

# A NEW LOOK AT DISSONANCE THEORY

**Joel Cooper**

DEPARTMENT OF PSYCHOLOGY  
PRINCETON UNIVERSITY  
PRINCETON, NEW JERSEY

**Russell H. Fazio**

DEPARTMENT OF PSYCHOLOGY  
INDIANA UNIVERSITY  
BLOOMINGTON, INDIANA

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## I. Introduction

Cognitive dissonance theory is now more than a quarter of a century old. The theory has generated more than 1000 published research entries and a con-

siderable amount of controversy. Starting with an elegantly simple proposition, the theory has provided rich insights into the way in which people deal with the consequences of cognitive inconsistency. In addition, the theory has had no lack of critics, who have questioned some or all of the proposed theoretical relationship.

From the myriad of supporting and critical discoveries, one conclusion is clear: The definition of dissonance as originally proposed by Festinger (1957) is no longer adequate to account for the data that have accumulated. As Jones (in press) concluded in his analysis of the history of modern social psychology, "From Festinger's extremely simple, rather vague theoretical statement, the theory evolved with the aid of experimental feedback to include a set of well articulated systematic relationships." In the present paper, we examine those relationships and propose a new definition of cognitive dissonance that is, we believe, more in tune with the current state of empirical findings.

Festinger (1957) proposed that cognitive dissonance occurs when one cognition that a person holds follows from the obverse of another. Moreover, dissonance was described as a state of psychological discomfort akin to the drive states of hunger or thirst. In this paper, we examine the state of the empirical findings in order to move toward a more comprehensive view of dissonance. Moreover, we will argue that once we understand what produces dissonance, we still need further elaboration of the process in order to understand adequately the cognitive changes that ensue. We propose that the concept of dissonance must, in turn, be differentiated into the concepts of dissonance arousal and dissonance motivation. It is the latter that leads to the cognitive changes that are generally associated with cognitive dissonance.

When Festinger and Carlsmith (1959) conducted the first experiment in induced compliance, they set off a flurry of theoretical and empirical controversy. College students were asked to tell a supposedly unsuspecting fellow student that an experimental task which they knew to be dull and boring was in fact interesting and exciting. The investigators argued that the cognition, "I thought the task was dull" and the cognition, "I said to this student that the task was interesting" would produce the kind of inconsistency that would lead to the arousal of dissonance. The arousal of dissonance, an uncomfortable tension state, was predicted to lead to a change of one of the cognitions to restore harmony. Because the behavioral cognition (i.e., what the subject said) could be expected to be more resistant to change, Festinger and Carlsmith predicted that attitudes toward the task would change. This is what they found—and more.

Festinger and Carlsmith (1959) also offered an incentive for subjects to make their counterattitudinal statement. Some subjects were offered the sum of one dollar. Other subjects had been offered \$20 for participating (and also for being on call for the rest of the semester). It was argued that the more incentive a participant was given, the more justification there was for the counterattitudinal

behavior. This, in turn, should lead to less dissonance. A paltry sum of money, on the other hand, would not provide much of a supporting cognition and therefore would arouse dissonance. The results showed significantly more positive attitudes toward the task in the low incentive condition than in the high incentive condition or in a control condition. This three-condition experiment marked the birth of the induced compliance paradigm.

In Jones's (in press) view, one of the reasons that dissonance theory and the induced compliance paradigm engendered much critical debate in the 1960s was its willingness to take on the conventional wisdom of the role played by secondary reinforcement notions. The idea of predicting great degrees of attitude change in the face of a small magnitude of incentive and a small degree of change in the presence of a large incentive seemed at variance with secondary reinforcement principles. Research critics found several reasons to be skeptical of the induced compliance work. Chapanis and Chapanis (1964) published a review that pointed out methodological ambiguities with a number of the early studies in dissonance theory, including Festinger and Carlsmith's (1959). They pointed out, for example, that the role played by a \$20 inducement may have seemed like a bribe rather than an incentive. Rosenberg (1965) speculated that such a bribe might have evoked participants' "evaluation apprehension"—the concern that they would be evaluated by the psychologist and look particularly unworthy if they changed their attitudes after having received a bribe. Although some of the alternative explanations raised by critics of particular studies may have been justified, the volume of replications in a variety of situations has left the basic finding intact.

Nevertheless, Festinger and Carlsmith's (1959) interpretation of the induced compliance finding has not gone unchallenged. Aronson and his colleagues (e.g., Aronson, 1968; Nel, Helmreich, & Aronson, 1969) suggested that it was not inconsistency per se that caused counterattitudinal statements to lead to cognitive dissonance and to eventual changes in attitudes, but rather behavior that threatened one's self-esteem. Convincing a student to believe that a boring task was exciting and interesting might lead a person of high self-regard to believe that he or she has just committed an act not in keeping with what a truly worthy person should have done.

Similarly, Steele and Liu (1981, 1983) have argued that self-justificatory attitude change following counterattitudinal advocacy may be based upon an ego-based need to reaffirm that one has behaved in accord with positive values. Individuals who write an essay or make a speech that is contrary to a valued position may feel that their self-image has been lowered. What these people need, then, is a way to reaffirm their values. Steele and Liu propose that attitude change is one way for individuals to view their behavior as an affirmation of their values.

The idea of threats to self-esteem, although provocative, probably has not

addressed sufficient data to be a complete theory of the causes of cognitive dissonance. Direct tests that have attempted to vary self-esteem have been equivocal (e.g., Cooper & Duncan, 1971). Nonetheless, research in the tradition of self-esteem variance did arrive at some very provocative findings (Deutsch, Krauss, & Rosenau, 1962; Gerard, Blevans & Malcolm, 1964; Worchel & McCormick, 1963).

## **II. The First Step Toward Dissonance Arousal: Aversive Consequences**

Nel, Helmreich, and Aronson (1969) conducted a study based on the view that dissonance is created by threats to self-esteem. What they succeeded in showing was that inconsistency per se is not sufficient to produce dissonance-related attitude change. In their empirical study, Nel *et al.* had all subjects deliver an address that was counterattitudinal under conditions that have typically been associated with the arousal of dissonance. With choice and commitment set high and incentive magnitude set low, Nel *et al.* had subjects volunteer to give speeches in which they advocated legalization of marijuana. Nel *et al.* manipulated the characteristics of the audience. Subjects were informed that the audience to whom the speech was to be given was firmly committed against the position they were to advocate, was firmly committed in favor of it, or was noncommittal (a group of school children). Nel *et al.* found that the making of a counterattitudinal statement to a noncommittal group was the only treatment that produced attitude change. They reasoned that agreeing to make a speech to a group that is genuinely persuasible is an act not worthy of a self-respecting person.

This study begins to shed light on the question of what is needed to arouse cognitive dissonance. For example, if individuals were to speak quietly in the confines of their bedroom, would making a counterattitudinal speech arouse dissonance and result in cognitive changes? There is ample evidence to suggest that such logical inconsistency would not produce cognitive dissonance; in order for cognitive dissonance to occur, a product must result from the counterattitudinal behavior. And that product is the bringing about of—or the possibility of the occurrence of—an aversive event. If there is no aversive event that might be expected to occur following an action, then that action will not lead to the arousal of cognitive dissonance.

By an aversive event, we mean an event that blocks one's self-interest or an event that one would rather not have occur. Thus, making a statement contrary to one's attitude while in solitude does not have the potential for bringing about an aversive event. Similarly, the chance that Nel, Helmreich, and Aronson's (1969)

subjects would bring about an aversive event when the audience was committed to a position opposed to the speech was very small. And when the audience was committed to the counterattitudinal position, the chances of bringing about an aversive event were nonexistent, because the unwanted event already existed. Only in the condition in which the audience was uncommitted did the counterattitudinal speech of the subject have the clear chance of bringing about a shift in the children's opinions in the unwanted direction.

How, then, did the Festinger and Carlsmith (1959) subjects come to experience dissonance if inconsistency is not sufficient to produce that arousal state? A re-examination of Festinger and Carlsmith's study reveals that, in addition to creating conditions of psychological inconsistency, the subjects in that experiment were also induced to bring about an aversive event. Not only did the participants have to say something that was at variance with their private beliefs, but they also convinced an unsuspecting fellow student to expect great things from a task which the participant knew was, in fact, dull and boring. Duping and deceiving a fellow student may well have been perceived as an aversive event, just as deceiving school children to accept marijuana may have been aversive in the Nel *et al.* study.

This reasoning was tested by Cooper and Worchel (1970), who repeated the Festinger and Carlsmith (1959) study while varying the consequences of the counterattitudinal behavior as an independent variable. Participants performed the dull, boring task created by Festinger and Carlsmith and, for varying degrees of incentive, agreed to tell a fellow student that the task was really exciting. For half of the subjects, the "fellow student" appeared convinced by the subject's statements. For these subjects, the unwanted event of deceiving a fellow student was made to occur. However, this unwanted event was specifically eliminated for the other half of the subjects. Although they made their counterattitudinal statements, these subjects learned that the "waiting subject" remained unconvinced and still expected the tasks to be uninteresting. The results of the study showed that only those subjects who believed that they had successfully deceived the waiting subject showed dissonance-produced attitude change. Subjects for whom the aversive consequence had been eliminated did not come to believe that the task was interesting.

Note, too, that it is difficult to interpret studies such as Cooper and Worchel's (1970) as consistent with self-esteem versions of dissonance. If it is contrary to one's self-esteem to volunteer to tell someone that a dull task is interesting, it should make little difference if one's colleague does or does not fall for the untruth. Agreeing to convince the unsuspecting student constitutes a dastardly act—one that a worthy person would not commit. It is just as dastardly an act regardless of whether or not the other student successfully resists the persuasion.

A study by Cooper, Zanna, and Goethals (1974) carried this reasoning

regarding the necessity of aversive consequences one step further. They argued that if producing an aversive consequence is the key to understanding the effects of induced compliance, then merely convincing a waiting student should not always lead to dissonance in the experimental paradigm under discussion. Duping a fellow student may be counterattitudinal and may lead one to feel that he or she has done a very good job of persuasion, but it is an aversive event only to the extent that one has positive feelings toward the one who has been duped. Deceiving a disliked other to anticipate that a dull task might be exciting is hardly aversive. But convincing a liked person to look forward to something when it is known that he or she will soon be disappointed is, indeed, aversive. So Cooper, Zanna, and Goethals set out to ascertain the precise conditions that lead to dissonance-produced attitude change. In their experiment, subjects were led either to like or to dislike a fellow student. They then attempted to convince the fellow student that a dull task was actually exciting and something to look forward to. Half of the liked and half of the disliked confederates were convinced by the subject's remarks; the other half indicated that they were unconvinced. Cooper *et al.* (1974) found that the only subjects who changed their attitudes about the task were those who successfully convinced a student that they liked. Convincing a disliked student or failing to convince a liked student did not lead to attitude change, despite the fact that the subjects' remarks were inconsistent with their private attitudes.

The implication of this line of reasoning is that dissonance has precious little to do with the inconsistency among cognitions *per se*, but rather with the production of a consequence that is unwanted. Behaving in ways that are counterattitudinal often facilitates the arousal of dissonance because it is related to the bringing about of an unwanted event. In the dull task paradigm, the fact that the behavioral statement is counterattitudinal sets the stage for the possibility of making the situation aversive. But the counterattitudinal nature of the behavior is not a sufficient condition to lead to cognitive dissonance.

This implication is equally apparent in the research involving the making of political statements that are at variance with private attitudes. Advocating a disliked position often runs the risk of having that position brought about. Persons who are actually in a position to effect policy changes might become convinced by the argument and institute a disliked policy. In early research by Cohen (1962), for example, it was implied that counterattitudinal essays written by university students might be used by a university institute to adopt an antistudent position. Linder, Cooper, and Jones (1967) had students write essays favoring a ban against inflammatory speakers on college campuses. Students disagreed with this position but knew that their essays were to be shown to a panel who had the power to effect such a policy.

Goethals and Cooper (1972) manipulated the degree to which another per-

son was convinced to believe in a subject's counterattitudinal statement. In one study, subjects made attitude-discrepant speeches in which they advocated the position that people should not be allowed to vote until the age of 21. Another person (actually a confederate) overheard the subject's advocacy and reported that he either was or was not convinced by what the subject said. Dissonance was apparently aroused only in the condition in which the listener was convinced. In similar research, Goethals and Cooper (1975) found that students showed changes of attitudes when they made counterattitudinal statements to a campus group that might effect a disliked policy at the university, but showed no attitude change when the same counterattitudinal statement was made but was not to be shown to the campus agency.

Of course, aversive consequences need not actually occur for dissonance to be aroused. It is the subjects' *perceptions* that the consequences will result from their actions that are important. In fact, there is abundant research indicating that even the counterattitudinal behavior itself can be anticipated rather than experienced. *Agreeing* to perform attitude-discrepant behavior produces the same dissonance effects that actually performing the behavior produces (Linder, Cooper, & Wicklund, 1968; Waterman, 1969; Wicklund, Cooper, & Linder, 1967).

An important corollary to the notion that the expectation of an aversive consequence is necessary for the arousal of dissonance is that the consequence must be irrevocable. A person making a political statement or a person convincing a colleague of something that is not true must not feel that he or she can "take it back." If a political leftist makes a conservative statement to a group of politically naive students, he will probably not experience dissonance if he knew that in a moment or two he could rescind his remarks, tell them he was only cooperating with an experimenter, and then tell them of his true beliefs. Similarly, a student in the dull task research might not experience dissonance if she knew she would be able to catch her colleague and set the record straight before the colleague participated in the task.

This assumption was tested experimentally by Davis and Jones (1960). Male participants were induced to deliver rather negative personal characterizations of a fellow student. It was known that these characterizations were counterattitudinal for the subjects. Half of the subjects believed that they would meet their fellow student and therefore have the chance to tell him that the assessment were merely part of the experimenter's research. The other half expected no such opportunity. The results showed that dissonance-produced attitude change occurred only when the consequence was irrevocable and not at all when the subject believed he could rescind the consequence of the statement.

All the research just discussed shares a common element. Successful attempts to change attitudes through the arousal of dissonance all contain an element of bringing about—or potentially bringing about—an irrevocable aver-

sive event. The recognition that an aversive event has resulted or might result from one's behavior is the first essential ingredient in the arousal of cognitive dissonance. But it is only the first step.

### III. Personal Responsibility: A Necessary Link

Aversive consequences lead to the tension state that we call cognitive dissonance only under a special combination of circumstances. This occurs when a person is led to make a personal or internal attribution for having brought about an unwanted event. We call such an attribution the assumption of *personal responsibility* and define it as the *attribution that the locus of causation for an event is internal* (see Cooper, 1971; Wicklund & Brehm, 1976).

Because dissonance is generally associated with an unpleasant hedonic state, it follows that people are motivated to avoid it. This can be accomplished by denying personal responsibility for the unwanted event. The two most commonly used vehicles for denying responsibility are the attribution that an action has been coerced by environmental pressures and the attribution that the unwanted event is an unforeseeable consequence of the individual's behavior. If either coercion or unforeseeability can be claimed, then the individual need not experience dissonance arousal. We consider each of these concepts in turn.

#### A. PERCEIVED FREEDOM

The first essential ingredient of personal responsibility is the perception that an action was undertaken freely without having been constrained by the environment. Environmental constraints can be of various forms and strengths. Deciding not to cross the street while the "wait" light is on may not be perceived as a free decision, but rather as an action forced by the environment. A policeman standing conspicuously at the street corner may aid this attribution. Similarly, deciding to hand over money to an armed robber will, in all probability, also be attributed to environmental pressures. In a laboratory study in which an investigator orders a participant to write an attitude-discrepant statement, the participant need not attribute personal responsibility to her- or himself for the action. The locus of causation for that behavior properly belongs to the high-status experimenter, and thus responsibility can be denied. "Why did I behave in this way?" the subject may query. "Because the investigator told me to," would be the logical reply. Without having to take responsibility, dissonance can be avoided.

The notion that freedom is necessary for dissonance arousal has been known for some time. Indeed, Davis and Jones (1960) showed that a subject who is



induced to make derogatory statements about a person whom the subject actually liked changed his attitudes toward the subject only if the statements were made under conditions of perceived high choice. Linder *et al.* (1967) conducted two studies to test the importance of choice in arousing cognitive dissonance. In the more straightforward of their studies, the subjects' task was to write an essay favoring a disliked policy that might have been invoked on their college campus. Some of the subjects were asked if they would like to write the essays and were told that the decision was completely their own and that they could leave the laboratory if they so desired. The other half were merely told to write the essay.

The investigators also varied the magnitude of the incentive that was offered for writing the essay. Half of the subjects were offered a small financial inducement whereas the other half were offered a larger sum. The dissonance theory prediction regarding the role of incentive magnitude is that small inducements are effective in having attitude-discrepant behavior lead to attitude change whereas large inducements are not. The results of Linder *et al.*'s (1967) study showed that the inverse relationship between incentive magnitude and attitude change did not occur when the participants were told, rather than asked, to write their essay. The dissonance-predicted relationship occurred only under the high-choice instructions. As dissonance theory would predict, attitudes changed as an inverse function of incentive magnitude.

Subsequent studies continued to demonstrate that counterattitudinal behavior committed under conditions of low-perceived freedom does not produce attitude change (e.g., Cooper & Brehm, 1971; Collins & Hoyt, 1972; Goethals & Cooper, 1972; Sherman, 1970a). However, perceiving one's own behavior as having brought about an aversive event still does not ensure that responsibility will be attributed internally. We have stressed that responsibility is a joint function of perceived freedom and perceived foreseeability of the consequences of the behavior. Foreseeability is a subtle but crucial determinant of whether an individual will accept responsibility and consequently will experience dissonance arousal.

## B. FORESEEABILITY: THE LINK TO RESPONSIBILITY

Imagine a man driving down a dark country road. He decides to travel at 55 miles per hour (mph). Imagine, too, that the driver notices a warning signal indicating that the road is slippery ahead. He continues to drive at 55 mph, slides around the curve, and causes the unwanted event of driving off the road. Will he feel responsible for bringing about the aversive event? We can compare his probable attribution to a similar scene of a driver who decides to travel at 55 mph on the same road, but has no idea of danger ahead. He sees no road sign warning of the imminent danger. Would he feel as responsible for having caused the

event? Most likely the first driver would attribute more responsibility to himself than would the second driver. The difference in the two scenarios is only that the first driver should have been able to foresee the consequence of his continuing to drive at the speed limit, whereas the second driver could not.

Responsibility attribution in the induced-compliance research paradigm possesses similar properties. An aversive consequence that is foreseeable should lead to the attribution of responsibility and hence lead to the arousal of dissonance. When an event's occurrence is unforeseeable, then engaging in behavior that brings about that event will not lead to dissonance, regardless of the level of perceived choice and the degree of aversiveness of the event.

Cooper and Brehm (1971) had subjects agree to perform a boring and noxious task. Some subjects knew that they would be suffering the consequence of not receiving any payment for their participation and that most other subjects were being paid. Other subjects did not know of their relative deprivation until after their agreement had been obtained. The prediction derived from dissonance theory was that the greater the degree of aversiveness (i.e., the higher the relative deprivation or the more the remuneration that subjects were *not* getting), then the greater the dissonance and ultimately the more the subjects would think that the task they performed was satisfying. The results showed this to be true—but only if the aversive event (the relative deprivation) was foreseeable prior to agreeing to participate.

Cooper (1971) tested the importance of the combined effect of decision freedom and foreseeability. Female subjects either made a choice or were coerced to play a game with a partner that could result in winning a financial prize. However, the partner was described as having a specific personality trait that might make her a poor choice as a partner because both players had to be successful in order for either to win the desired money. As the subject and her partner began to play, it became obvious that the partner was not being successful, thus causing the subject to lose the prize. In this experiment all subjects behaved in a way that caused an aversive event. All lost money because they played the game with a partner whose personality trait made her an unsuccessful player. But subjects who had no choice but to work with the partner could absolve themselves of responsibility by viewing the environment (i.e., the experimenter) as the locus of causation for playing with the unsuccessful partner.

Some subjects were also given the chance to view their partner's unfortunate personality trait as being unforeseeable. As the game began, it became apparent for half of the subjects that the trait that was causing the partner to be unsuccessful was the opposite trait to the one they had been led to expect. The other half of the subjects found the trait to be precisely the one they had been led to expect. It was possible for the former half to deny responsibility for working with a partner who had a game-losing personality trait by believing that they had no way of anticipating their partner's actual trait. The data from the experiment

showed that only subjects who chose to work with their partner *and* who accurately knew which personality trait their partner actually had changed their attitudes about their partner as a function of the arousal of dissonance. If subjects could claim that the event was unforeseeable or that they were not given the freedom to choose their partner, then responsibility was avoided and dissonance was not aroused.

### *1. On the Meaning of Foreseeability*

Several studies have employed the concept of foreseeability and concluded that subjects deny responsibility if the unwanted consequences of their behavior are unforeseen. There are some contrary examples, however, in which a consequence that was seemingly introduced after the fact did lead to attitude change (Aronson, Chase, Helmreich, & Ruhnke, 1974; Sherman, 1970b; Sogin & Pallak, 1976). Taken together, these studies call for a sharper focus on the meaning of foreseeability. Just when does an individual conclude that a consequence was foreseeable? Is it the same as a consequence that is foreseen? If not, what are the differences?

Goethals, Cooper, and Naficy (1979) attempted to clarify the concept of foreseeability. They differentiated between the concepts of foreseeable and foreseen. They argued that consequences that are not foreseen at the time that a behavior is undertaken may still be foreseeable. That is, there are some consequences that are not explicitly expected or foreseen but which, retrospectively, might reasonably have been anticipated. These consequences are regarded as foreseeable and lead to cognitive dissonance arousal. If an unwanted consequence follows a behavior, people ask themselves not only whether the consequence was known but also whether the consequence should or could reasonably have been known at the time of the decision to act. If the answer to that question is affirmative, then the consequence was foreseeable. Foreseeable consequences, as well as those that were clearly foreseen, have the potential to arouse dissonance.

In an empirical demonstration of this distinction, Goethals *et al.* (1979) had subjects write counterattitudinal essays. Some subjects believed that the essays were only for the eyes of the experimenter. A second group of subjects believed that the essays would be sent to a committee that could create unwanted consequences for the essay writers. A third group knew that some other people might be interested in the essays, but they were not told who they were. For all groups, it turned out that the essays were to be sent to the committee that could bring about the unwanted consequence. For the first group of subjects, such a consequence was not knowable at the time of the decision to write the essay. It did not lead to attitude change. For the second group, the consequence was foreseen, and it did lead to attitude change. The crucial group was the third. The consequence

was not explicitly foreseen but, in retrospect, it could have been known. Indeed, this group of subjects did change their attitude to bring them in line with the counterattitudinal behavior.

## 2. *Implications of Foreseeability: Eliminating Cognitive Dissonance*

The notion that cognitive dissonance is aroused by freely bringing about aversive consequences that are foreseeable has some interesting implications on the other side of the ledger. To what extent can dissonance be eliminated if an aversive consequence is removed? The answer may depend again on the concept of foreseeability. Imagine a situation in which we induce an advocate of expanding nuclear energy systems to make a statement urging an end to nuclear expansion. In this situation, our subject agrees to make his antinuclear speech as a tape recording, which he fully expects will be played on the local radio station. Thus far, all of the ingredients for the arousal of dissonance are present. An aversive event (i.e., the probability of convincing at least some of the listeners to oppose nuclear expansion) will be brought about through the personal responsibility of the speaker. Now suppose that, after making the speech, the speaker learns that the tape recorder malfunctioned. The speech cannot be played on the radio; the aversive consequence will not arise. Has dissonance arousal been eliminated?

Cooper and Goethals (1974) conducted such a study at Williams College. Students were induced to make speeches in favor of a college parietal system that the students actually opposed. They were led to believe that the speeches were intended to be played at the meeting of a college council that had the authority to make policy with regard to this issue. Some of the subjects were led to believe that their speech would definitely be played to the council. Others believed that the tape might or might not be played. Thus, all subjects agreed to the possibility of bringing about an aversive event. However, for some of the subjects, that event was an assured outcome of agreeing to make the tape, whereas for other subjects the event's occurrence was only a possible outcome of making the counterattitudinal tape.

As it turned out, half of the subjects in each condition learned that their tape would indeed be played to the college council. The aversive consequence then was clearly in prospect. On the other hand, the remaining subjects learned that their tape would not be used. For these subjects, no aversive event would occur. The aversive consequence not occurring was a foreseeable event for those subjects who initially knew their tape might not be used. But the elimination of the aversive event was completely unforeseeable for subjects who were led to believe that the tape assuredly would be used.

All subjects had their attitudes toward the parietal system assessed at the end of the study. As expected, dissonance was apparently aroused and reduced via

attitude change for all subjects who learned that their tape would be used. After all, they had brought about a potentially aversive event, freely and foreseeably. Subjects in these conditions came to believe in the validity and value of parietals more than did a group of control subjects. For subjects whose tape recordings were not to be used, those for whom the tape's not being used was an unforeseeable event continued to show evidence of dissonance arousal. They changed their attitudes toward parietals just as much as subjects who learned that the aversive event would occur. The only subjects whose dissonance arousal was eliminated were those for whom the tape's not being used was a foreseeable event at the time they decided to make the tape recording. It would appear then that the elimination of dissonance also relies upon foreseeability—the foreseeability that an event is going to occur.

Other evidence supporting the crucial role played by the foreseeability of an event was contributed by Brehm and Jones (1970). They demonstrated that the introduction of *positive* consequences were ineffective in eliminating dissonance if those consequences were unforeseeable. Brehm and Jones had participants make a choice between two attractive consumer items. The dissonance created by rejecting one of the attractive items was made more bearable by the surprise introduction of a bonus gift. The gift was expected to be a cognition consonant with the choice and therefore would reduce dissonance. The subjects' eventual ratings of the consumer items showed that the gift was not effective in reducing dissonance if its occurrence was not foreseeable at the time the subjects made their decision between the two items.

#### **IV. Summary of the Conditions Necessary for Dissonance Arousal**

Figure 1 summarizes the discussion thus far. Cognitive dissonance is not simply brought about by the perception of inconsistency among cognitions but rather by the perception of having brought about an aversive and irrevocable event. The dissonance process begins with the performance of a behavior whose consequences are judged to be aversive in nature. That is, the behavior produces, or has the possibility of producing, an event that one would rather not have occur.

One way to conceptualize this is to view the consequence as aversive if it is sufficiently discrepant from the individual's desires that it falls within a latitude of rejection. Indeed, it has been demonstrated that the endorsement of a political position within one's latitude of rejection and the consequent possibility of convincing others to adopt such a political stance does produce dissonance

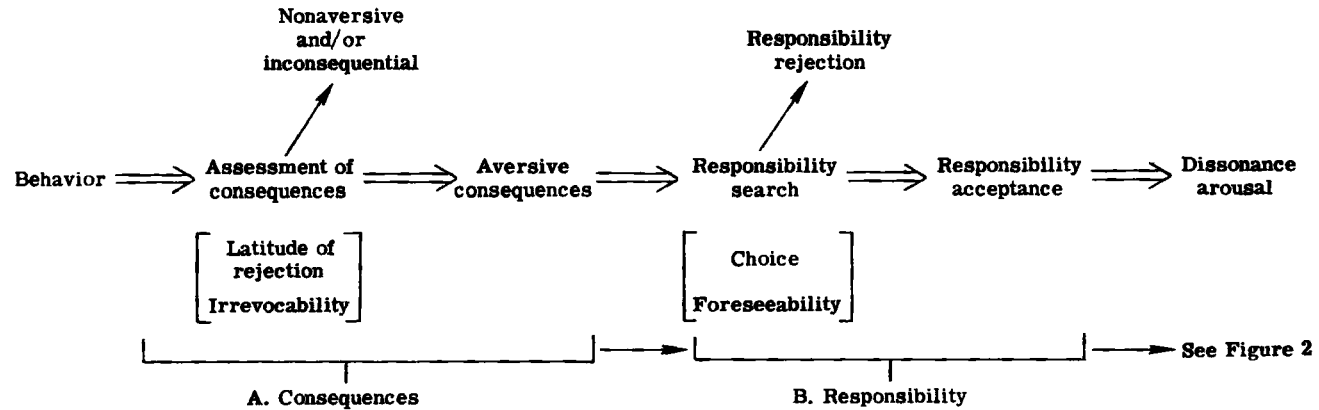


Fig. 1. The sequence of events leading to dissonance arousal. The symbols are  $\Rightarrow$  dissonance path,  $\rightarrow$  alternative possibilities, and [] factors considered.

(Fazio, Zanna, & Cooper, 1977). The same potential consequence does not produce dissonance when the position endorsed falls within the latitude of acceptance.

Notice, too, that person's behavioral commitment takes on added emphasis in the present view. For Festinger (1957), the perception of behavior is one of the many cognitions that a person holds. It is an important cognition because, compared to attitudes, it is highly resistant to change. The present view accepts the importance of behavior, but not just because of its resistance to change. It is the behavioral commitment that produces consequences and the perception of the foreseeability and aversiveness of those consequences that determine the arousal of dissonance.

The occurrence or the forecast of an objectionable event is not sufficient to produce the state of dissonance, however. What such an event does, we argue, is to prompt an attempt to identify the agent responsible for the aversive consequences. There is nothing novel about such an assertion. Indeed, it has long been argued that attribution processes are instigated by the occurrence of novel, unexpected, or extreme events (Berlyne, 1960; Pyszczynski & Greenberg, 1981; Swann, Stephenson, & Pittman, 1981; Wong & Weiner, 1981). Likewise, the aversive event prompts an attempt to identify the locus of causality. If this event occurs because of something for which the actor is responsible, then and only then will it lead to the state of dissonance. If responsibility can be avoided by the actor by perceiving him- or herself to have been coerced or by perceiving the aversive event to have been an unforeseeable consequence of his or her decision, then that event—no matter how aversive—will not lead to the state of dissonance.

What properties does this state of dissonance possess? Our analysis thus far has accepted Festinger's (1957) assumption that dissonance is akin to a driveline arousal state that is psychologically uncomfortable and that necessarily produces pressure to undergo cognitive changes. Research on the properties of dissonance arousal has advanced to the point in which we are now able to examine these assumptions. In the following sections we look at the evidence supporting the notion that dissonance is a state of arousal. However, the arousal state by itself may not be sufficient to lead to the pressure for cognitive changes that are typically associated with dissonance.

## **V. Dissonance Arousal: Does It Occur?**

Beginning with Festinger's (1957) original statements in which he drew an analogy between dissonance and drive states such as hunger, it has been presumed that dissonance involves an arousal state. Fazio and Cooper (1983) have

proposed that dissonance arousal be viewed as a conditioned emotional response. Originally neutral stimuli (e.g., a light or a tone) can take on negative qualities following repeated pairings with noxious events (e.g., electric shock). When only the previously neutral stimulus is presented later, the organism displays evidence of emotional arousal, presumably in anticipation of the expected noxious event (Kamin, 1969; cf. Mowrer, 1947, 1960). Likewise, a child may learn on the basis of early experiences that being responsible for some negative consequence leaves him or her open to some form of negative sanctions from parents and/or peers. In anticipation of such retribution, the individual may become aroused. Given a sufficient number of such experiences, an association is apt to develop between personally producing negative effects and arousal.

A considerable body of research now allows us to infer the existence of such an arousal state as a consequence of dissonance manipulations. (See Fazio and Cooper, 1983, for a detailed review of this body of literature.) The evidence stems from three very different lines of research: (1) Dissonance manipulations tend to energize dominant responses, just as arousal states are known to do. (2) Dissonance manipulations produce measurable physiological arousal. (3) Like the arousal involved in emotions, the state of dissonance requires appropriate interpretation and labeling for attitude change to occur.

#### A. ENERGIZING PROPERTIES OF DISSONANCE AROUSAL

Early research attempts focused on the notion that if dissonance manipulations produce arousal, that arousal state should operate as do other known arousal states in energizing dominant responses (Spence, Farber, & McFann, 1956). Arousal typically facilitates performance on simple tasks but interferes with performance on more complex tasks.

In the first use of this principle in order to examine dissonance arousal, Waterman and Katkin (1967) found that, in comparison to writing a consonant essay, writing a dissonant essay facilitated performance on both a simple and a complex task. They suggested that the latter task may not have been complex enough to produce the interference effect. Cottrell and Wack (1967) and Waterman (1969) were able to demonstrate the predicted interaction between levels of dissonance and dominance of response. However, as Pallak and Pittman (1972) have pointed out, these studies failed to provide any direct evidence of dissonance reduction (i.e., attitude change). Thus, it is unclear as to whether dissonance was properly manipulated, and it is conceivable that the manipulations produced some other form of emotional arousal.

Pallak and Pittman (1972) did, however, succeed in demonstrating in a series of studies both the energizing effects and the attitude-change effects of dissonance. In a first study, the experimenters found that a dissonance manipula-



tion both facilitated performance on a simple task and interfered with performance on a complex task. A second study demonstrated that the dissonance manipulation employed was effective in producing attitude change and also provided a partial replication of the first experiment. Although the conditions necessary to establish the facilitation of simple learning were not included in the design, decrements in performance on a complex task as a consequence of the dissonance manipulation were demonstrated. In conclusion, the data from these various studies suggest that dissonance arousal is characterized by driveline energizing properties.

#### B. PHYSIOLOGICAL MEASUREMENT OF DISSONANCE AROUSAL

Very few reports of attempts to measure dissonance arousal directly exist in the literature. Fazio and Cooper (1983) provide a detailed review of these few experiments. All reports provide some evidence suggesting the existence of physiological arousal. Yet, in each case, the results are rather inconclusive because of the failure to employ standard dissonance paradigms and/or to find independent evidence of dissonance reduction with attitudinal measurements.

Croyle and Cooper (1983) provide strong evidence that dissonance involves an arousal state. These investigators employed a standard induced-compliance procedure that they demonstrated to be effective at producing the typical attitude-change effect in an initial experiment. In a second experiment, subjects drawn from the same population were assigned to the identical conditions for physiological recording. Physiological arousal was measured by the frequency of spontaneous electrodermal activity. Subjects in each of the three conditions—high-choice, counterattitudinal essay; low-choice, counterattitudinal essay; and high-choice, proattitudinal essay—manifested arousal during the actual essay writing. However, only subjects in the high-dissonance condition (i.e., high-choice, counterattitudinal) maintained this elevated arousal level during a rest period immediately following the essay writing. Subjects in the other two conditions rapidly habituated to their base rates during the rest period. In sum, freely choosing to write a counterattitudinal essay that might potentially influence an important policy decision, and thus might produce an aversive consequence, resulted in measurable physiological arousal.

#### C. INTERPRETATION OF DISSONANCE AROUSAL

The third line of research concerning the issue of dissonance arousal has been particularly informative because it has provided not only evidence regard-

ing dissonance as a state of arousal but also evidence regarding the processes by which individuals who are experiencing dissonance interpret the arousal state (see Fig. 2). If dissonance manipulations produce arousal, then that arousal state should be amenable, as other known arousal states are, to cognitive labeling. That is, dissonance arousal should operate in the same manner as other emotional states. According to Schachter and Singer's (1962) theory, emotional states result from arousal that is cognitively labeled in accordance with cues provided by the situation. Thus, the same state of autonomic arousal can be labeled as euphoria due to the playful antics of a confederate or in a different situational context as a very different emotion (Schachter & Singer, 1962).

### *1. Misattribution of Dissonance Arousal to an External Source*

Utilizing the attributional approach of Schachter and Singer, Zanna and Cooper (1974) suggested that dissonance arousal could also be mistakenly attributed to some external source, i.e., to some source other than being responsible for an aversive consequence. Given a situational cue that the emotion they are experiencing is not tension due to their counterattitudinal behavior, subjects in a dissonance situation, Zanna and Cooper argued, should experience no need to modify their attitude. The findings supported this prediction. When subjects ingested a placebo that ostensibly produced, as a side effect, feelings of tension, attitude change was attenuated. That is, the classic induced-compliance effect did not occur; subjects in the high-choice condition displayed no more attitude change than did those in a low-choice condition. This attenuation occurred despite the fact that the dissonance manipulation was clearly effective. Subjects who ingested a pill that was said to produce no side effects displayed the typical induced-compliance effect.

The attenuation of attitude change that Zanna and Cooper (1974) found to occur as a consequence of the misattribution of arousal to an external source has been conceptually replicated in other experimental investigations. Pittman (1975) found that the threat of shock in an upcoming experiment served as a cue that reduced the dissonance effect. Fazio *et al.* (1977) found misattribution to an aversive booth in which the subject was seated, and Gonzalez and Cooper (1976) found misattribution to new fluorescent lighting, to accomplish the same effect. In each of these experiments, the presence of the external source served to attenuate attitude change. The findings suggest that an arousal state follows the acceptance of responsibility for having produced an aversive event and that the arousal plays a mediating role in the attitude-change process.

More direct evidence that dissonance arousal is produced by induced compliance is provided by a study conducted by Cooper, Zanna, and Taves (1978). In the conditions that concern us at the moment, subjects advocated a counterat-

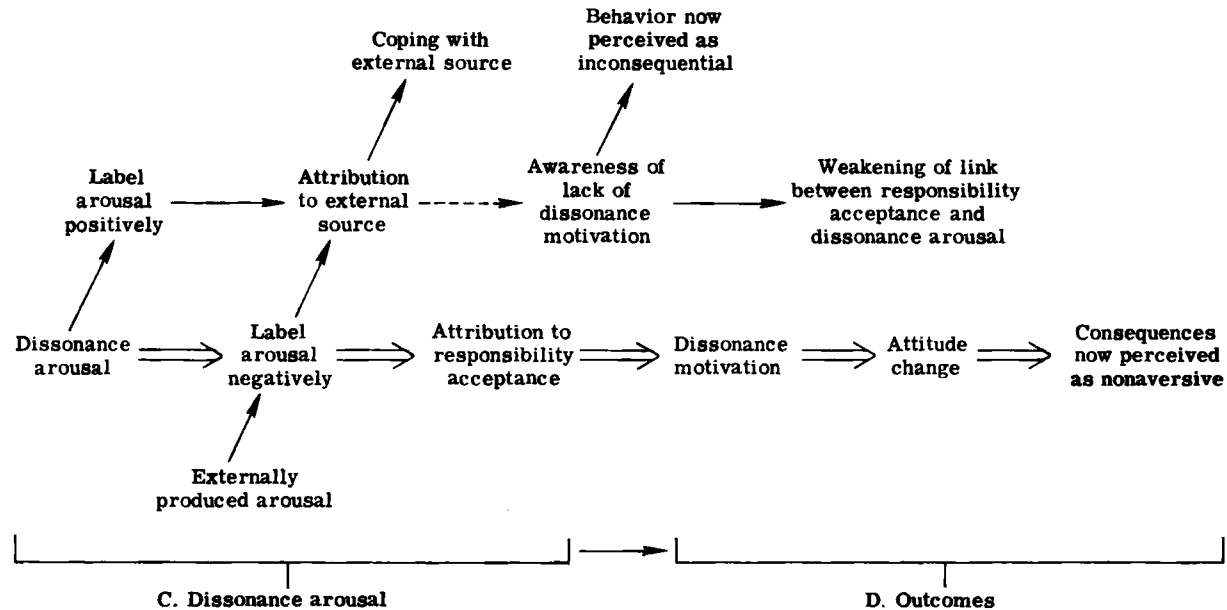


Fig. 2. The sequence of events leading from dissonance arousal to attitude change. The symbols are  $\Rightarrow$  dissonance path,  $\rightarrow$  alternative possibilities, and  $--\rightarrow$  tentative link.

titudinal position under conditions of high or low choice after ingesting either a placebo or phenolbarbital. (Phenolbarbital has the effect of tranquilizing the subject and inhibiting arousal.) Although the usual induced-compliance effect was found among those subjects given the placebo, neither the high-choice nor the low-choice subjects in the phenolbarbital condition displayed attitude change. Thus, drug-induced inhibition of dissonance arousal prevents the typical attitude-change process. Arousal, then, appears to be a necessary component of the attitude-change process following induced compliance.

## *2. Misattribution of External Arousal to Dissonance*

Just as one can mistakenly attribute arousal that is due to having freely produced an unwanted event to a potentially arousing external source, it is possible to confuse arousal that is actually due to an external source with dissonance. Attributing externally caused arousal to one's own counterattitudinal behavior is likely to increase the amount of dissonance motivation experienced and thus the amount of attitude change displayed.

In the study described earlier by Cooper, Zanna, and Taves (1978), two additional conditions were included in the design that bear on the additive nature of arousal. Some of the subjects advocated a counterattitudinal position under conditions of high or low choice after ingesting an amphetamine. Therefore, amphetamine arousal is combined with any dissonance arousal that may occur for the high-choice subjects. Having been led to believe that the drug was a placebo, these subjects apparently attributed their amphetamine arousal to the counterattitudinal advocacy (see Fig. 2). They changed their attitudes significantly more than any other group of subjects in the experiment.

Interestingly, the low-choice subjects who ingested amphetamines also exhibited significant attitude change. The arousal created by the drug apparently convinced subjects that they were responsible for the consequences of their counterattitudinal behavior, despite the fact that the experimenter did not permit them any decision freedom. Evidence for this interpretation is provided by data on the subjects' perception of their freedom to decline to perform the counterattitudinal behavior. Although the low-choice subjects in the other drug conditions accurately perceived their lack of decision freedom, those in the amphetamine condition reported feeling a high degree of choice. Thus, the arousal they experienced seems to have led them to conclude that they had been responsible for their action. Consequently, they experienced dissonance motivation and changed their attitudes. (Further evidence that arousal from some external source can be misattributed and can enhance dissonance motivation is provided by Worchel and Arnold, 1974, and Fazio and Martin, 1983).

To summarize, our answer to the question of whether responsibility for an aversive consequence produces a state of dissonance arousal must be a resound-

ing yes. We have reviewed evidence suggesting that dissonance arousal has general driveline energizing properties and that it is physiologically measurable. We have seen that attitude change can be attenuated by providing subjects with an opportunity to misattribute dissonance arousal to some external source. And we have seen that attitude change can be accentuated by the misattribution of externally produced arousal to one's own aversive consequence-producing behavior. Furthermore, when dissonance arousal is inhibited by a tranquilizing drug, the usual induced-compliance effects fail to occur.

## **VI. Arousal and Alternate Theoretical Approaches**

The evolution of any theory can, and often does, profit from the challenge of alternative approaches. Weaving alternative interpretations, finding proper domains and limits for each theory, and testing alternative predictions help a theory mature. By these criteria, dissonance is a mature theory indeed, for it has not been wanting for competing points of view. Fortunately, the identification of arousal properties following induced compliance has helped to distinguish dissonance from several alternative conceptual approaches. We single out two of the major alternatives to dissonance theory as explanations for attitude change in the induced-compliance situation.

### **A. SELF-PERCEPTION**

As we have seen earlier, induced-compliance research set off a flurry of criticism that focused on possible methodological artifacts in producing attitude change. The first major competitor to accept the basic data of induced compliance research but to offer a plausible alternative causal mechanism was Bem's (1965) model of self-perception. Utilizing concepts borrowed from behavior analysis, Bem distinguished between those behaviors that are under the control of environmental stimuli and those that are not. The former are called *mands* and the latter are *tacts*. Only *tacted* behaviors are considered descriptive of an individual's true state.

Suppose we were observing a participant in Festinger and Carlsmith's (1959) induced-compliance experiment. A \$20 inducement for telling a waiting subject that a task was interesting should render the behavior a *mand*. What conclusion would we draw about the actor's real attitude toward the task? We would assume that the behavior was forced by the environment and therefore tells us very little about the actor's true belief. On the other hand, the same behavior that was induced for a trivial sum (\$1) would render the actor's behav-

ior more of a tact. That behavior, then, would be useful in deducing that the actor's real attitude was consistent with the actor's behavior.

The novelty of Bem's (1965) approach is his assertion that both the observer and the participant would use the degree to which a behavior is under the control of the environment as a way of deducing the participant's attitude. Bem challenged dissonance theorists to demonstrate that involved participants are functioning as more than observers of their own behavior in deducing their attitudes. Bem (1965) conducted a series of demonstrations to show that the results of induced-compliance experiments could be replicated quite well by observers—people who are not actually in the experiment, who only read descriptions of the procedures, and who presumably do not experience any relevant internal state. A flurry of research (e.g., Jones, Linder, Kiesler, Zanna, & Brehm, 1968) and rejoinders (e.g., Bem, 1968) failed to find a convincing distinction between the two approaches. A series of supposedly critical tests between dissonance theory and self-perception theory on the role of the salience of participants' initial attitudes prior to the attitude-discrepant behavior yielded conflicting predictions, not to mention conflicting data (Ross & Schulman, 1973; Snyder & Ebbesen, 1972). Greenwald (1975) reviewed this literature and concluded that a critical test was not possible on this particular dimension (if on any).

The question of whether arousal exists following induced compliance is a crucial issue in the argument between the dissonance and the self-perception analyses. Finding that arousal accompanies counterattitudinal advocacy provides the evidence that attitude change can not be interpreted exclusively as a matter of self-perception (cf. Zanna & Cooper, 1976). Using the concept of arousal as an indicator of the presence of dissonance, Fazio *et al.* (1977) proposed that dissonance might account for attitude change when behavior is truly counterattitudinal, but that self-perception might play a role when behavior is only slightly discrepant from one's attitudes. The former is considered to occur when a behavior falls within a person's latitude of rejection, whereas the latter occurs when the behavior is within the latitude of acceptance. In a study designed to test this hypothesis, Fazio *et al.* (1977) found arousal to be present when behaviors are within the latitude of rejection but found no arousal when the behaviors are within the acceptable range. Abelson (1983) has referred to this finding as a "truce" between the dissonance and the self-perception points of view because the range of applicability of the two approaches has been more firmly established.

## B. IMPRESSION MANAGEMENT

Tedeschi, Schlenker, and Bonoma (1971) proposed the notion of impression management to account for the data of induced compliance. They reasoned that participants in any research want to appear to be worthy persons to others of

high status. Any attitude change that might exist in an induced-compliance experiment is said to be at the service of interpersonal appearances. It is not that people are trying to resolve unpleasant tension states. Rather, they try at all costs not to appear unworthy in the eyes of the experimenter. In induced-compliance experiments, for example, people do not want to look as though they would sell their souls for a paltry sum of money. So, they lie to the experimenter to convince him that they said what they did because it was consistent with their true beliefs.

The essence of Tedeschi *et al.*'s (1971) original impression-management approach is that a subject's mark on an attitude scale does not represent genuine attitude change. It is feigned purely for managing the impression that one is giving to the high-status experimenter. There is no dilemma of internal consistency, no state of arousal, and no resolution of an uncomfortable tension state. Unlike the self-perception theory, there is no effort to deduce one's genuine attitude from a consideration of the behavior. This analysis is an intriguing one and leads to some potentially testable propositions. Interpretation of the data from that research has been less than clear.

One of the propositions that Tedeschi *et al.* (1971) put forth is that attitude change would follow from induced compliance if and only if the experimenter who collects the attitudinal data also knows about the behavior (i.e., the essay writing or speech making) of the subject. Research designs in which the behavior of the subject is anonymous or in which there are two experimenters who are perceived to have no connection with each other should provide a test of the impression-management point of view. Such tests have been undertaken. In fact, Festinger and Carlsmith's (1959) original experiment utilized two separate experimenters. One requested and obtained the subject's agreement to engage in the counterattitudinal advocacy. A departmental secretary, supposedly asking questions after the conclusion of the experiment, assessed the subjects' attitudes toward the spool-turning task. Tedeschi and Rosenfeld (1981) explain such attitude change by contending that the "attitude scales could have served as cues to associate the measurement with the previous experimenter" (p. 167). Similarly, Hoyt, Henley, and Collins (1972) ran a study in which subjects' counterattitudinal essays were anonymous—that is, unsigned and supposedly untraceable. Attitude change consistent with dissonance predictions was obtained. In responding to these data, Gaes, Kalle, and Tedeschi (1978) suggested that subjects may have believed that the seats were coded with some form of identifier that would enable the investigator to decode the essays and find out who wrote what. With such tortuous logic, it is very difficult indeed to find a reasonable test that would support the notion that only feigned attitudes are involved in the induced-compliance paradigm.

An alternative approach to examining the process of attitude change in the induced-compliance paradigm is the use of the "bogus pipeline" as a dependent measure (Jones & Sigall, 1971). With a bogus pipeline, the participants are

convinced that the experimenter can accurately read their true, internal feelings with the use of an electronic device. In the impression management view, this should eliminate attitude change. With no possibility of fooling the experimenter, there is no utility in attitude change. Studies in this area in the past few years have provided mixed support (Reiss, Kalle, & Tedeschi, 1981; Gaes *et al.* 1978; Paulhus, 1982).

The first study that applied the bogus-pipeline procedure as a measure of dissonance-produced attitude change was conducted by Cooper (1971). In that study, which was described in detail earlier, the bogus-pipeline measure showed stronger support for the dissonance predictions than did the traditional paper-and-pencil measures. Gaes *et al.* (1978), on the other hand, did find that attitude change was eliminated using the bogus pipeline. Scheier and Carver (1980) suggested that Gaes *et al.* (1978) may have inadvertently focused subjects' attention on their initial attitudes, making them more resistant to change.

An experiment by Stults, Messe, and Kerr (1984) suggests yet another explanation for the Gaes *et al.* (1978) finding of no attitude change given the use of a bogus-pipeline procedure. These experimenters replicated the finding of less attitude change in a bogus-pipeline condition than in a condition involving a traditional attitude scale. However, in a second bogus-pipeline condition that provided for habituation to the apparatus, attitude change was obtained. Stults *et al.* (1984) suggest that, without the opportunity to get accustomed to the supposed physiological apparatus, subjects may interpret dissonance arousal as nervousness due to the novel hardware and hence not change their attitudes.

Like self-perception theory, impression management as originally proposed (Tedeschi *et al.*, 1971) requires no assumption of internal states, discomfort, or arousal. Consequently, the discovery of arousal might be construed as evidence inconsistent with the impression-management approach. However, there has appeared a "revisionist impression management theory" (Tedeschi & Rosenfeld, 1981). An essential difference between the old and new versions is the central role now played by a concept called social anxiety. The experience of the state of social anxiety is what occurs when a high-status experimenter may hold the participant blameworthy for an action that has produced an embarrassing or unwanted consequence. Tedeschi and Rosenfeld assert that the degree of attitude change following induced compliance is "directly related to the degree of embarrassment or social anxiety experienced by subjects" (p. 156). The assertion that an individual is aroused as a consequence of having freely brought about an aversive event makes it very difficult to find many lingering points of contrast between impression management and dissonance.

Nonetheless, it is important to note that some research on dissonance has revealed attitude change that is difficult to interpret as feigned in any manner. Some research has found evidence not only of attitude change but also of behavioral change weeks after the dissonance manipulation. For example, Staw (1974) investigated the attitudes and behavior of students who had committed them-



selves to Reserve Officer Training Corps just prior to the institution of the draft lottery system. Those who subsequently received high lottery numbers (naturally-occurring random assignment to a high-dissonance condition) found themselves committed to ROTC with little external justification. They subsequently indicated more satisfaction with ROTC than did those students who received low lottery numbers. Furthermore, those with high lottery numbers actually performed better and received higher grades in their military science courses the next semester than did those with low numbers. It is difficult to understand how such behavioral change could have occurred except through actual internalized, rather than feigned, attitude change.

A modified view of impression management that does not rely upon the notion of feigned attitude has been proposed by Schlenker (1982). The basis of this approach is that people's major concern is to protect a positive view of their identity. When faced with the possibility of being responsible for reprehensible events, they undertake a variety of accounts and explanations to excuse their behavior. Attitude change is one such excuse and is at the service of identity protection. The concern of subjects in Schlenker's view is not all that dissimilar from the subjects' dilemma according to our dissonance analysis. In both instances, people are concerned with being responsible for behavior that has produced aversive consequences. From the dissonance perspective, the motivation to change attitudes as a result of accepting responsibility emanates from the arousal of a tension state. From Schlenker's version of impression management, the motivation arises from wanting to protect one's positively valued identity to others and to oneself.

Schlenker's (1982) version of impression management places the participant in a different perspective from the original impression-management view. It does not see the participant as necessarily feigning attitude change in order to impress an experimenter. There is no assumption that attitude change is merely a Machiavellian public demonstration of an attitude that bears little relationship to one's private belief. On the contrary, Schlenker's identity approach acknowledges that attitude change following counterattitudinal advocacy may indeed be genuine. As such, Schlenker's view bears a close resemblance to the earlier self-esteem versions of dissonance theory.

We do not doubt at all that subjects are concerned with the impression that they are having on other subjects, the experimenter, and any other participant in the interpersonal sphere. What has been at issue in the controversy between the two approaches is whether the management of impressions is the *only* phenomenon that transpires in induced-compliance studies or whether the bringing about of aversive consequences creates an unpleasant tension that, in turn, motivates attitude change (cf. Paulhus, 1982). In their review of the attitude-change literature, Cialdini, Petty, and Cacioppo (1981) conclude, "We cannot agree with the claim that self-presentational influences are the sole mediators of the compliance effects" (p. 382).

## VII. Dissonance Arousal: A General or an Aversive State?

Given that dissonance arousal occurs following the acceptance of responsibility for an unwanted event, what sort of arousal state is it? Is the dissonance arousal specifically aversive or is it a general and undifferentiated state? The research described to this point does not address this issue. That dissonance arousal can be misattributed or that it has energizing properties is consistent with either viewpoint.

A set of studies have attempted to answer this question, however. The issue was first addressed by Zanna, Higgins, and Taves (1976), who employed the misattribution paradigm to explore whether dissonance arousal is capable of misattribution only to negative labels. The design of the study is largely a replication of the original Zanna and Cooper (1974) study with the addition of a condition in which subjects were led to believe that a pill they were taking produces side-effect feelings of "pleasant excitement". The interesting comparison concerns the degree of attitude change in the pleasant excitement relative to change among the group of subjects who were told that the pill would make them feel "tense". Both the "tense" and "pleasant excitement" labels imply arousal, but the two labels differ in their aversiveness. Zanna *et al.* (1976) reasoned that the tense label, and not the pleasant excitement one, should mitigate attitude change if dissonance arousal is uniquely aversive. If the arousal is a more general state, then both labels should mitigate attitude change. The findings are consistent with the view that dissonance arousal is aversive. Subjects in the tense condition did not change their attitudes, whereas those in the pleasant excitement condition did.

Although the Zanna *et al.* (1976) data are consistent with the view that dissonance is specifically aversive, the data do not exclude, as Cooper, Fazio, and Rhodewalt (1978) have pointed out, an interpretation that is consistent with the notion that dissonance involves a more malleable and general heightened state of arousal. Could not the subjects in the Zanna *et al.* study have experienced a heightened state of arousal that they subsequently labeled as negative? Recall that subjects believed that they were taking an experimental pill, one which was still being tested and which potentially produced side effects. Thus, there exists a strong situational cue for the subject to label any general arousal experienced as a negative emotion. Only in the pleasant excitement condition, does the subject have any indication that the pill may not be responsible for the negative feelings experienced. Having labeled the arousal as negative, subjects may be searching specifically for a source of negative arousal. Thus, only the tense pill could serve as a misattribution stimulus.

This explanation can also account for the findings in a study by Higgins,

Rhodewalt, and Zanna (1979). Using the now familiar "pill paradigm," the investigators examined four different side-effect labels arranged in a 2 (arousal–nonarousal) by 2 (pleasant–unpleasant) factorial design. The labels employed were "pleasantly excited", "tense", "relaxed", and "unpleasantly sedated." From the results, which indicated an attenuation of attitude change in the two unpleasant conditions, the authors inferred that discomfort, and not arousal *per se*, is the critical component of the dissonant state. Although we say more about this conclusion at a later point, it should be clear that subjects may have experienced a general state of arousal, interpreted that arousal as discomfort, and then misattributed their unpleasantness only in those conditions in which the pill was said to produce feelings of discomfort.

The extent to which arousal states are malleable in terms of the labeling they permit has been questioned (e.g., Berkowitz, 1978; Cotton, 1981; Marshall & Zimbardo, 1979; Maslach, 1979). However, it appears that the "pill paradigm" may not be a feasible approach to the investigation of the issue of whether dissonance arousal is a general or an aversive state. Cooper, Fazio, and Rhodewalt (1978) employed a different procedure to investigate whether dissonance arousal is a sufficiently labile state that it can be interpreted as a positive emotion (see also Drachman & Worchel, 1976). Subjects were committed to counterattitudinal advocacy under conditions of high or low choice. All subjects then observed a humorous cartoon. Schachter and Wheeler (1962) have demonstrated that increasing a subject's arousal level by an injection of epinephrine increases the degree to which the subject is amused by a humorous film. Cooper, Fazio, and Rhodewalt (1978) reasoned that the same outcome should occur if one is aroused by having freely chosen to behave counterattitudinally—provided that dissonance arousal is sufficiently general that it can be interpreted positively. The investigators manipulated the timing of the cartoon presentation. For half the subjects the cartoon was presented immediately following the counterattitudinal commitment; and hence, the cartoon could serve as a misattribution stimulus. For the other subjects, the cartoon was not presented until the subjects had completed a postcommitment attitude measure and, hence, was not available as a cue for interpreting the arousal state. This order manipulation was found to affect greatly the attitude and humor ratings of the high-choice subjects (those subjects who theoretically experience arousal). Those who were presented with the cartoon prior to the attitude measure tended to find the film relatively funnier and to change their attitudes less. Those who were presented with the attitude measure first tended to change their attitudes relatively more and to find the cartoon less funny. As expected, however, the order manipulation had no significant effect upon the low-choice subjects.

The suggestion that dissonance arousal is a highly malleable state is also supported by a study by Rhodewalt and Comer (1979). Subjects performed an induced-compliance task under conditions of high choice. Prior to the actual

counterattitudinal commitment, electrodes were attached to the subject's face ostensibly in order to record various physiological data. Allegedly so as to improve the quality of the recordings, the subject's face was positioned so as to form a smile or a frown or was not positioned at all. This latter group of subjects displayed the typical induced-compliance effect of attitude change. In the other conditions, however, the smile or frown apparently served as a cue to the subject that aided him in labeling his dissonance arousal. The subjects who were frowning displayed significantly more attitude change than any other group in the experiment. The frowning facial expression apparently provided a cue, stronger than any cue in the control condition, that the arousal was unpleasant. Smiling subjects, on the other hand, did not change their attitudes at all. Their facial expression apparently led them to interpret their arousal positively (and in fact, they reported feeling happier than did other subjects on a mood measure) and, consequently, they experienced no aversive pressure to alter their attitudes.

From the data from the just described two studies, it appears that dissonance arousal is sufficiently general and malleable that it can be interpreted as a positive emotion. There appears to be no need to postulate that it is intrinsically aversive, although it typically may lead to negative affect.

### **VIII. Dissonance Arousal versus Dissonance Motivation**

Figure 2 presents a flow diagram of the steps leading from dissonance arousal to final attitude change. Dissonance arousal, we would suggest, is a general and undifferentiated state of arousal. If it is labeled positively and attributed to an external source of positive arousal, then dissonance motivation, that is, aversive pressure to change one's attitude, does not occur. Nor does dissonance motivation occur if the arousal is interpreted negatively and attributed to some external source. In these two cases, the individual has succeeded in transforming that arousal into one typically produced by that external agent, for example, a humorous reaction to a cartoon or anger toward an insulting party. If the emotional experience is unpleasant, the individual may attempt to cope with the emotion in a manner appropriate to that external agent. He might allow sufficient time to elapse for the effects of a pill to dissipate, he might decide to leave an aversive environment, or in the case of misattribution to another person who has insulted him, he might engage in some aggressive behavior.

Dissonance motivation only occurs when the individual labels his state of arousal negatively and attributes that arousal to his having freely produced an aversive consequence. It is in this case that dissonance motivation, as Festinger (1957) described it, occurs. The individual experiences an aversive state which he should desire to reduce.

The reader should have noted by now that we draw a distinction between what we term dissonance arousal and dissonance motivation. To review this distinction, *dissonance arousal* refers to the general heightened arousal that is presumed to follow the acceptance of responsibility for an unwanted event. This arousal is open to varied interpretations. The individual searches the environment to determine the nature of the emotion and its cause. Given that the arousal is interpreted to be discomfort due to the acceptance of responsibility for an aversive consequence, *dissonance motivation*, that is, aversive pressure to change one's attitude, occurs.

The Higgins *et al.* (1979) study described earlier in the section "Dissonance Arousal: General or Aversive State?" is relevant to this distinction. Recall that the experimental results displayed an attenuation of attitude change when a pill that the subjects ingested was described as producing feelings of tension or of unpleasant sedation, but not when it was described as producing pleasant excitement or relaxation. On the basis of these findings the authors suggest that "attitude change following counterattitudinal behavior is motivated by the unpleasantness of the dissonant state, and that arousal per se is irrelevant. Thus it would appear that arousal is not even a necessary component of the *motivation* to reduce dissonance; the unpleasantness of the dissonance state is sufficient" (p. 28, *italics ours*). In light of the data, we can concur with the statement that attitude change is motivated not so much by arousal as by the feeling of discomfort. That is, subjects may experience and consider what we call dissonance motivation primarily as a state of unpleasantness. However, it is important to note that this state of discomfort is preceded by a state of undifferentiated arousal and that this dissonance arousal is a necessary component of dissonance motivation. Some arousal must occur to provoke any labeling of the state as unpleasant. Evidence for the occurrence of dissonance arousal is provided by the research on the energizing properties of dissonance and by the research on direct physiological assessment. Once dissonance arousal is present and is interpreted in the manner we have suggested, dissonance motivation can occur. Subjects experiencing dissonance motivation may, as Higgins *et al.* suggest, change their attitudes largely because of the unpleasantness of the state, but the arousal and a particular interpretation of that arousal are necessary to create dissonance motivation.

### 1. *Alternatives to Attitude Change*

It has been our intent to specify the course of events that lead to attitude change via a dissonance process. In fact, Fig. 1 and Fig. 2 together summarize our characterization of the sequence. The main or "dissonance path" displays the steps that are necessary for attitude change to occur. Once dissonance motivation is experienced, attitude change constitutes a means of handling the discomfort one is experiencing over having been personally responsible for the

production of an aversive consequence. In effect, attitude change serves to modify one's perception of the consequences in the direction of viewing them as not that aversive after all.

What if such attitude change were essentially not available as a means of dealing with the dissonance motivation? It is quite easy to imagine attitudes that are so central to one's system of beliefs and values and to one's self-identity that attitude change is not a viable option. One possibility is that the individual will review the course of events that led up to the experience of dissonance motivation and conceivably "discover" that an "error" had been made at some previous step. For example, one might review one's assessment of the arousal state that is being experienced and come to the conclusion that it is some emotional reaction other than dissonance motivation. Such appears to have been the case in an experiment conducted by Cooper and Mackie (1983). Student members of a campus group supporting the 1980 presidential election of Ronald Reagan freely complied with a request to write pro-Carter arguments. Yet, given that their attitudes so clearly defined their group membership, these subjects could not very well change their attitudes toward the candidates. Instead, these subjects seem to have misattributed their arousal to the existence of rival out-groups supporting Carter, as evidenced by their enhanced derogation of such out-group members.

Gonzalez and Cooper (1976) observed a similar phenomenon among members of Princeton eating clubs who had freely agreed to write an essay supporting the abolition of such clubs. Although nonmembers displayed the typical induced-compliance effect after performing the behavior under conditions of high versus low choice, the eating club members did not. Clearly, a change in attitude toward the clubs was very difficult for these latter individuals. After they completed the attitude scale and just before they left the experimental room, the experimenter provided the subjects with a possible alternative explanation for their discomfort. He implied that the new fluorescent lighting in the room had been making some people feel uneasy and asked subjects to indicate whether they had found the lights bothersome. Sure enough, the eating club members seized upon this opportunity to make an external attribution for their discomfort. High-choice subjects who were eating club members rated the lights as more aversive than did any other group of subjects.

Alternatively, individuals for whom attitude change is not a viable option might review their assessment of the consequences that were presumably made possible by the behavior. Such reassessment might lead to the distorted conclusion that the consequences can be viewed as trivial or nonexistent. The essay, speech, or whatever might be perceived as very weak and unconvincing and, hence, unlikely to produce or to have produced any aversive consequence. A recent series of experiments by Scheier and Carver (1980) found evidence for this possibility among subjects for whom initial attitudes were very salient either

because of their status with respect to an individual difference measure (high private self-consciousness) or because of a manipulation that presumably increased attention to the self (the presence of a mirror). Rather than change their attitudes, these subjects came to perceive the counterattitudinal essays that they had written as relatively weak, when in actuality the essays were objectively no different in quality from essays written by control subjects.

In each of the cases just discussed, there exists the suggestion that individuals may reassess their behavior, its consequences, their personal responsibility, or their feeling state when they find attitude change to be an unproductive manner with which to cope with dissonance motivation. Yet another possibility exists. It is conceivable that there can be no denying that one did produce an aversive consequence and that one is upset over having done so. In such a situation, individuals may attempt to make amends for their transgression. Either behaviorally or cognitively, they may try to reaffirm or bolster their initial attitude. The results of a study by Sherman and Gorkin (1980) provide evidence of such attitude bolstering. In the critical condition, profeminist subjects failed to solve a difficult logic problem concerning sex roles and, in so doing, displayed stereotypic sexist behavior. Because the sexist behavior was clearly self-generated, a high degree of personal responsibility was involved. Furthermore, such sexist action implied the potential for future aversive consequences by suggesting that sexism is so pervasive and subtle that even the confirmed feminist can fall prone to its influence. Finally, there was no way that the subject could deny the evidence of having exhibited sexist thought. How then did the subjects deal with this situation? When given the opportunity to reaffirm their feminist attitudes, they did so. In an ostensibly separate experiment, the subjects considered a simulated sex discrimination court case and expressed decisions about the appropriate verdict. Subjects who failed the sex-role problem were more favorable toward the female plaintiff than control subjects. Furthermore, this enhanced vigilance with regard to sex discrimination was particularly evident on the part of those subjects who were initially extremely supportive of feminism as opposed to those who were only mildly feminist. Because their stance with regard to feminism was so extreme and the issue so important to them, the former subjects especially could not very well modify their opinions of sexism. Instead, they sought to make amends for their sexist behavior and to reaffirm their original attitudes.

What we seem to see evidence of in all the described research is what may be characterized as some form of a "gate-keeping" function. If the critical attitude is so highly central or salient that changing the attitude would be problematic, individuals appear to arrive at other ways of coping with the dissonance motivation. They may reassess the events that led them to experience dissonance motivation in a distorted fashion, or they may acknowledge their transgression and strive to make amends. Attitude change following dissonance motivation is

not a sure thing. Nevertheless, dissonance motivation and the various intervening steps are necessary if the occurrence of an aversive consequence is to have any possibility of affecting the attitude in question.

### IX. Some Concluding Thoughts

We have seen that dissonance motivation and, hence, attitude change are apt to follow an attribution of dissonance arousal to one's own behavior. We have also suggested that if dissonance arousal is misattributed to some external source, a person may attempt to cope with that external agent in some appropriate manner. But, given the misattribution of dissonance arousal, does the person attend at all to the cognitions that prompted the arousal process? No data relevant to this question have yet been collected. The issue appears important enough, however (see Ronis & Greenwald, 1979; Fazio, Zanna, & Cooper, 1979), to warrant a few speculative thoughts.

An individual who has misattributed his dissonance arousal does not experience the state that usually follows from having freely produced an aversive event. Although dissonance motivation usually follows from such behavior, it did not occur in this case. Whether the individual attends to his earlier acceptance of responsibility would appear to depend upon the extent to which that person is aware of this lack of dissonance motivation. (We have indicated the tentative nature of this notion by a dotted line in our flow chart of the dissonance process in Fig. 2.) If the individual realizes that what he usually experiences after behavior of the sort he performed (a feeling of discomfort) did not occur in this particular instance, then he may modify his perception of the consequences of his counterattitudinal action. If he does not feel uncomfortable about having produced this consequence, then it is likely that the consequence was not very severe.

For example, in the typical induced-compliance study, a subject writes a counterattitudinal essay that is to be employed in a future attitude change study or is to be shown to some officials or organization. Consequently, the subject's essay may convince some people or an organization to adopt a position that the individual him- or herself opposes. If dissonance motivation occurs, the individual may consider his or her lack of dissonance motivation as a signal, say, that the probability of the essay actually convincing someone and producing that unwanted state of affairs is very minimal. In other words, the perception of the consequences of the subject's action might be altered by the awareness that he or she does not feel upset about the behavior.

Misattribution may bring about yet another effect. We have argued that an individual learns early in life an association between personally producing nega-



tive effects and dissonance arousal. This learned arousal state eventually develops to the point that it occurs whenever the individual feels responsible for a negative consequence. Furthermore, interpretation of that arousal state usually leads the subject to feel discomfort over his behavior. Because the discomfort does not occur in an instance of misattribution, the association between responsibility acceptance and dissonance arousal may be weakened. If misattribution were to occur frequently enough, the association may decay to the point that the individual may not experience dissonance arousal following freely performed counterattitudinal behavior. One wonders whether a subject who is led to misattribute dissonance arousal in each of a succeeding number of induced-compliance situations would exhibit any attitude change in a later situation in which no misattribution opportunity is provided.

Unfortunately, there are no data to ascertain the adequacy of these speculations. Nevertheless, it is encouraging to note that our view of the dissonance process suggests some new directions for future research. We find our theoretical proposal (and our speculations) provocative and hope that this review will prompt additional research on dissonance processes.

### *1. Summary: A Look at the Past and the Future*

Dissonance theory has come a long way since 1957. The view that people are driven by logical inconsistency has changed. The changes in emphasis stand as a case study in the evolution of a theory (Greenwald & Ronis, 1978). An original theory sets the directions and foci for inquiry. Some of what Festinger wrote in 1957 remains; some has been modified. New postulates have replaced or altered older ones. But in the accumulation of data, the theory has evolved.

In the present chapter, we speculate that attitude change is a consequence of a multifaceted process that includes both the concept of dissonance arousal and of dissonance motivation. Both processes require a complex set of attributions. Dissonance arousal is facilitated by attributions about consequences and responsibility. Attributions about the valence and the causes of the arousal may lead to dissonance motivation. Such mediating steps were not envisioned in 1957. Yet, they represent theoretical postulates necessitated by the accumulation of data. At the same time, the central concepts of motivation and arousal still lie at the heart of the dissonance process. The original theory pointed to general directions—directions that are still bearing fruit in terms of our understanding of attitude-change phenomena and our understanding of basic motivational processes. Whether one views the present formulation as such a profound shift from the original theory as to necessitate considering the original disproved (and, in turn, the present in need of a new name) appears inconsequential.

It would have been naive to believe that Festinger's original statement of dissonance would capture all of the nuances of what more than a quarter century

of empirical data has shown us is a complex process. Likewise, it would be naive of us to believe that our modified formulation of dissonance motivation will account for all of the data to come. Yet as we have seen, it does point to some new directions for research.

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