see also chap. 6, this volume), and the new look (Cooper & Fazio, 1984; see also chap. 7, this volume) perspectives questioned whether inconsistent cognitions were sufficient or even necessary to produce discomfort and attitude change. E. Aronson proposed that inconsistent cognitions are only uncomfortable when they implicate the self-concept.

For example, most people believe that they are competent and good. Thus, when they are tricked by a dissonance researcher into doing something stupid or bad, they experience discomfort. According to E. Aronson, discomfort arises, not because, for example, a counterattitudinal essay is inconsistent with a prior attitude, but because the negative behavior of writing in support of the wrong cause is inconsistent with a positive self-concept. Two subsequent revisions took E. Aronson's focus on stupid or bad actions even further and contended that inconsistency is not even a necessary condition for dissonance to be experienced. Cooper and Fazio (1984) proposed a new look for dissonance theory, arguing that psychological discomfort in dissonance experiments occurs because people feel personally responsible for the production of aversive consequences. Similarly, Steele's (1988) self-affirmation revision posited that it is not inconsistency but threat to global self-integrity that causes the discomfort in dissonance experiments. According to new look and self-affirmation perspectives, people rationalize behaviors that imply their incompetence or immorality.

As evidence that cognitive dissonance theory has drifted from its epistemic roots, introductory social psychology texts now typically allocate more space to the revisions than to the original theory. Indeed, textbooks now routinely echo Abelson (1983) and conclude that dissonance reduction is primarily a social strategy for saving face following experimentally engineered embarrassment. From this perspective, the term *cognitive dissonance* is a misnomer. Discomfort in dissonance paradigms arises from social, not epistemic, factors.

## AMBIVALENCE RESEARCH: RETURNING TO THE EPISTEMIC ROOTS OF DISSONANCE THEORY

Conventional dissonance paradigms made a huge contribution to the field's understanding of social behavior and motivated cognition but invited revisions that deemphasized the theory's initial focus on epistemic motivation. Recent research on ambivalence complements findings from conventional paradigms by investigating implications of *native*

inconsistencies (i.e., naturally occurring inconsistencies that are not behaviorally induced by a researcher). A direct technology for assessing inconsistency, developed by Scott (1968) and later by Kaplan (1972), separately measures both the positive and negative aspects of a given attitude (holding aspects of the opposite valence constant) and provides the means for direct assessment of native discrepancies within attitudes. Using this technique, Thompson, Zanna, and Griffin (1995) found that intra-attitudinal discrepancies were associated ( $r = .40$ ) with the experience of ambivalence—or feeling “torn and conflicted,” as measured by Jamieson’s (1993) Simultaneous Ambivalence Scale (SIMAS).<sup>1</sup> Thus, although devoid of the provocative outcomes and high-impact appeal associated with the original dissonance tradition, ambivalence research quietly reaffirmed the epistemic core of Festinger’s proposition that had been deemphasized by the new look and self-affirmation revisions. Inconsistent cognitions are experienced as uncomfortable. Indeed, recent research using a conventional dissonance research method also bolsters Festinger’s original epistemic conception. Harmon-Jones, Brehm, Greenberg, Simon, and Nelson (1996) have found that dissonance (directly measured by skin conductance) is aroused and that attitude change occurs after “freely” chosen counterattitudinal expression, even when participants discard their counterattitudinal statements before anyone else can see them. This contradicts the new look revision’s requirement that negative consequences be present. In another experiment, Elliot and Devine (1994) have found that counterattitudinal expression increases self-reported psycho-

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<sup>1</sup>Two questions refer to experienced conflict between cognitive elements (e.g., “I’m not at all confused about abortion because I have strong thoughts about it and have easily made up my mind in one way”), two to conflict between affective elements (e.g., “I do not find myself feeling torn between the two sides of the issue of abortion; my feelings go in one direction only”), and two to conflict across modalities (e.g., “my head and my heart seem to be in disagreement on the issue of abortion”). One question in each pair refers to the absence of ambivalence and is reverse scored, and the six items are averaged to form a Felt Ambivalence score. We see ambivalence as a measure of targeted dissonance. In dissonance research, discomfort is usually assessed on a global level, that is, “how uncomfortable do you feel right now?” Felt ambivalence as a dependent variable is measured by having participants report on how uncomfortable they feel about a particular issue, thereby focusing participants on a relevant subset of their feelings and away from irrelevant influences.

logical discomfort and that the discomfort is alleviated by attitude change.<sup>2</sup>

How can the reassertion of the original conception of dissonance theory be reconciled with the various revisions? We think that the revisions may have capitalized on factors that influence the simultaneous accessibility (Bassili, 1994) of inconsistent cognitions. If inconsistent cognitions are not accessible at the same time, dissonance discomfort will be minimized. On the other hand, if inconsistent cognitions are simultaneously accessible, dissonance discomfort will be maximized. Indeed, according to Festinger, Riecken, and Schachter (1956), one way to reduce dissonance is to "forget or reduce the importance of those cognitions that are in dissonant relationship" (p. 26).

#### A SIMULTANEOUS-ACCESSIBILITY ACCOUNT OF THE REVISIONS

E. Aronson's (1968) original claim that dissonance will occur only when the dissonant cognitions are self-relevant can easily be understood in terms of accessibility. According to the *self-reference effect*, information related to the self is recalled more easily than non-self-related information (Rogers, Kuiper, & Kirker, 1977). Dissonance may be heightened when self-related cognitions are involved because the two cognitions may be more likely to remain simultaneously accessible and less likely to drift out of awareness.

Cooper and Fazio's (1984) new look revision can similarly be explained in terms of accessibility. The perception that one has just done harm to an audience that does not deserve it is likely a relatively novel and unexpected realization for most participants. The increase in attributional activity (Pyszczynski & Greenberg, 1981; Wong & Weiner, 1981) that accompanies such experientially bizarre behavior may very

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<sup>2</sup>The affective response to dissonance, assessed by Elliot and Devine's (1994) "dissonance thermometer," is different from that measured by typical mood scales. This may be why it has eluded reliable assessment in the past. Dissonance causes feelings of tension, irritation, and discomfort, as opposed to the affective states more typically measured, such as sadness, depression, or anger. See also McGregor and Little (1998) for a distinction between unhappiness and dissonance-related discomfort.

well render the behavior, and the inconsistent cognition the behavior implies, hyperaccessible. In addition, guilt associated with a bad behavior might motivate an attempt to suppress awareness of it, which could cause rebound hyperaccessibility (Wegner, 1994). Note also that in the Harmon-Jones et al. (1996) research in which dissonance ensued without the presence of aversive consequences, the "recall task" cover story may have inadvertently ensured that the original attitude and the counterattitudinal expression remained simultaneously accessible.

The self-affirmation revision of dissonance theory is also amenable to an accessibility interpretation. As mentioned above, "stupid" or "bad" behaviors are more likely to remain accessible because of self-reference and heightened attributional activity. Moreover, Steele and Liu (1983) have demonstrated that affirmation can alleviate dissonance but have not demonstrated that dissonance discomfort arises from threatened self-worth. We propose that affirmation ameliorates dissonance because it offers an attractive distraction from the inconsistent behavior just performed. In keeping with this interpretation, J. Aronson, Blanton, and Cooper (1995) have found that participants prefer to affirm themselves in domains unrelated to the dissonant elements (see also Blanton, Cooper, Skurnik, & Aronson, 1997).

Steele and Liu (1983) have attempted to rule out a distraction account of their results by demonstrating in a counterattitudinal essay paradigm that affirmation still reduces attitude change (and therefore dissonance) even when participants are reminded of their dissonant essay after the affirmation and before the attitude measure. We are not convinced that their reminder was effective, however. The reminder procedure simply required participants to write down three key words from their earlier essay. As we discuss later in the context of some earlier dissonance research and recent research on hypocrisy, individuals seem to have a remarkable capacity for avoiding awareness of inconsistencies unless their noses are quite vigorously rubbed in them. It is unclear whether simply reminding participants of three words from their essays was sufficient to remind them that they had advocated tuition increases of their own free will. Instead, they may have been motivated to continue to forget about the free-choice aspect (cf. Kunda, 1990). A more



convincing rebuttal of the distraction account would require a reminder more difficult for participants to wiggle out of.

### SIMULTANEOUS ACCESSIBILITY AND EARLY DISSONANCE RESEARCH

The importance of accessibility as a moderator of cognitive dissonance was supported by experimental results from the early days of cognitive dissonance research. Several studies demonstrated that dissonance reduction through attitude change depends on whether participants are distracted from or have their “noses rubbed” in the dissonant cognitions—conditions that presumably render the dissonant cognitions less or more accessible. In one of the first accessibility experiments, Brock (1962) found that after being induced to “freely” write an essay about why they would like to become Catholic, non-Catholics’ attitudes became more favorable toward Catholicism if they focused on essay convincingness as opposed to grammatical structure in the interval between the essay writing and attitude assessment. Thus, extra attention to inconsistent elements apparently increased dissonance. In contrast, one of the first distraction experiments (Allen, 1965) found that when participants engaged in an absorbing technical task between a free-choice behavior and the assessment of attitudes, the dissonance-reducing spread of alternatives was eliminated (see also Zanna & Aziza, 1976).

In these early experiments, all avenues of dissonance reduction were closed off except attitude change, and the inconsistent cognitions were extremely salient (unless a distraction was introduced). This state of affairs maximized the likelihood of finding self-justificatory attitude change but obscured investigation of distraction as a natural route of dissonance reduction. According to Rosenberg and Abelson (1960), people follow a principle of least effort when attempting to restore cognitive consistency. Because changing one’s attitude presumably takes some cognitive work, Hardyck and Kardush (1968) proposed that stopping thinking, a form of self-distraction, might be the preferred strategy for coping with dissonance. A research technique was needed that would

incorporate the spontaneous distraction that presumably occurs in real life.

The forbidden-toy paradigm (E. Aronson & Carlsmith, 1963) is unique in that during the "temptation period," in which children are forbidden to play with a well-liked toy, they can easily take their minds off their cognitive dilemma by playing with toys that are not forbidden. Thus, in contrast to other kinds of dissonance procedures in which participants are left to simmer in their counterattitudinal behavior, participants are free to immerse themselves in other engaging activities. This provides a relatively naturalistic setting for the dissonance-reduction strategy that Pallak, Brock, and Kiesler (1967) referred to as throwing oneself into one's work. Carlsmith et al. (1969) augmented the built-in distraction feature of the forbidden-toy paradigm with two manipulations of forced attention. In one experiment, a "janitor" made the forbidden toy salient by walking into the room during the temptation period and incidentally asking the children why they were not playing with it. In the other experiment, the forbidden toy was made salient by a "defective" lamp, which flashed on and off above it. The general procedure and results were as follows.

Each child was brought into a room, shown how to use six attractive toys, and asked to rank the attractiveness of the toys. The experimenter then explained that he had to run an errand and that while he was gone, the child was forbidden to play with the second-ranked toy (which was placed on a different table). In the mild-threat condition, the experimenter said, "If you play with the [second-ranked toy], I will be a little bit annoyed with you." In the severe-threat condition, he said instead, "If you play with the [second-ranked toy], I will be very upset and very angry with you, and I'll have to do something about it." The experimenter then left the room for a 6-min temptation period, during which the forced-attention manipulations occurred for those in the experimental conditions. After the temptation period, the experimenter asked the children to rerank the toys. Thus, both experiments had a simple 2 (mild threat vs. severe threat)  $\times$  2 (forced attention vs. control) format.

In both experiments, two main effects resulted. There was more

derogation of the second-ranked toy in the mild-threat conditions than in the severe-threat conditions, and there was more derogation in the forced-attention conditions than the control conditions. Carlsmith et al. (1969) had expected that attention would increase derogation, but only when dissonance existed in the first place, that is, in the mild-threat condition. Zanna, Lepper, and Abelson (1973) conducted a follow-up experiment, to see whether the expected interaction (forced attention increasing derogation only under mild threat) might result if forced attention was directed simultaneously toward both of the inconsistent cognitions ("I'm not playing with the desirable toy" and "there's no strong reason not to") instead of just the one ("I'm not playing with the desirable toy"). They reasoned that the absence of an interaction in the first two experiments might be due to the fact that although the blinking light or janitor's comment focused the children's attention on the fact that they were not playing with a valued toy, it did not simultaneously remind them of the initial justification for that compliant behavior. For dissonance to occur, both cognitions would have to be simultaneously accessible.

To accomplish forced attention to both cognitions, the janitor experiment was modified in two ways. First, after the threat manipulation, the experimenter placed a sticker marked with an X on the side of the forbidden toy. Children were told that this sticker was being put on the toy as a reminder that the experimenter would either be a little annoyed or very angry and upset (depending on the threat condition) if they played with the forbidden toy. Second, in the high-accessibility condition, when the janitor entered the room in the middle of the temptation period, instead of simply calling attention to the forbidden toy, he said, "What's this toy doing over here on the table?" and "How come this toy has a sticker on it?" These two modifications apparently succeeded in simultaneously focusing children's attention on both of the dissonant cognitions. The expected interaction between potential dissonance (severe vs. mild threat) and simultaneous accessibility (control vs. reminder) resulted, with the greatest amount of dissonance reduction (toy derogation) in the high-reminder-mild-threat condition, suggesting that the experience of dissonance does seem to be moderated by the

simultaneous accessibility of the potentially dissonant cognitions (see Figure 1). These studies underscore how easily inconsistent elements can become inaccessible when distraction opportunities are present.

### SIMULTANEOUS ACCESSIBILITY AND AMBIVALENCE

The early experiments suggest that simultaneous accessibility can play an important role in dissonance processes, but like most dissonance research in the counterattitudinal behavior paradigm, interpretation is vulnerable to the revisionist critiques mentioned above. Further, the early experiments manipulated salience. Although it is likely that salient elements will also be highly accessible, it would still be desirable to measure accessibility directly. Fortunately, the rise of social cognition in the 1980s brought new techniques for manipulating and measuring accessibility of knowledge structures (e.g., Bassili & Fletcher, 1991; Fazio, Sanbonmatsu, Powell, & Kardes, 1986). We have used some of this technology to measure simultaneous accessibility in our research on ambivalence, in a relatively high-tech attempt to corroborate the accessibility results from the early high-impact experiments. In two studies, we have used Bassili's (1996) technique for measuring simultaneous accessibility of attitude components, to see whether psychological discomfort may be influenced not just by the existence of discrepant cognitions but also by the simultaneous accessibility of those cognitions (Newby-Clark, McGregor, & Zanna, 1997). These studies are described below.

Recall that Thompson et al. (1995) found that intra-attitudinal inconsistency was correlated at .40 with Jamieson's (1993) measure of felt ambivalence (i.e., how torn people felt about that attitude issue). This finding is consistent with the core of Festinger's (1957) original thesis, that the existence of nonfitting cognitions leads to psychological discomfort (see Footnote 1). In the following two studies, we were interested in whether simultaneous accessibility of inconsistent cognitions would moderate the relation between the existence of inconsistent cognitions (what we call *potential* ambivalence), as measured by the Kaplan

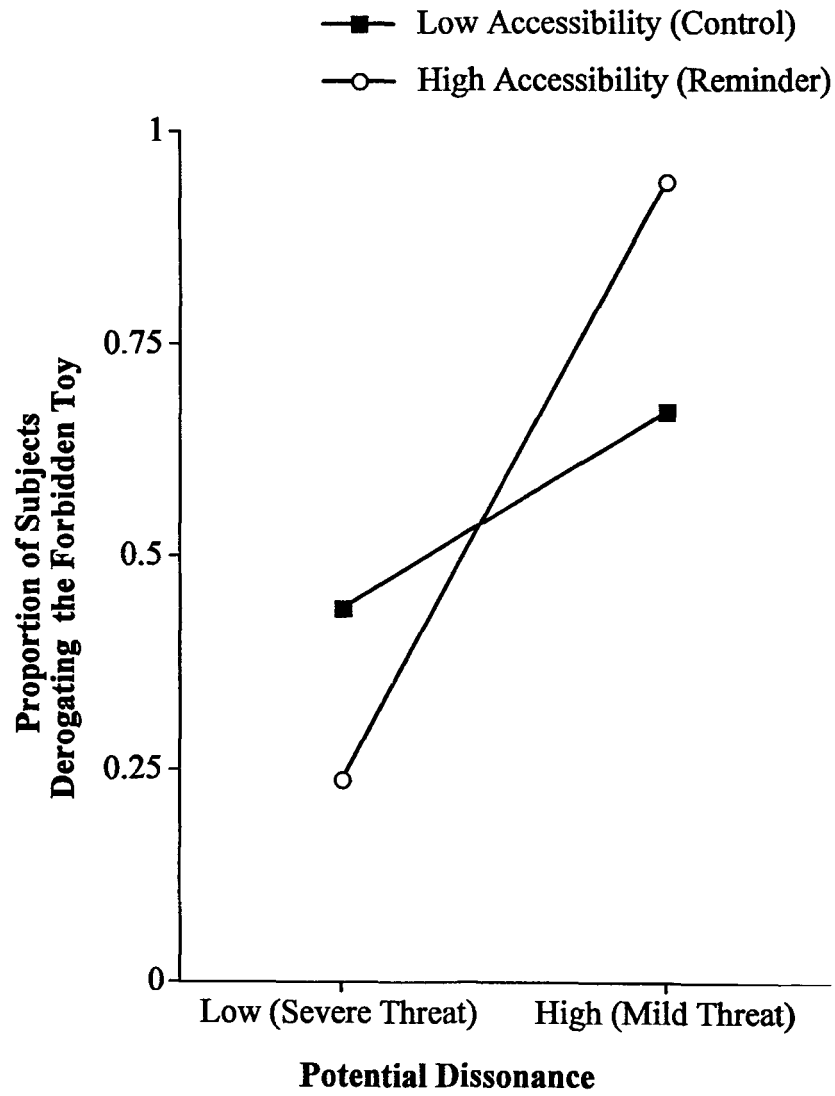


Figure 1

Toy derogation as a function of potential dissonance and simultaneous accessibility in the forbidden-toy paradigm.

(1972) technique,<sup>3</sup> and *felt* ambivalence, as measured by Jamieson's (1993) SIMAS (see Footnote 1). We hypothesized that felt ambivalence would be highest when inconsistent cognitions not only existed, but were available to awareness at the same time. We recorded how long it took participants to answer the Kaplan questions about the positives and negatives of each issue and used these latencies to calculate an index of simultaneous accessibility.<sup>4</sup> Our contention is that potential ambivalence is experienced as felt ambivalence when contradictory cognitions are highly and equally accessible.

In the first study, we telephoned 187 undergraduates and asked them questions about two issues: abortion and capital punishment. As expected, there was a significant positive relation between felt ambivalence and potential ambivalence for both attitude issues. Further, the interaction between potential ambivalence and simultaneous accessibility was significantly associated with felt ambivalence for abortion and marginally associated with felt ambivalence for capital punishment. These results supported our hypothesis that the relation between potential and felt ambivalence would be moderated by the simultaneous

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<sup>3</sup>To assess potential ambivalence, we asked participants to separately rate the positive and negative aspects of each attitude issue (Kaplan, 1972). For each issue, one pair of ratings referred to overall evaluation (i.e., favorable and unfavorable), a second to affect (i.e., positive and negative), and a third to cognitive responses (i.e., beneficial and harmful) toward the issues under consideration. Response options ranged from 1 (*not at all*) to 4 (*extremely*). Responses to each pair of questions were used to calculate a partial potential ambivalence score according to the following procedure. The partial potential ambivalence score was calculated from the two overall evaluation ratings. One rating referred to how unfavorably one viewed the unfavorable aspects of the issue (ignoring the favorable), and the other rating referred to how favorably one viewed the favorable aspects of the issue (ignoring the unfavorable). For each person, a partial potential ambivalence score for overall evaluation was calculated by means of a formula developed by Jamieson (personal communication, June 23, 1991) based on Scott (1968): The lower of the two ratings (in this example either favorability or unfavorability) was squared and divided by the higher rating. Thus, as the positive and negative components became increasingly and equally extreme, potential ambivalence scores increased. We averaged the three partial potential ambivalence scores to form one potential ambivalence score for each issue.

<sup>4</sup>We performed a reciprocal transformation on the latency data, to normalize the positive skew and translate latency scores to speed scores. Speed scores for the three pairs of potential ambivalence questions were then used to calculate simultaneous accessibility, by means of the formula devised by Bassili (1996). Within each attitude issue, for each of the three pairs of speed scores, we squared the slower response time and divided it by the faster. Thus, as the two response speeds within each pair became increasingly and equally extreme, simultaneous-accessibility scores increased. We averaged the three partial simultaneous-accessibility scores within each issue, to create overall indices of simultaneous accessibility for each attitude issue.

accessibility of the relevant cognitions (see the results of the meta-analysis below, for the pattern of the interaction).

In a computerized replication, 69 undergraduates responded to the same questions as in Study 1, but the questions were presented on a computer screen, and response latencies were more automatically recorded. Results were almost identical. Again, potential ambivalence and felt ambivalence were significantly correlated, and again, the interaction between simultaneous accessibility and potential ambivalence was significantly associated with felt ambivalence for abortion and marginally for capital punishment. Meta-analyses across the two studies yielded significant interactions for both attitude issues. For descriptive purposes, we also combined participants from the upper and lower quartiles of simultaneous accessibility from both studies and (a) calculated the correlation between potential and felt ambivalence and (b) regressed felt ambivalence on potential ambivalence.<sup>5</sup> For participants high in simultaneous accessibility, the correlation between potential and felt ambivalence about abortion was .73; for those low in simultaneous accessibility, the correlation was only .32. Finally, as shown in Figure 2, the slope of felt ambivalence (standardized) about abortion regressed on potential ambivalence (low =  $-2$  SD, high =  $2$  SD) was clearly steeper for those in the upper (as compared with the lower) quartile of simultaneous accessibility.

In keeping with Bassili's (1994) conception of ambivalence, the results from these two ambivalence studies demonstrate that felt ambivalence arising from the existence of inconsistent cognitions is moderated by the extent to which both cognitions are readily and equally accessible. Taken in conjunction with distraction-attention findings from conventional dissonance paradigms, our results demonstrate that the simultaneous accessibility of inconsistent cognitive elements is an important factor in determining how much epistemic discomfort will be experienced. We see simultaneous accessibility as an essential and underemphasized aspect of dissonance theory that helps explain revi-

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<sup>5</sup>We computed upper and lower quartiles separately within each sample. All measures were standardized within each sample because of different metrics. For economy, aggregated results are presented only for the abortion issue. Results for the capital punishment issue were comparable.

DISSONANCE AND SIMULTANEOUS ACCESSIBILITY

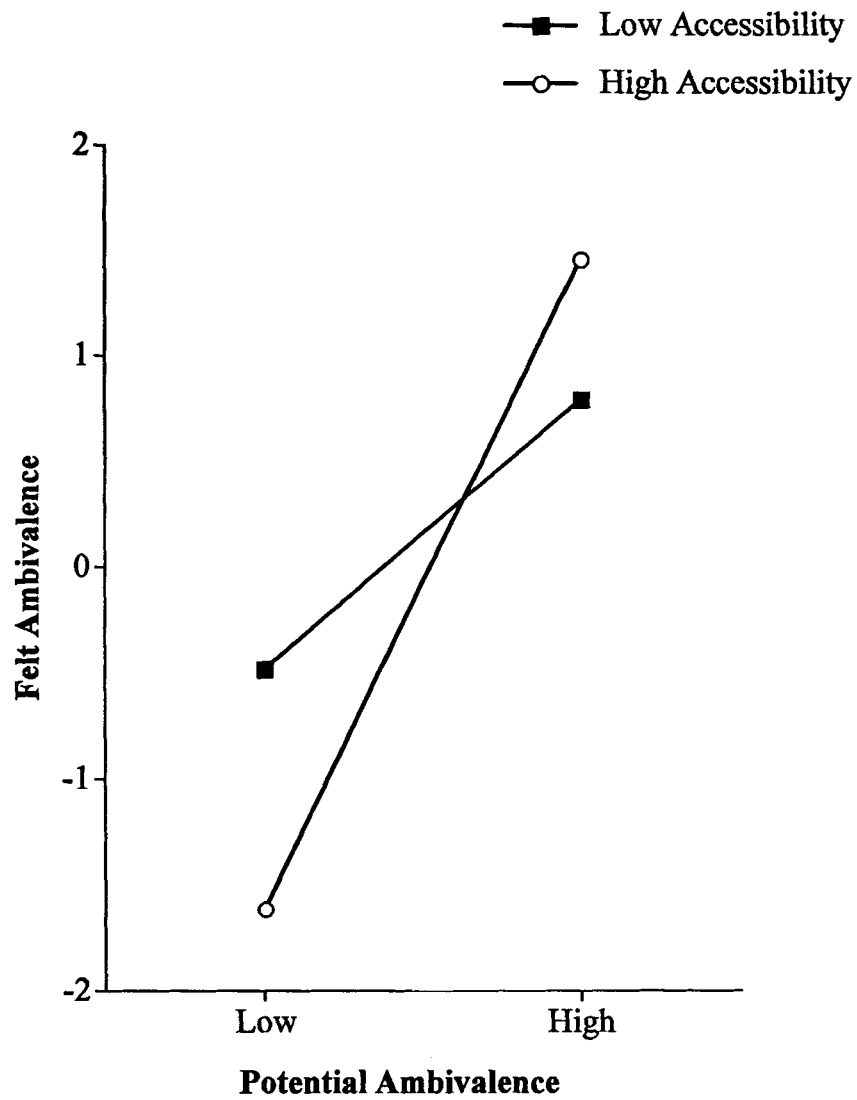


Figure 2

Felt ambivalence about abortion as a function of potential ambivalence and simultaneous accessibility.



sions and recent applications of the theory to dissonance-reducing mechanisms other than behavioral justification. We now turn to some of these newer applications.

### A SIMULTANEOUS-ACCESSIBILITY ACCOUNT OF RECENT DISSONANCE RESEARCH

Recently, there has been increasing attention to modes of dissonance reduction, other than attitude change, that may occur in everyday life. Simon, Greenberg, and Brehm (1995) have demonstrated that under certain circumstances, participants will resolve dissonance by trivializing counterattitudinal behavior. Steele has demonstrated that one can indirectly cope with dissonance by affirming oneself in a different domain (Steele, 1988) or by reducing the breadth of one's thoughts by consuming alcohol (Steele, Southwick, & Critchlow, 1981). Hypocrisy researchers have demonstrated that after being made mindful of their hypocrisy, individuals reduce dissonance by changing their future behaviors and intentions (e.g., Stone, Wiegand, Cooper, & Aronson 1997). Accessibility interpretations of these phenomena are provided below.

#### **Trivialization**

Imagine that you are a participant in a trivialization experiment. You have just completed a counterattitudinal essay and are experiencing dissonance discomfort as a result. Four questions are now provided by the researcher that essentially ask whether it is really so important in the grand scheme of things that you wrote a counterattitudinal essay. Would you not gladly agree with this suggestion and use it as an excuse to become less preoccupied with the counterattitudinal behavior? In essence, the four questions suggest not to worry about it, it doesn't really matter all that much. It seems plausible that trivialization works because it gives participants permission to forget about their inconsistent behavior. Trivialization may relieve dissonance by decreasing the simultaneous accessibility of the inconsistent cognitions,

that is, less important cognitions may wander from awareness more easily.

### **Affirmation and Alcohol**

As discussed previously, affirmation may reduce dissonance by providing a powerful distraction from inconsistent elements (rendering them less accessible). The relation between alcohol and accessibility is more direct. According to Steele and Joseph's (1990), when intoxicated, individuals are able to focus only on the most salient cue in the environment. Steele et al. (1981) have found evidence that alcohol relieves discomfort from internal inconsistencies as well, presumably because alcohol permits awareness of only one element of the inconsistency. Although no direct evidence indicates that people spontaneously use alcohol to quell dissonance, it seems probable, given the ubiquitous appeal of alcohol and the effectiveness of alcohol and distraction for reducing dissonance.

### **Hypocrisy**

Hypocrisy research capitalizes on individuals' considerable effectiveness at keeping discrepant cognitions out of focal awareness even when they are sober. In the typical hypocrisy experiment, after participants publicly advocate a prosocial attitude (e.g., condom use, water conservation, recycling), they are reminded of their past failures to practice what they have just preached. Participants caught in this dilemma, of high simultaneous accessibility of an advocated attitude and awareness of past behavioral shortcomings, resolve the predicament by acting and intending to act in a manner consistent with the advocated attitude. But it is only when participants are reminded of their past behavior that they experience dissonance. Remarkably, even when asked to think about behaviors of friends or roommates (that are inconsistent with the advocated attitude), intentions and behaviors do not change, indicating that participants' own contradictory past behavior somehow eludes awareness. The hypocrisy paradigm highlights a seemingly impressive capacity to limit awareness of personal inconsistencies under normal circumstances.

## ACCESSIBLE IDENTITY INCONSISTENCIES AND COMPENSATORY HARDENING OF THE ATTITUDES

For the remainder of this chapter, we focus on new research akin to hypocrisy research, in which participants are confronted with native inconsistencies that normally elude awareness. This departure from the conventional dissonance paradigm (in which inconsistent cognitions are experimentally implanted by means of a counterattitudinal behavior) enables investigation of inconsistencies that are fundamental to self-definition.<sup>6</sup> We propose that induced awareness of such inconsistencies will motivate a generalized and compensatory attitudinal rigidity response, that is, when the foundation of identity is shaken by dissonance, people will seek epistemic solace in more circumscribed certainties by hardening their attitudes. This section presents theoretical and empirical evidence that attitudinal extremism may be a defensive response to identity dissonance.

### **Mindset and Hardening of the Attitudes**

Taylor and Gollwitzer (1995) have recently developed "mindset" manipulations, which we think are essentially manipulations of the simultaneous accessibility of inconsistent alternative selves. They have found that when participants are induced to ruminate about both sides of a personal dilemma (deliberative mindset), mood, self-esteem, and positive illusions become depressed. In contrast, when participants are immersed in the particulars of one course of action that has already been decided on (implemental mindset), mood, self-esteem, and illusions are elevated. Taylor and Gollwitzer have suggested that individuals usually keep themselves somewhat implemental because the tunnel vision associated with implemental mindset provides required motivation for sustained effort on challenging tasks. In addition to this functional

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<sup>6</sup>Such inconsistencies may arise from mismatches between and among the implications of a diverse array of self-elements (e.g., defining memories, future possible selves, personal values, and priorities). These are referred to interchangeably as *inconsistent self-elements*, *self-relevant inconsistencies*, and *alternative selves* in the remainder of this chapter.

motive, we suggest that an epistemic motive might also be present. Perhaps individuals try to avoid deliberation and keep themselves implemental as a means of escaping the self (Baumeister, 1991; Vallacher & Wegner, 1985), that is, to shield against the dissonance discomfort associated with simultaneous awareness of inconsistent priorities and possible selves. Whereas deliberative mindset instructions increase participants' awareness of inconsistent alternative futures and associated benefits and drawbacks, implemental mindset may protect individuals from dissonance the same way that alcohol does: limiting simultaneous awareness of inconsistencies by myopic focus on one alternative (in this case, successful completion of the project in question).

On the basis of this interpretation of the mindset manipulations, McGregor (1998, Experiment 4) conducted an experiment to ascertain whether deliberative mindset would cause epistemic discomfort and arouse defensive hardening of the attitudes, as measured by increased conviction, decreased felt ambivalence, and increased consensus estimates about one's attitudes.<sup>7</sup> In the baseline condition, epistemic discomfort was assessed after a control manipulation that involved deliberating about someone else's dilemma. In the deliberation-only condition, epistemic discomfort was assessed after the deliberative-mindset manipulation. In the deliberation/hardening-opportunity condition, participants completed the deliberative-mindset materials; answered 10 questions on their conviction, ambivalence, and consensus estimates about their attitudes toward capital punishment and abortion (this provided the opportunity for them to harden their attitudes); and then completed the measure of epistemic discomfort.

As expected, in the deliberation-only condition, epistemic discomfort was significantly higher than in the baseline condition. Most important for our hypothesis, however, in the deliberation/hardening-opportunity condition, there was an apparently compensatory

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<sup>7</sup>The 19 epistemic-discomfort items were gleaned from literature on dissonance (e.g., Elliot & Devine, 1994), ambivalence (e.g., Jamieson, 1993), and contradictory self-guides (e.g., VanHook & Higgins, 1988). The items were mixed, uneasy, torn, bothered, preoccupied, confused, unsure of self or goals, contradictory, distractible, unclear, of two minds, muddled, restless, confused about identity, jumbled, uncomfortable, conflicted, indecisive, and chaotic. The scale was unifactorial and had a Cronbach alpha of .91.

hardening of attitudes about capital punishment and abortion, and epistemic discomfort was reduced to baseline levels. Moreover, attitude hardening succeeded in reducing the epistemic discomfort. A within-cell correlation revealed a significant negative relation between attitude hardening and epistemic discomfort in the deliberation/hardening-opportunity condition. These results indicate that compensatory hardening of attitudes can ameliorate the identity dissonance associated with the simultaneous accessibility of inconsistent alternative selves.<sup>8</sup>

### **Mindset and Terror-Management Theory**

The nature of the dependent and independent variables in the experiment just reported suggest a new perspective on terror-management (TM) research, which has found that people become more rigid about their attitudes and values after being reminded of their own mortality (see Greenberg, Solomon, & Pyszczynski, 1997, for a review of the past 10 years of TM theory and research).<sup>9</sup> On the dependent variable side, the attitude and value rigidity in TM research resemble hardening of the attitudes. On the independent variable side, mortality salience and the deliberative mindset both can be seen as initiating the simultaneous accessibility of identity inconsistencies.

According to TM theory, adhering to consensual attitudes and values links one to one's culture (which transcends death) and thereby provides a measure of symbolic immortality that serves as an anxiety buffer against death terror. The explanation for the results in TM experiments that we prefer, however, is that consensual values simply provide epistemic solace in the face of the identity dissonance made accessible by mortality salience. Theoretical support of this interpretation comes from Yalom's (1980) review of existentialist literature. Yalom

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<sup>8</sup>Negative affect and state self-esteem also were assessed at the same time as epistemic discomfort and neither was significantly affected by the experimental manipulations. This may be because the cell size ( $N = 17$ ) was about half that used in the Taylor and Gollwitzer (1995) experiments. Indeed, having less power in the present experiment may have made it possible to detect the discriminant validity of the epistemic-discomfort scale.

<sup>9</sup>The typical result in TM research is that evaluations of attitudinally similar and attitudinally dissimilar others become more polarized. Other kinds of psychological distress—such as concerns about dental pain, giving a speech, or unemployment—do not cause polarization.

highlights three kinds of experiences that can effectively underscore responsibility for authorship of one's identity and render the multiple possibilities associated with the "who am I" question simultaneously accessible: *important decision making*, *mortality salience*, and *awareness of the self across time*. Important decision making explicitly underscores the alternative possible selves and values associated with the alternative courses of action. Mortality salience provides an urgent reminder about responsibility for making choices in life to avoid existential guilt—regret about not having lived well. Similarly, awareness of the self across time accentuates the reality of personal becoming and thereby draws simultaneous attention to choices one has and different selves one has been. Thus, all three phenomena can be seen as confronting individuals with increased simultaneous accessibility of inconsistent identity alternatives. The experiments that follow provide further support for our contention that all three phenomena can cause compensatory epistemic rigidity. When identity inconsistencies are made accessible, we propose that individuals will attempt to cope with the identity dissonance by claiming compensatory conviction about their attitudes in more circumscribed domains.

One of the first markers of attitude rigidity used in TM research was the monetary punishment assigned to a prostitute. Mortality salience causes harsher punishment recommendations. Empirical support for our proposed relation between mindset and TM research comes from McGregor (1996), who investigated the effects of mindset on monetary punishment recommendations for a prostitute. Mirroring past mortality salience results, he found that deliberative mindset caused harsher punishment recommendations toward prostitutes than implemental mindset did.

The results of the two experiments just discussed provide support for a new perspective on TM theory. If typical TM outcomes can be induced using epistemic threat as well as mortality salience, perhaps the TM outcomes are ultimately mediated by aversion to dissonance associated with the "who am I" question rather than by abject fear of creaturely annihilation, as argued by TM theorists. From this perspective, mortality salience could be considered one kind of existential prime

that makes alternative selves simultaneously accessible. We contend that mortality salience exposes participants to a potent strain of dissonance in the identity domain and that TM outcomes exemplify compensatory hardening of the attitudes.

### **Mortality Salience, Time Salience, and Attitude Hardening**

To provide more empirical support for this interpretation of TM theory and our hypothesis that simultaneous accessibility of inconsistent self-elements causes compensatory hardening of attitudes, McGregor (1998, Experiment 3) investigated whether mortality salience and awareness of the self across time (the third existential prime suggested by Yalom, 1980) would cause the same kind of attitude hardening as deliberative mindset did in the previous two experiments. For a manipulation of mortality salience, participants responded to two short questions asking them what would happen to their physical bodies once they died and how they felt about their own death (Greenberg et al., 1997). As a manipulation of awareness of the passage of time, participants were asked to briefly comment on what it would be like to revisit the physical scene of an important childhood memory in the year 2035. The dependent variable was the difference between participants' evaluations of glowingly positive and very negative essays about the University of Waterloo.<sup>10</sup>

Results indicated that relative to controls, participants in both the time-salient and mortality-salient conditions reported a greater preference for the positive essay over the negative one. With the results from the previous two experiments, this supports the hypothesis that all three existential primes can motivate generalized epistemic rigidity as a response to dissonance associated with simultaneous accessibility

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<sup>10</sup> TM research indicates that mortality salience causes more liking for individuals who share one's values. Data were collected from University of Waterloo 1st-year students in October. Presumably, most of our participants valued a Waterloo education 1 month into their 1st term.

of identity inconsistencies.<sup>11</sup> Furthermore, both the mortality and time manipulations caused significant increases in self-reported dissonance discomfort, and the dissonance discomfort partially mediated the epistemic rigidity reaction.

### **The Mediating Role of Identity Dissonance**

Results from these three experiments demonstrate that all three manipulations can cause attitude hardening. To further explore our theory-based contention that mortality- and time-salience effects are mediated by the identity inconsistencies they remind participants of, McGregor (1998, Experiment 5) conducted an additional experiment based on findings of McGregor and Little (1998). McGregor and Little had found that identity inconsistencies are associated with the aversive experience of meaninglessness in life. If identity inconsistencies are associated with aversive meaninglessness, then reminding participants of their identity inconsistencies should increase feelings of meaninglessness and increase the desire to find meaning.

In keeping with this logic, McGregor (1998, Experiment 5) found that in comparison with control materials, time-salience and mortality-salience materials caused higher scores on Crumbaugh and Maholick's (1964) Seeking of Meaning scale (e.g., items include "I think about the ultimate meaning in life" and "Over my lifetime I have felt a strong urge to find myself"). Furthermore, mortality- and time-salience materials also caused intentions to engage in more meaningful personal projects over the next few weeks (i.e., projects that were more personally

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<sup>11</sup>It could be argued however, that time salience is simply a subtle way of reminding people about their death. After all, it is over time that people grow old and die. To assess this possibility, McGregor (1998, Experiment 3) attempted to replicate the findings that Greenberg, Pyszczynski, Solomon, Simon, and Breus (1994) used as support for their contention that TM outcomes are ultimately mediated by death awareness. Greenberg et al. (1994) found that mortality salience caused an increase in death-related word-stem completions. If time salience is simply a subtle manipulation of mortality salience, then death-related word-stem completions should be as common after time salience as after mortality salience. In the present experiment, however, no increase in death awareness after the time manipulation was found. Death word-stem completions were significantly higher in the mortality-salience condition than in control or time-salient conditions, however, suggesting that mortality salience is a sufficient but not necessary condition for TM outcomes.



important, value congruent, and self-prototypical). These findings indirectly support our contention that mortality salience and temporal extension make inconsistent self-elements simultaneously accessible.

In summary, the five experiments described in this section converge on the conclusion that simultaneously accessible identity inconsistencies can cause compensatory hardening of the attitudes. When important self-relevant inconsistencies are highlighted by deliberating about dilemmas, mortality salience, or awareness of the self across time, participants attempt to reestablish epistemic equilibrium by claiming conviction about attitudes in more circumscribed domains. Just as the simultaneous-accessibility notion provides an integrative perspective on past dissonance research, in conjunction with dissonance theory, it provides a powerful explanatory tool for integrating some other burgeoning directions in social psychology.

## CONCLUSION

The main theme in this chapter is that for dissonance (or ambivalence) to be aroused, inconsistent cognitions must be simultaneously accessible. Simultaneous accessibility is an important variable that has considerable power for integrating disparate findings from a variety of dissonance paradigms (see also chap. 8, this volume) and from other research areas as well. In addition, recognition of the role of accessibility allows for a shift in focus from experimentally implanted inconsistency (through counterattitudinal behavior) to the investigation of native inconsistencies (see also Higgins, Shah, & Friedman, 1997). This shift holds promise for revealing the full power of cognitive dissonance. When exposed, important self-relevant inconsistencies that are normally defended against should have more motivational power than, for example, awareness that one has written an essay in favor of tuition increases. The identity-dissonance research reported in the final section suggests several new directions that might be fruitfully investigated. In particular, it suggests that extremism and zealotry may be motivated by the identity dissonance associated with simultaneously accessible alternative selves.

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