

# Vicarious Dissonance: Attitude Change From the Inconsistency of Others

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Three studies support the vicarious dissonance hypothesis that individuals change their attitudes when witnessing members of important groups engage in inconsistent behavior. Study 1, in which participants observed an actor in an induced-compliance paradigm, documented that students who identified with their college supported an issue more after hearing an ingroup member make a counterattitudinal speech in favor of that issue. In Study 2, vicarious dissonance occurred even when participants did not hear a speech, and attitude change was highest when the speaker was known to disagree with the issue. Study 3 showed that speaker choice and aversive consequences moderated vicarious dissonance, and demonstrated that vicarious discomfort—the discomfort observers imagine feeling if in an actor's place—was attenuated after participants expressed their revised attitudes.

Imagine overhearing one of your favorite colleagues at a conference as she praises a new measure, though you have often heard her deriding it in private as both faddish and flawed. You soon realize she is addressing the designer of the new scale, a rather unfriendly fellow of little stature in the field. Although you understand that his presence may be a factor in her taking this position, you are still surprised, given her earlier opposition, that she would be so forthcoming with compliments for the measure. You cannot help but think how uncomfortable you would be in her shoes if caught engaging in such inconsistent behavior. Fifty years of social psychological research suggest that your colleague may actually become more enamored of the new paradigm as a result of her inconsistent behavior, changing her attitude to be consonant with this behavior (Festinger, 1957; for a review, see Harmon-Jones & Mills, 1999). What would be the impact on you, the observer? You are unlikely to be unmoved, given that you share both a professional and personal bond with this speaker. We suggest that witnesses to this kind of discrepant behavior may experience “vicarious dissonance,” a type of vicarious discomfort

resulting from imagining oneself in the speaker's position, leading to efforts to restore consonance in ways that mirror the efforts of actors: In our example, you may also become more supportive of the new measure.

Cognitive dissonance<sup>1</sup> refers to a state of discomfort that results from holding incompatible cognitions, such as smoking while aware of the negative consequences (Festinger, 1957). Though there are now several empirically established routes for dissonance reduction, one of the most widely studied has been to change one of the dissonant elements to achieve consonance. In a typical dissonance paradigm (e.g., Festinger & Carlsmith, 1959), participants are induced to engage in behavior at odds with their private attitudes, then change their attitudes in the direction of that behavior to reconcile their beliefs with their behavior. Early empirical demonstrations of dissonance were particularly memorable because participants were skillfully induced to engage in counterattitudinal behavior; having performed that behavior, and finding themselves unable to undo it, participants changed what they could control—their attitudes—to reduce dissonance. Vicarious dissonance relies on this mode of dissonance reduction as well, but with a further constraint. As with their own past behavior, people are powerless to alter the past behavior of others; in addition, however, people are frequently unable to influence the attitudes of others. Given these limitations, the clearest mode of dissonance reduction for the observer, as in the earliest dissonance paradigms, is to change what one can control—one's own attitude—to reduce the dissonance induced by another's behavior.

It may seem counterintuitive that one could resolve the problematic behavior of others by changing one's own attitude; any other outcome, however, is less desirable. Returning to the opening example, if the observer assumes that his colleague does not change her attitude as a result of her inconsistent behavior, his colleague has behaved hypocritically, whereas if he assumes that

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<sup>1</sup> We refer to cognitive dissonance as “personal dissonance” in the article for purposes of clarity.

she does change her attitude—but does not change his as well—the actor and observer are now at odds. Each scenario violates an important function of group membership; the former violates the need for groups to reflect positively on their members, and the latter violates the need for groups to confirm attitudes. If the observer changes his own attitude, however, the outcome becomes more favorable. Indeed, given that the actor will most likely undergo a shift in attitude as a result of her behavior, changing one's own attitude may allow one to adjust one's attitude to match that of an important group member. Changing one's own attitude paradoxically may be the most effective means of coping with the inconsistency of others.

How is this vicarious dissonance experienced? As with personal dissonance, we assume that it results in an aversive psychological state that individuals are motivated to reduce. The negative arousal presumed to result from personal dissonance has been demonstrated using physiological measures (e.g., Croyle & Cooper, 1983; Harmon-Jones, Brehm, Greenberg, Simon, & Nelson, 1996; Losch & Cacioppo, 1990) and misattribution paradigms (e.g., Zanna & Cooper, 1974), and more recently has been captured as psychological discomfort (Devine, Tauer, Barron, Elliot, & Vance, 1999; Elliot & Devine, 1994). The above investigations, of course, explored the discomfort felt by actors as a result of their own inconsistency. It is possible that the counterattitudinal behavior of others elicits not personal discomfort but a kind of discomfort unique to the observer, an imagined discomfort experienced on witnessing the plight of another. Indeed, because observers do not actually engage in behavior themselves, we might expect their discomfort to be vicarious in nature, based on their assessment of how they themselves would feel if placed in a similar situation.

### Dissonance and the Social Group

Several researchers have pointed to the possible impact of social settings on the experience of dissonance (see Cooper & Stone, 2000, for a review). In an early exploration of dissonance in groups, Festinger, Riecken, and Schachter (1956) demonstrated that seeking social support was an effective means of dissonance reduction after a doomsday group's dire predictions were shown to be invalid. Zanna and Sande (1987) varied whether participants engaged in counterattitudinal behavior on their own or in groups, and obtained results suggesting that dissonance can be experienced in groups, though some individuals diffused responsibility in group settings and thus did not experience dissonance. Most relevant to this investigation, Sakai (1999) showed that students who tacitly agreed to go along with a confederate deceiving a naïve subject into believing that a boring task was interesting subsequently rated the task as more interesting than did participants who only observed the interaction. We wish to study a situation similar in surface features, but quite distinct in substance. Whereas individuals in the above investigations were implicitly or explicitly responsible for the dissonance-inducing behavior, a factor that is well known to induce dissonance in the individual (Cooper, 1971), our interest lies in the case where participants feel guilty by association, where they merely witness someone with whom they identify engage in counterattitudinal behavior, and are unable to alter that person's behavior.

### Vicarious Experience and Identification

Not all actor–observer pairings are equally likely to give rise to vicarious experience; such experiences are frequently moderated by the relationship between the actor and the observer, as noted by Heider (1958, p. 282), who wrote that such experiences are “more likely to arise in connection with a liked or admired person.” Examples of the moderating impact of such relationships abound; for example, people feel more distress at a similar other's pain (Krebs, 1975), are more likely to “catch” happiness from people whom they like (Howard & Gengler, 2001), and are more likely to experience embarrassment at another's plight when they have formed a bond with that person (R. S. Miller, 1987). In addition to these interpersonal factors, group status can impact vicarious experience, as when people bask in the reflected glory of their sports teams, a phenomenon with both psychological and physiological consequences (Bernhardt, Dabbs, Fielden, & Lutter, 1998; Cialdini et al., 1976). In sum, feeling the pain—and joy—of those with whom we identify is a common experience.

Psychologists thus have explored why and when the experiences of others impact individuals at both the dyadic and group level, and most have concluded that a sense of shared identity plays an important role. Investigators of close relationships, for example, have documented how significant others come to be included in the self-concept (Aron, Aron, Tudor, & Nelson, 1991). At the group level, self-categorization processes assimilate the self and fellow group members to an ingroup prototype (Hogg, 2001; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987): Ingroups thus become part of the self, as individuals' personality traits (Smith & Henry, 1996) and attitudes (Coats, Smith, Claypool, & Banner, 2000) typically show significant overlap with those of ingroups. In addition, just as attitudes become more similar to those of one's significant other over time (J. L. Davis & Rusbult, 2001), attitudes assimilate to group standards (Turner, 1991), and this assimilation is moderated by the extent to which people identify with a particular group (Hogg & Hardie, 1991; Terry & Hogg, 1996). More generally, the degree to which a group is important to us and central to our self-concept influences the impact this group will have on our attitudes and behavior (Tajfel, 1981; Tajfel & Turner, 1979). When social identity is made salient, group identification both influences individuals' reactions to the group as a whole and impacts individuals' reactions to particular ingroup members. If an observer's identification with a group is strong enough, witnessing a group member engage in counterattitudinal behavior might be enough to induce discomfort vicariously, leading to attitude change as a means of reducing that discomfort. In short, the greater the bond an individual has with a group, the greater that individual's vicarious dissonance.

### Overview of the Experiments

In this research, in extending dissonance beyond the individual, we seek to test the hypothesis that witnessing members of personally important groups engage in counterattitudinal behavior induces vicarious dissonance in observers, which in turn motivates attitude change. In Study 1, we demonstrate attitude change following vicarious dissonance and verify our prediction that the phenomenon relies on ingroup identification. In Study 2, we distinguish vicarious dissonance from two other phenomena: attitude change due to group-based persuasion, by showing that vicarious

dissonance occurs only when ingroup speakers engage in attitude-inconsistent behavior; and attitude change due to message-based information processing, by showing that the speaker's agreeing to engage in a counterattitudinal speech, and not the actual speech itself, is sufficient to produce vicarious dissonance. Study 3 shows that two factors important in personal dissonance, the level of choice of the actor and the presence of aversive consequences, also moderate vicarious dissonance. In all three studies, we explore the role of psychological discomfort in vicarious dissonance.

### Study 1

Study 1 was designed both to provide an initial demonstration of the phenomenon and to show that vicarious dissonance occurs only for those who identify with an ingroup. In an effort to parallel earlier dissonance research, we designed a paradigm in which participants listened to speakers engage in counterattitudinal behavior in a classic induced compliance paradigm. Under the guise of research exploring "linguistic subcultures," participants listened to prerecorded interactions between an experimenter and a speaker (actually a confederate) in which the speaker disagreed with an issue (advocating a tuition increase for the upcoming school year) but then agreed to make a speech in favor of that issue. We predicted that participants who were highly identified with their ingroup would change their attitudes when they heard an ingroup—as compared with an outgroup—member first disagree with an issue and then agree to make a speech in favor of that issue. We also included a manipulation of choice, and predicted that vicarious dissonance would occur only when such counterattitudinal behavior was performed under conditions of high choice (Linder, Cooper, & Jones, 1967). The design was thus a 2 (ingroup/outgroup)  $\times$  2 (high/low choice), with group identification a continuous variable.

### Method

#### Participants

Fifty freshmen and sophomores at Princeton University, who disagreed strongly with a tuition increase in a mass pretesting session conducted earlier in the semester (answering with a 4 or lower on a 15-point scale), and who had never taken part in a psychological experiment before (to reduce suspicion), took part in Study 1 for experimental credit or payment. Participants were run in same-sex dyads.

#### Procedure

Participants were instructed to show up on two different floors of the building, and the second participant was only escorted to his or her room after the first participant was already working on the premanipulation questionnaire. These precautions were taken to make sure participants would not recognize each other, because we wanted the speaker to be seen as a generic group member and not as a specific individual.

After participants had been seated in the experiment room, the experimenter explained that he was studying linguistic subcultures, using residential colleges at Princeton to explore whether the mere fact of living together might cause unique speech patterns to develop. We stressed these potential differences between groups to make group concerns salient (Turner et al., 1987). Participants were always told that the other person had been randomly assigned to record a speech and that they would be listening to and answering questions about that person's speech patterns, and were further told that they would not have to make a speech themselves. They were told that speakers knew that other students were rating

their tapes, and were then informed that the speaker was either from their *ingroup* (same residential college) or *outgroup* (different residential college). Students are randomly assigned to a residential college at matriculation and live there for their first 2 years, providing us with randomly assigned yet relatively inflexible groups.

Our cover story was corroborated by having a tape recorder and microphone on the table in each of the two experimental rooms. To increase interpersonal involvement, the experimenter also briefly flicked the light off, enabling the participant to distinguish the other participant in an adjacent room through two one-way mirrors. Participants could determine the purported speaker's gender, but could not recognize him or her. The experimenter asked participants to fill out questionnaires for other researchers while he left ostensibly to record the tape with the other participant, and handed participants the premanipulation questionnaire. A few minutes later, he returned with a tape that he played for the participant. Participants listened to a taped interaction between the speaker and experimenter followed by a speech, and then completed the postmanipulation questionnaire.

#### Materials

*Premanipulation questionnaire.* This packet included our measure of participants' identification with their residential college, in the midst of a number of unrelated studies for other experimenters. The identification scale we used, adapted from Hogg, Cooper-Shaw, and Holzworth (1993), consisted of nine items (e.g., *How typical a member of your residential college do you think you are?*), rated on 7-point scales, which were averaged to create a composite score (Cronbach's  $\alpha = .89$ ,  $M = 4.60$ ,  $SD = 1.06$ ).

*Tape.* Tapes were prepared with male and female actors, following a scripted interaction reflective of an induced compliance paradigm. On the tape, the experimenter informed the speaker that he was combining two projects, the linguistic subcultures project and a project (funded by the Dean's Office) gathering student opinions on a variety of campus topics. The experimenter explained that the Dean needed students to make speeches in favor of a tuition increase so that the Dean could use the arguments generated to justify any increase, which served to instantiate aversive consequences (Cooper & Fazio, 1984). The experimenter asked the speaker for his or her attitude on this issue, and he or she expressed opposition (Q: "Just so we know, how would you feel about this?" A: "Well... I'd be against it!"). We then manipulated the choice given to the speaker. In the *high choice* condition, the experimenter told the speaker that he or she was free to leave if he or she did not want to make the speech and would still receive credit for the experiment, whereas in the *low choice* condition, the experimenter simply told the speaker to make the speech. In all conditions, this interaction was followed, after a break in the tape allegedly reflecting preparation time, by the same brief and intentionally bland speech, in which the speaker stated that higher tuition was necessary to hire good faculty and maintain modern facilities for students.

*Postmanipulation questionnaire.* Participants first indicated their attitude toward a tuition increase (on a 15-point scale). They then reported their current affective state, using items based on Elliot and Devine (1994). Participants rated each item on a scale ranging from 1 (*does not apply at all*) to 7 (*applies very much*), which were averaged into three composite measures of affect. We combined five items (*happy, good, optimistic, friendly, and energetic*, Cronbach's  $\alpha = .91$ ) into a composite score of positive personal affect. We also created two composite measures of discomfort (see Elliot & Devine, 1994), one which measured global psychological discomfort (*uncomfortable, uneasy, and bothered*, Cronbach's  $\alpha = .77$ ), and one which assessed self-directed negative affect, or what Elliot and Devine (1994) term "NEGSELF" (*angry with myself, dissatisfied with myself, disgusted with myself, and annoyed with myself*, Cronbach's  $\alpha = .88$ ).

To assess the effectiveness of our manipulations, we then asked participants to identify the speaker's residential college and to indicate how much choice they thought the speaker had been given (on a 7-point scale).

Finally we included five items designed to assess participants' impressions of the speech, on 7-point scales (how *articulate*, *well-planned*, *well-thought out*, *effective* and *convincing* the speech was). These items were reliably correlated (Cronbach's  $\alpha = .81$ ), and were averaged to create a composite score of speech quality.

## Results

### Manipulation Checks

Participants who heard the speaker in the high choice condition, as expected, reported that speakers had significantly more choice ( $M = 5.38$ ,  $SD = 1.83$ ) than speakers in the low choice condition ( $M = 2.17$ ,  $SD = 1.55$ ),  $t(48) = 6.7$ ,  $p < .001$ . All participants correctly identified the speaker's residential college.

### Attitude Change

Attitude change scores were computed for all participants by subtracting their attitude score at pretest from their attitude score after hearing the tape. Thus, a positive score indicates attitude change in the direction of supporting a tuition increase. We regressed these attitude change scores on group ( $-1/+1$ ), choice ( $-1/+1$ ), identification (standardized), and the four corresponding interaction terms. The only significant predictor was the Group  $\times$  Identification interaction,  $b = -0.75$ ,  $t(42) = -2.5$ ,  $p < .02$  (all other  $t$ s  $< 1$ ). To explicate this interaction, we conducted separate linear regression analyses within each of the two group conditions, regressing attitude change on identification. Figure 1 shows that, as hypothesized, identification predicted attitude change when the speaker was an ingroup member,  $b = 0.85$ ,  $t(23) = 2.3$ ,  $p = .03$ . When the speaker was an outgroup member, however, the slope

was in the opposite direction ( $b = -0.63$ ), though it was not significant,  $t(23) = -1.5$ ,  $p = .15$ .

### Affect

We conducted the same linear regression on each of our three affect indices. No predictor was significant for our key measure, psychological discomfort, or for positive affect. For NEGSELF, we found a significant interaction between group and identification,  $b = 0.21$ ,  $t(42) = 2.1$ ,  $p < .05$ , qualified by a three-way interaction between group, identification, and choice: Identification predicted NEGSELF only when the speaker was an ingroup member with low choice,  $b = -0.53$ ,  $t(10) = -2.5$ ,  $p < .05$ . In addition, these affect indices were not correlated significantly with attitude change ( $r = -.10$ , *ns*, for psychological discomfort;  $r = -.24$ ,  $p = .09$ , for positive affect; and  $r = -.09$ , *ns*, for negative self-directed affect).

### Speech Ratings

Finally, we examined participants' ratings of the quality of the speech they heard, to ensure that our effect was not the result of high identifiers simply thinking that speeches made by ingroup members were better than those made by outgroup members. We conducted the full regression analysis on these scores, but found no significant predictors. In particular, group was not a significant predictor of speech ratings,  $b = -0.08$ ,  $t(42) = -0.6$ , *ns*, nor was the Group  $\times$  Identification interaction,  $b = -0.03$ ,  $t(42) = -0.2$ , *ns*. Furthermore, speech ratings were not correlated with attitude change ( $r = .07$ , *ns*).

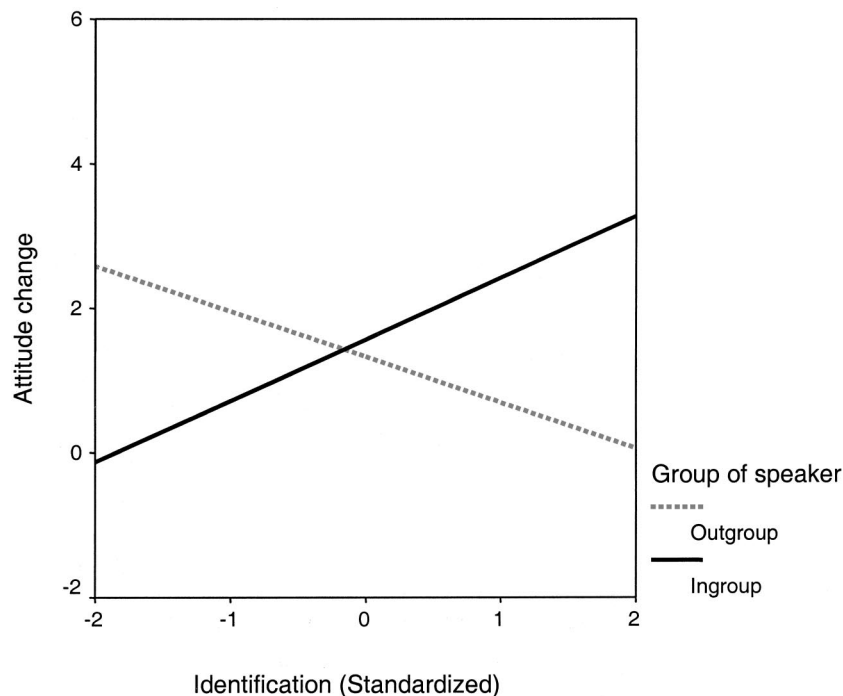


Figure 1. Regression slopes in Study 1 with group identification predicting attitude change, by group of speaker.

### Discussion

Results from Study 1 supported the major hypothesis. We showed that group members changed their attitudes when they heard an ingroup speaker agree to make a counterattitudinal speech, but, as predicted, only if the participants felt highly identified with their group. For these participants, witnessing a close other engaged in such behavior was enough to lead to attitude change akin to that observed in traditional dissonance paradigms. Of interest, contrary to classical personal dissonance paradigms, the effect was not moderated by how much choice the speaker had in making the speech. Though choice is often a key variable in inducing personal dissonance, the level of choice that our participants perceived the speaker as having did not moderate the attitude change findings. This may be due to the well-documented tendency, at least in Western cultures, to underestimate situational constraints when making attributions for the behavior of others (Jones & Harris, 1967): Speakers are typically perceived as having more choice in the positions they advocate than they themselves experience. We return to the role of choice in vicarious dissonance in Study 3, strengthening the choice manipulation to overcome this possible correspondence bias.

We found no evidence that participants experienced personal psychological discomfort as a result of our manipulations, even as they showed classic patterns of dissonance-induced attitude change. Two possible reasons for this failure are, first, that discomfort might have been measured too late in our procedure. Elliot and Devine (1994) showed that psychological discomfort was significantly reduced when measured after attitude change, presumably because attitude change is an effective way to reduce psychological discomfort. In Study 1, discomfort was measured after participants had the opportunity to change their attitudes, which may have been enough to alleviate any lingering discomfort. Second, and of greater theoretical interest, if the process of vicarious dissonance is truly vicarious in nature, then we might not expect observers to experience the same kind of discomfort as those in the throes of dissonance. Perhaps we should not be asking participants how they felt but instead how they *would have felt* in the speaker's place. To further explore the role of affect, we include a misattribution manipulation in Study 2, and then explore the role of vicarious discomfort in Study 3.

In addition to the predicted pattern of attitude change among high identifiers, the interaction of group with identification seems to have been driven, at least in part, by low identifiers, who seemed, if anything, to be more influenced by hearing an outgroup member than an ingroup member. This trend for low identifiers, though not predicted (and not significant) is intriguing and merits further attention. One parsimonious explanation is that those participants who were not identified with their current residential college would have preferred to live elsewhere, and therefore identified with other residential colleges. To test this interpretation, we administered the identification scale (Cronbach's  $\alpha = .92$ ) to a different sample of freshmen and sophomores ( $N = 62$ ), and added five new items (on 7-point scales) designed to assess a desire to live elsewhere (e.g., *sometimes I wish I lived in another residential college; I think I would fit in better in another residential college*). These new items were reliably correlated (Cronbach's  $\alpha = .75$ ) and were averaged to form a single index. As predicted, the two measures were related ( $r = .48, p < .001$ ) such that low identifiers were more likely to express a desire to live

elsewhere. Our participants who did not identify with the ingroup in Study 1, then, may be seen as high identifiers with the outgroup. Because vicarious dissonance occurs when individuals witness others they relate to engage in dissonant actions, these results account for the symmetric pattern we observed for attitude change among low identifiers.

### Vicarious Dissonance and Persuasion

An alternative interpretation for the findings of Study 1 is that they are the result of processes of persuasion. Arguments presented by ingroup members are generally seen as superior (e.g., Wilder, 1990), which can lead to greater attitude change. The analysis of speech ratings from Study 1, however, does not support this interpretation, as participants did not find speeches made by ingroup members to be of higher quality than speeches made by outgroup members, and perceived speech quality was not correlated with attitude change. Nonetheless, a number of factors not assessed in Study 1 can lead to increased message processing and result in greater persuasion; for example, messages from ingroup members are more deeply processed (Mackie, Worth, & Asuncion, 1990). In Study 2, we remove the actual speech from our procedure, and play only the portion of the taped interaction in which the speaker agrees to make the speech. As we view it, attitude change that stems from vicarious dissonance is independent of processing effects, but rather occurs when we witness someone with whom we identify engage in counterattitudinal behavior. Just as agreeing to perform counterattitudinal behavior induces dissonance on an individual level (Linder, Cooper, & Wicklund, 1968), so too should witnessing agreement induce vicarious dissonance in an observer: The actual performance and content of the speech should not be relevant. In Study 1, all speakers disagreed with the issue; in Study 2, we systematically varied agreement by adding a condition in which speakers agreed with the position advocated. Attitude change caused by this new manipulation should be due to previously explored persuasion effects; attitude change caused by counterattitudinal behavior, however, could only be caused by vicarious dissonance.

### Study 2

We used the same procedure as Study 1, with a number of important changes: To show that the sufficient element for attitude change was agreeing to make the speech, we removed the speech itself from the procedure; to show that a necessary element for vicarious dissonance was the counterattitudinal nature of the speaker's behavior, we manipulated the speaker's agreement with the advocated position; to further explore a role for personal discomfort, we introduced a misattribution manipulation (Zanna & Cooper, 1974) by telling some of the participants that new lights in the experiment room might make them uncomfortable. We also used the university as a whole as an ingroup and thus did not include an outgroup condition, and used a different issue that students were even more adamantly opposed to, allowing parents full access to their children's health records at the student health center.

The design was a 2 (speaker opinion: agree/disagree)  $\times$  2 (misattribution/no misattribution), with identification a continuous variable. All speakers in Study 2 were ingroup members and were given high choice. As before, our main dependent variable was

attitude change. We expected that highly identified participants who heard an ingroup member disagree with the issue and then agree to make a speech in favor would show greater attitude change than participants who heard an ingroup speaker agree with the issue and then agree to make a speech in favor. If personal discomfort is involved in the process leading to attitude change, then attitude change should be reduced when participants are provided with an alternative route to explain their unease through misattribution of arousal.

## Method

### Participants

Forty-three Princeton undergraduates took part in Study 2 for experimental credit or payment. As before, we selected participants who disagreed strongly (a 4 or lower on a 15-point scale) with the issue (parental access to student health records), and who stated that they had never participated in a psychology experiment before (to reduce suspicion), during a pretest at the beginning of the semester. Participants were run in same-sex dyads.

### Materials

*Premanipulation questionnaire.* This packet was the same as in Study 1.

*Tape.* Our tapes were similar to those used in Study 1, except that we changed the issue and introduced our speaker opinion manipulation, which appeared during the recorded interaction. The experimenter asked the speaker for his or her opinion regarding allowing parental access to student health records: In the *agree* condition, the speaker stated, "I think that's a pretty good idea," whereas in the *disagree* condition (as in Study 1), the speaker stated, "I'd be against that." In all conditions, the speaker then agreed to make the speech.

*Postmanipulation questionnaires.* The questionnaire was similar to that used in Study 1, with minor changes. Participants reported their attitude toward allowing parental access to student health records (on a 15-point scale) then completed manipulation checks about the speaker's agreement (also on a 15-point scale) and the speaker's university. Finally, participants completed an official-looking form assessing their impressions of the new lights (allegedly for the university's Facilities Department), including questions that asked them to report their affect. Because our measures of affect were embedded in the official form related to our misattribution cover story, we could only credibly measure items that appeared relevant: We thus included the three key psychological discomfort traits (*uncomfortable*, *bothered*, and *uneasy*) from Study 1, averaging these items to create a composite measure of discomfort (Cronbach's  $\alpha = .94$ ), and included three filler items, *happy*, *energetic*, and *lethargic*, again using a 7-point scale.

### Procedure

The procedure was similar to that used in Study 1, with three modifications. First, where group status had been manipulated with residential colleges, now the relevant group was the university, and the speaker was always identified as a fellow Princeton student. Second, in the *misattribution* condition, the experimenter told participants after they completed the premanipulation questionnaire but before they listened to the taped interaction that new lights in the building apparently were making people uncomfortable. He informed them that he had been asked by the Facilities Department to have all participants who used the rooms fill out a questionnaire after the experiment was over. In the *no misattribution* condition, the experimenter told participants about the lights only after they had completed the first postmanipulation questionnaire, but before completing the discomfort measures. Third, after listening to the interaction, and before

the speech could be played, the experimenter gave out the main questionnaire. This was allegedly done to rate speech patterns in social interaction before rating them during a formal speech. The actual speech, therefore, was never played for participants.

## Results

### Manipulation Checks

As expected, participants thought the speaker agreed with the issue more ( $M = 12.18$ ,  $SD = 1.30$ ) in the *agree* condition than they did in the *disagree* condition ( $M = 2.14$ ,  $SD = 1.80$ ),  $t(41) = 21.1$ ,  $p < .001$ . It should be noted that speakers who disagreed with the issue but agreed to make a speech in favor of it were still seen as opposed to the issue: Though all speakers agreed to make a speech in favor, participants remained aware that the behavior was counterattitudinal for speakers who disagreed with the issue. All participants correctly identified the speaker's university.

### Attitude Change

As before, a pretest identification composite score (Cronbach's  $\alpha = .91$ ) and a score of attitude change (postexperiment attitude minus pretest attitude) were calculated for each participant. We then regressed these attitude change scores on speaker opinion ( $-1/+1$ ), identification (standardized), misattribution ( $-1/+1$ ), and the four corresponding interaction terms. First, we found a main effect for identification,  $b = 1.16$ ,  $t(35) = 2.2$ ,  $p < .05$ , suggesting that the more identified participants showed greater attitude change; second, we found a marginal main effect for misattribution,  $b = -0.92$ ,  $t(35) = -1.9$ ,  $p = .07$ , suggesting that, overall, our misattribution manipulation led to more attitude change; third, the identification main effect was qualified by the predicted marginal Identification  $\times$  Speaker Opinion interaction,  $b = -0.93$ ,  $t(35) = -1.7$ ,  $p = .09$  (all other  $t$ s  $< 1.4$ ). To understand this interaction, we regressed attitude change on identification within each level of the speaker opinion variable. Figure 2 shows that when the speaker disagreed with the speech, identification was a significant predictor of attitude change,  $b = 2.50$ ,  $t(19) = 3.3$ ,  $p < .01$ ; when the speaker agreed with the speech, that link was nonexistent,  $b = -0.01$ ,  $t(20) = -0.01$ , *ns*. As expected, then, only in the cells presumed to induce vicarious dissonance was the degree of attitude change linked to participants' bond with their group.

### Affect

We conducted the full model regression on our composite measure of psychological discomfort. As in Study 1, we found little evidence that personal psychological discomfort was implicated in vicarious dissonance. We found only a main effect for identification,  $b = -0.42$ ,  $t(35) = -2.2$ ,  $p < .04$ , such that the more identified participants were, the less discomfort they reported, and a main effect for speaker opinion,  $b = 0.41$ ,  $t(35) = 2.4$ ,  $p < .05$ , reflecting that participants were overall more ill-at-ease when the speaker agreed than when she disagreed. None of the interactions was significant; most tellingly, the Opinion  $\times$  Identification interaction,  $b = -0.06$ ,  $t(35) = 0.3$ , *ns*. Furthermore, personal psychological discomfort was not correlated with attitude change ( $r = -.14$ , *ns*), not even in the critical cell that

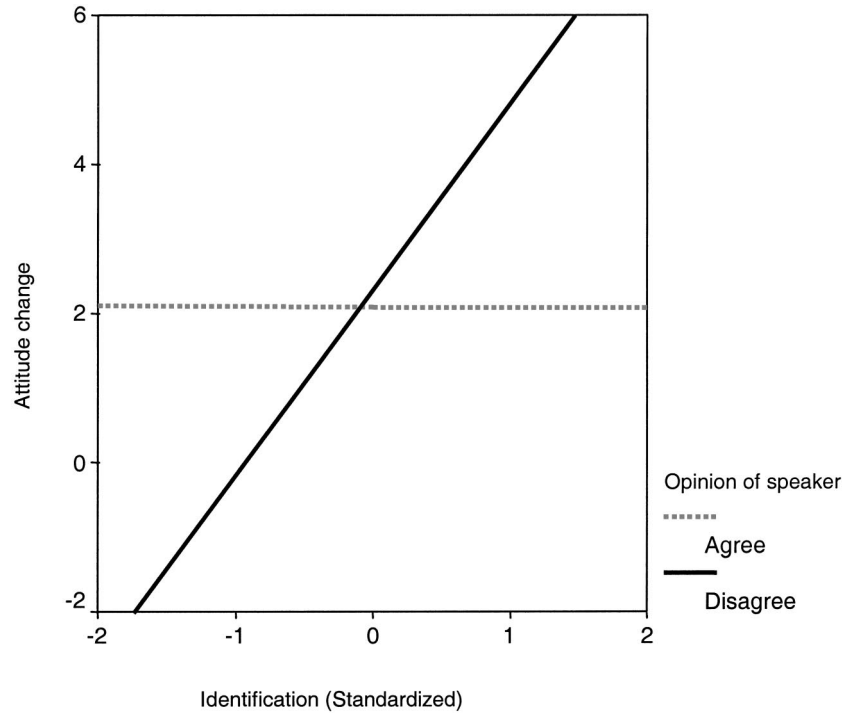


Figure 2. Regression slopes in Study 2 with group identification predicting attitude change, by opinion of the speaker.

elicits dissonance (*disagree/high identification*),  $r(n = 9) = .04$ , *ns*.

### Speaker Attitude

Our manipulations did not have a strong impact on the attitude ascribed to the speaker. We regressed speaker attitude and found only the significant effect for manipulated speaker opinion already reported as a manipulation check,  $b = 4.98$ ,  $t(35) = 20.6$ ,  $p < .001$ . In particular, the two-way interaction observed between speaker opinion and identification was not significant,  $b = -0.09$ ,  $t(35) = -0.3$ , *ns*. Furthermore, the perceived opinion of the speaker correlated neither with attitude change,  $r(n = 43) = -.01$ , *ns*, nor with the raw measure of attitude after manipulations,  $r(n = 43) = .02$ , *ns*.

### Discussion

Study 2 provides further evidence for vicarious dissonance: Highly identified participants again changed their attitudes in response to discrepant behavior by an ingroup member. Study 2 further demonstrates that increased message elaboration is not the driving force behind our effect, as we removed the message from our design yet replicated the predicted pattern of attitude change. As we expected, attitude change was highest when the speaker was known to disagree with the position that he or she agreed to advocate. Whereas this pattern follows directly from the vicarious dissonance hypothesis, it is difficult to reconcile with a persuasion interpretation of our findings, where speakers who agreed with the position they were advocating in the speech should have had an equal (or greater) impact on our high identifiers' attitudes (see

Fleming & Petty, 2000). When the speaker agreed with the issue and agreed to make a speech, however, high identifiers did not change their attitudes more than low identifiers, as evidenced by the lack of a relationship between attitude change and identification in the agree condition. The fact that identification plays a crucial role in the *disagree* but not in the *agree* cells lends further credence to the idea that vicarious dissonance and persuasion are two distinct processes.

### Psychological Discomfort

Giving people the opportunity to misattribute psychological discomfort to an external source did not reduce attitude change in Study 2, despite the technique's success in classic dissonance paradigms. In fact, the manipulation showed some signs (though not significant) of actually increasing attitude change, as though it simply added a different source of arousal that needed to be alleviated (see Worchel & Arnold, 1974). The fact that misattribution does not interact with any of the other variables further suggests that this kind of arousal is psychologically distinct from the processes underlying attitude change due to vicarious dissonance. This finding, even more than the lack of self-reported discomfort (which again could be due to the fact that discomfort was measured after attitude, see Elliot & Devine, 1994), suggests that the psychological processes driving vicarious dissonance are distinct from those driving personal dissonance. Because we are exploring dissonance aroused by the actions of another, we should not be surprised if a different kind of affect, vicarious discomfort, is crucial to the experience of vicarious dissonance. Our conception of vicarious discomfort is indebted to earlier research explor-

ing empathic reactions to others that has drawn similar distinctions.

This notion that the affective states of others can elicit affective responses in observers was introduced early in social psychology (see M. H. Davis, 1994, for a review). Initial theories emphasized the automatic nature of vicarious arousal; McDougall's (1908) "primitive passive sympathy" and Lipps's (1926) "inner imitation" both involved a direct link between observing an actor exhibiting an emotion and experiencing that emotion oneself. Humans automatically mimic the facial expressions—from smiles to grimaces—of others (Provine, 2001; Vaughan & Lanzetta, 1981), which is precursor to a general tendency to automatically "catch" the emotions of others (Hatfield, Cacioppo, & Rapson, 1994). Empathy researchers typically make a further distinction between this more automatic experience and experiences in which observers more actively take the perspective of actors. LaPiere and Farnsworth (1949), for example, describe

mentally putting oneself in the place of another and reacting more or less intensely to the stimuli that actually impinge upon that other person. Thus, should a person with whom we have closely identified ourselves cut his finger in our presence, we would vicariously "feel" the pain of that hurt. (p. 225)

Within this framework, theorists also drew an important distinction between sympathy and emotional contagion (Asch, 1952, pp. 171–172; Heider, 1958, pp. 278–281): In emotional contagion, an actor's emotion simply spills over to an observer's affective state, without a need to understand the actor's situation. True sympathy refers to the emotions one experiences as a result of understanding the psychological condition of the other person, and implies only that a congruent emotion is experienced, not the identical one (Heider, 1958). When chatting with a depressed friend, for example, the contagious reaction is to become depressed, the sympathetic reaction might be to feel concerned. Recent research that emphasizes taking the perspective of the target as an important step toward experiencing vicarious affect also echoes this distinction; M. H. Davis's (1994) parallel and reactive empathy, for example, are quite similar to contagion and sympathy, respectively (and see Batson, Early, & Salvarani, 1997).

It is thus important to distinguish between two different types of discomfort that observers might experience: *personal discomfort*, produced by emotional contagion when witnessing the actor's discomfort, and *vicarious discomfort*, produced by sympathy when imagining how one would feel in the actor's shoes. When others misrepresent their attitudes, they often do so quite effectively, with no external sign that they are ill at ease, thus precluding emotional contagion. The fact that others often look quite comfortable even in the throes of counterattitudinal behavior can lead to generalized social misperceptions such as pluralistic ignorance, where everyone is uncomfortable with the situation but everyone believes everyone else is comfortable (D. T. Miller & McFarland, 1991; D. T. Miller, Monin, & Prentice, 2000). What distinguishes the present situation is that observers are fully aware that the behavior is at odds with the speaker's attitude, and despite not witnessing any discomfort, can readily imagine what that discomfort might feel like. Because vicarious dissonance requires an understanding of the situation, and of the actor's psychological plight, we might expect vicarious discomfort, and not the personal discomfort more typical of emotional contagion, to be the aversive state that motivates dissonance reduction attempts. Of importance, then, we

would not predict that participants witnessing counterattitudinal behavior would "catch" the psychological discomfort of the speaker; instead, they should exhibit a different, though related, vicarious discomfort.

Both the misattribution manipulation and the self-report measures used thus far targeted discomfort directly experienced by the participant. As outlined earlier, however, vicarious dissonance may be associated not with one's own psychological discomfort, but rather with the vicarious discomfort that one would imagine experiencing were one in the speaker's place, a psychological state we assess in Study 3. In addition, mirroring our questions regarding the speaker's attitude in Study 2, we also added measures to assess participants' perceptions of the speaker's discomfort.

### Study 3

Study 3 was thus designed to address some of the questions left unanswered by Studies 1 and 2. We included two manipulations designed to explore whether factors that moderate personal dissonance also moderate vicarious dissonance. First, given the lack of an effect for the level of choice given to speakers in Study 1, we developed a stronger manipulation of speaker choice by adding a verbal exchange between the speaker and the experimenter in which the speaker explicitly asked about her freedom not to write the essay. Second, many studies have shown that dissonance-induced attitude change is greater when negative consequences follow from one's actions (Cooper & Fazio, 1984). Though there is some debate as to whether aversive consequences are necessary for personal dissonance (Beauvois & Joule, 1996; Harmon-Jones et al., 1996), there is good reason to believe that they at least constitute a powerful moderator (Scher & Cooper, 1989) because aversive consequences are important dissonant cognitions (Thibodeau & Aronson, 1992). In Studies 1 and 2, all speeches had aversive consequences; in Study 3, we manipulated this variable by indicating that the speech would either be forwarded to a Dean (as in the first two studies) or would be erased at the end of the session.

We also attempted to demonstrate a role for psychological discomfort, in two ways. First, inspired by Heider's (1958) distinction between contagion and sympathy, and given our results with self-reports of personal discomfort and misattribution in the first two studies, we added two new measures of discomfort—the discomfort perceived in the speaker and the discomfort one could imagine experiencing if in the speaker's position. Second, we counterbalanced these measures of discomfort and our measure of attitude, a methodology that provides both a better chance for discomfort to be reported when assessed before attitude and an opportunity to explore whether this discomfort is reduced as a result of attitude change (Elliot & Devine, 1994).

We predicted that attitude change would be highest when high identifiers witnessed a speaker agree to write a speech under conditions of high choice and aversive consequences. We did not expect the counterbalancing of affect and attitude measures to influence attitude change, but did predict that counterbalancing would impact measures of discomfort (as in Elliot & Devine, 1994). The discomfort aroused by vicarious dissonance should be highest among high identifiers under conditions of high choice and aversive consequences, and most important, this discomfort should be reduced after these high identifiers have had a chance to express their (changed) attitudes. The overall design was a 2 (high/low



choice)  $\times$  2 (aversive consequences/no consequences)  $\times$  2 (order: affect first/attitude first), with group identification a continuous variable.

## Method

### Participants

One hundred eight students from the introductory psychology subject pool at the University of Queensland (UQ), Brisbane, Australia, signed up for an experiment on "Linguistic Subcultures" and received experimental credit for their participation. Seven participants were eliminated because they were not able to identify the speaker as a UQ student in a manipulation check.

### Procedure

Participants were greeted by a female experimenter who indicated that other participants were expected and that the study would only start once all participants had arrived. The experimenter then staged a phone conversation with another experimenter in which she allegedly learned that the other participants had arrived. Participants were told that the experiment would be conducted on a computer, but that the experimenter could communicate with participants through electronic messaging. At that point the experimenter took her place nearby at her own computer. Once the program started, participants received instructions and gave their responses through the computer. They were told that the study investigated the speech patterns of UQ students, as compared with students from other universities. After providing some demographic information, completing a one-item assessment of identification with UQ, "To what extent do you identify with being a student at UQ?" on a 7-point scale (ranging from 1 = *not very much* to 7 = *very much*), and reading a brief cover story about linguistic subcultures, participants discovered that they would be paired randomly with a student in another room, and that one member of that pair would have to write a speech on the topic of upfront fees for university students<sup>2</sup> while the other member would be rating that speech on a variety of linguistic criteria. All participants were led to believe that the computer randomly assigned them to rate the speech, and they read that because all speechwriters needed to take the same standpoint on the issue of upfront fees to ensure consistency across essays, all speech writers would be arguing in favor of these fees.

Participants in the *no consequences* condition then read that the speech would only be read by the writer's partner, and that it would be erased from the computer at the end of the session, whereas participants in the *aversive consequences* condition learned that a copy of the speech would be sent to the Dean of Arts, who purportedly was gathering information to determine whether he would support the proposal. Participants read that the speechwriter would have a chance to ask questions of the experimenter, and under this guise, read a scripted exchange of electronic messages between the experimenter and the speechwriter. The speechwriter expressed his or her complete disagreement with the position to be advocated, and interjected "Do I have to write the speech?" In the *low choice* condition, the experimenter replied that the speech was an integral component of the experiment and that they therefore had no choice. In the *high choice* condition, the experimenter said that of course they did not have to, that it was entirely their choice, and that if they did not write it they would still get experimental credit, but that she would really appreciate if they would write it. The speechwriter replied that he or she did not have any more questions and was ready to start.

*Postexperiment questionnaire.* At this point, while their partner was allegedly beginning to write their speech, participants filled out the main dependent variables and manipulation checks. In the *attitude first* condition, they first indicated how much they agreed with the proposed introduction of upfront university fees for all UQ students, on a 15-point scale (ranging from 1 = *not at all* to 15 = *very much*), after which they

completed the various affect measures. In the *affect first* condition, they first completed the discomfort measures, and then reported their attitude about upfront fees. Discomfort measures were collected from three different perspectives: For the *personal affect* measure, participants were asked to indicate how *happy, bothered, good, uneasy, optimistic, and uncomfortable* they felt at the moment on a 15-point scale (ranging from 1 = *not at all* to 15 = *very much*). For the *other affect* measure, participants answered the same questions regarding the feelings of the speechwriter. For the *vicarious affect* measure, participants were asked to answer each question describing how they thought they would feel in the speechwriter's position.

A number of manipulation checks followed the administration of the main dependent variables. Participants indicated the extent to which the speech writer was given a choice in writing the speech, and the extent to which the speech could have aversive consequences to UQ students, both on 7-point scales (ranging from 1 = *not at all* to 7 = *very much*).

## Results

### Manipulation Checks

As expected, participants in the high choice condition felt that the speaker had been given greater choice ( $M = 3.35$ ,  $SD = 0.69$ ) than participants in the low choice condition ( $M = 1.28$ ,  $SD = 0.45$ ),  $t(99) = 17.9$ ,  $p < .001$ . Of most importance, the manipulation was more successful than the choice manipulation in Study 1, with an effect size nearly double that of Study 1 ( $d_s = 3.55$  and 1.89, respectively). In addition, participants in the aversive consequences condition thought that the speech would have greater aversive consequences ( $M = 4.22$ ,  $SD = 0.76$ ) than participants in the no consequences condition ( $M = 3.14$ ,  $SD = 0.78$ ),  $t(99) = 7.0$ ,  $p < .001$ .

### Attitude

We regressed postexperiment attitude scores on consequences ( $-1/+1$ ), speaker choice ( $-1/+1$ ), identification (standardized), order ( $-1/+1$ ), and the 11 corresponding interaction terms. We observed main effects for choice,  $b = 0.33$ ,  $t(85) = 3.8$ ,  $p < .001$ , and consequences,  $b = 0.28$ ,  $t(85) = 3.2$ ,  $p < .005$ , such that high choice and aversive consequences led to more support for upfront fees. We also observed a main effect for identification,  $b = 0.34$ ,  $t(85) = 3.9$ ,  $p < .001$ , such that higher identification led to increased support. These main effects were qualified by interactions of consequences and identification,  $b = 0.25$ ,  $t(85) = 2.8$ ,  $p < .01$ , and choice and identification,  $b = 0.22$ ,  $t(85) = 2.5$ ,  $p = .02$ . Finally, and most important, these interactions were in turn qualified by the predicted Choice  $\times$  Consequences  $\times$  Identification interaction,  $b = 0.20$ ,  $t(85) = 2.2$ ,  $p = .03$  (all other  $t_s < 1.6$ ). We conducted simple linear regressions of attitude on identification within the four cells of the Consequences  $\times$  Choice interaction, and found that, as illustrated by Figure 3, only in the high choice, aversive consequences cell did identification predict attitude change,  $b = 1.03$ ,  $t(85) = 6.6$ ,  $p < .001$  ( $b_s < 0.17$ , *ns*, in the other three cells).

<sup>2</sup> We did not have the opportunity to collect attitude measures prior to the investigation. To ensure that the introduction of upfront fees was one that students strongly opposed, we conducted a pretest with UQ students ( $N = 36$ ). Not surprisingly, students were strongly opposed to the introduction of upfront fees ( $M = 1.77$  on a 7-point scale); taking a position in favor of upfront fees thus ran against the beliefs of UQ students.

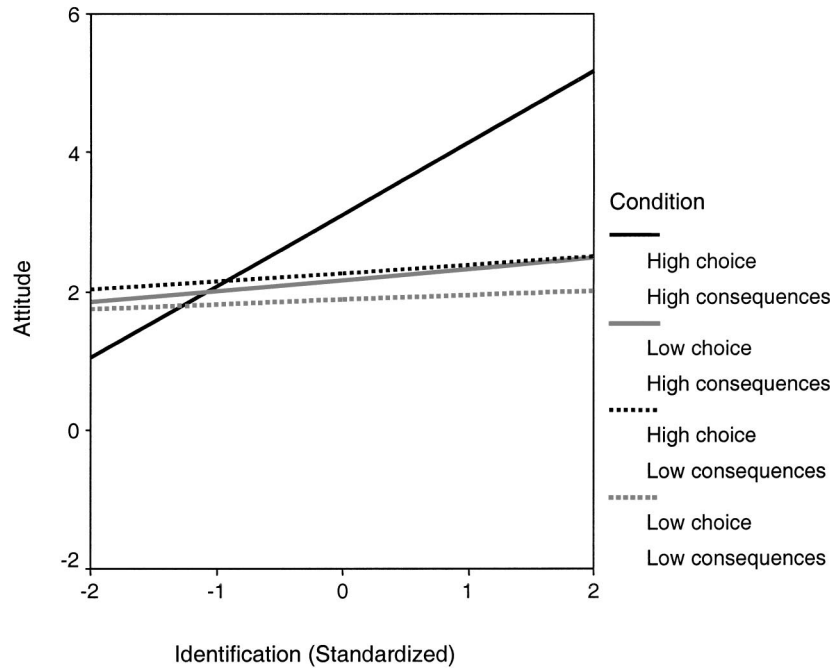


Figure 3. Regression slopes in Study 3 with group identification predicting attitude, by level of speaker choice and aversive consequences.

### Psychological Discomfort

We averaged the affect measures to create six composite scores, corresponding to three perspectives (self, other, vicarious) and two types (psychological discomfort and positive affect). Thus, we obtained averages for personal positive affect (P+;  $\alpha = .91$ ) and personal psychological discomfort (P-;  $\alpha = .78$ ); positive affect perceived in the other (O+;  $\alpha = .86$ ) and psychological discomfort perceived in the other (O-;  $\alpha = .87$ ); and vicarious positive affect (V+;  $\alpha = .89$ ) and vicarious psychological discomfort (V-;  $\alpha = .90$ ). When we conducted the regression analysis on the six indices, we found that only for V- and V+ were the predicted three-way interactions between choice, identification, and consequences significant,  $b = 0.42$ ,  $t(85) = 2.6$ ,  $p = .01$ , and  $b = 0.38$ ,  $t(85) = 2.5$ ,  $p < .02$ , respectively. The four-way interactions for V- and V+ were not significant,  $b = -0.09$ ,  $t(85) = -0.6$ ,  $ns$ , and  $b = 0.02$ ,  $t(85) = 0.2$ ,  $ns$ , not surprising because we expected an order effect only in the two critical cells (see Elliot & Devine, 1994). As a result, we switched from this omnibus test to more focused comparisons.<sup>3</sup>

Following Elliot and Devine (1994), we wanted to address two key issues about discomfort: Whether it arises in the cells where support for the issue was highest, and whether reporting one's attitude reduces discomfort. To test mean differences, we recategorized our participants using a median split as "high" or "low" on identification (Median = 4.0) and conducted two orthogonal contrasts reflecting the two questions above on measures of discomfort. The first contrast pitted the two cells meant to elicit dissonance (high choice, aversive consequences, high affiliation) against the other 14 cells, whereas the second contrast, orthogonal to the first, compared these two cells to assess the role of order. Table 1 presents the tests of these contrasts for attitude, and for the three measures of psychological discomfort. As is apparent, vicar-

ious discomfort is the only type of discomfort that is significantly higher in the two key "dissonance" cells ( $M = 11.51$ ,  $SD = 1.44$ ) than in the other cells ( $M = 8.13$ ,  $SD = 1.70$ ). Furthermore, as predicted, only vicarious discomfort is reduced as a result of attitude change, such that it is higher when reported first ( $M = 12.67$ ,  $SD = 0.87$ ) than when reported after attitude ( $M = 10.52$ ,  $SD = 1.03$ ). In addition, vicarious positive affect is lower in the two dissonance cells ( $M = 4.26$ ,  $SD = 1.56$ ) than the controls ( $M = 7.09$ ,  $SD = 1.68$ ), and is lower when reported first ( $M = 3.00$ ,  $SD = 0.89$ ) than when reported second ( $M = 5.33$ ,  $SD = 1.12$ ), suggesting that vicarious dissonance impaired participants' positive affect, and that reporting attitudes helped restore it (see Table 2 for psychological discomfort means). The residuals for V and V+ were not significant, both  $F_s(13, 85) = 1.3$ ,  $ns$ ,

<sup>3</sup> Though we expected vicarious discomfort to be related to attitude only in the key cells, we did check for overall mediation (Baron & Kenny, 1986). We focused on the cells where discomfort was measured first, because the cells where discomfort was measured after attitude preclude using discomfort as a mediator. Among participants who reported their discomfort before their attitude ( $n = 50$ ), the predicted Choice  $\times$  Consequences  $\times$  Identification interaction is still significant in the full factorial model ( $b = 0.25$ ,  $p < .06$ ). When the full model is used to predict the different types of discomfort, we find that this focal interaction term predicts only V- ( $b = 0.51$ ,  $p < .05$ ) and not P- nor O- (both  $ps > .5$ ). Thus, vicarious discomfort remains the only possible mediator. When the three discomfort measures are added simultaneously to the factorial model as predictors of attitude, however, the focal interaction term is not reduced ( $b = 0.35$ ,  $p < .01$ ), and although V- is a marginally significant predictor, it actually slightly lowers attitude ( $b = -0.15$ ,  $p = .05$ ), both of which are inconsistent with mediation. Results are similar when the discomfort measures are entered separately.

Table 1  
*Contrast Analysis of Attitude and Psychological Discomfort Scores in Study 3*

Contrast	<i>F</i> (1, 85)	<i>p</i>
Dissonance		
Attitude	37.00	<.001
P-	0.01	<i>ns</i>
P+	0.44	<i>ns</i>
O-	1.70	<i>ns</i>
O+	0.27	<i>ns</i>
V-	52.80	<.001
V+	38.70	<.001
Order		
Attitude	0.40	<i>ns</i>
P-	1.20	<i>ns</i>
P+	0.01	<i>ns</i>
O-	1.00	<i>ns</i>
O+	2.40	<i>ns</i>
V-	5.80	<.05
V+	7.10	<.01

*Note.* P- = personal discomfort; P+ = personal positive affect; O- = other's discomfort; O+ = other's positive affect; V- = vicarious discomfort; V+ = vicarious positive affect.

suggesting that the two planned contrasts captured the bulk of the variance.

### Discussion

Study 3 provides further evidence that witnessing the counter-attitudinal behavior of an ingroup member can lead to attitude change. As in Studies 1 and 2, this effect was strongest among participants who identified with the group. Furthermore, this study addresses a number of issues left open by previous studies, and in particular suggests that the attitude change demonstrated in Studies 1 and 2 is indeed the outcome of a phenomenon akin to dissonance reduction. In sum, results from Study 3 indicate that support for a disliked issue (a) is greater when the speaker has high choice; (b) is greater when aversive consequences are foreseeable; (c) is greater the more vicarious psychological discomfort one experiences; and (d) reduces this vicarious discomfort. Each of these findings is discussed in turn.

### Choice

In contrast to Study 1, Study 3 demonstrates that high choice leads to more attitude change, as in the case of personal cognitive dissonance. In the *Discussion* section of Study 1, we suggested that the failure to find an effect for the choice manipulation may have been due to people's tendency to make dispositional attributions about actors whose behavior was constrained. Our choice manipulation in Study 1 was unsuccessful not in inducing high choice, but in inducing low choice; the goal of Study 3, therefore, was to lower perceptions of choice in the low choice condition by strengthening the manipulation of coercion. Whereas in Study 1 we simply manipulated choice by having the experimenter describe it on the tape, in Study 3 the speech writer herself expressed her disagreement and asked whether she really needed to write the speech. The new manipulation of choice was more successful, as participants in the low choice condition perceived the actor's constraint more accurately: To the extent that manipulation checks

can be compared across populations and paradigms, the mean for perception of speaker choice in the low choice condition was lower in Study 3 ( $M = 1.28$ ) than in Study 1 ( $M = 2.17$ ). Thus, the low choice participants in Study 3 rated the actor as having less freedom than did participants in the low choice conditions of Study 1 and, as we reported here, the effect size for the choice manipulation was considerably larger in the third experiment than in the first. We found that when the speechwriter was perceived to have low choice, support for the issue was not as high, mirroring effects for choice in other dissonance research.

### Aversive Consequences

Another important moderator of personal dissonance is whether the behavior is seen to potentially bring about negative consequences (Cooper & Fazio, 1984; Scher & Cooper, 1989). Study 3 demonstrates that increased support for the issue was more likely when the speech writing had consequences: When participants were led to believe the speech would be destroyed and not used for any ulterior purpose, they did not increase their support for upfront fees to the same extent.

### Psychological Discomfort

Showing that psychological discomfort is elicited by our paradigm is crucial in demonstrating that our phenomenon elicits some form of the tension that typifies personal dissonance. In Study 3 we measured psychological discomfort as experienced by participants, but also the discomfort they attributed to the speechwriter, as well as the discomfort that they imagined they would experience in the speechwriter's position. It is this latter form of affect that is elicited by the manipulations: As before, we observed no impact of our manipulations on reports of personal discomfort and also observed no effects on the perceived discomfort of the speaker, but vicarious discomfort was at its peak in our key cells. These results also clarify why the opportunity to misattribute arousal did not moderate attitude change in Study 2. Misattribution manipulations are aimed at the affect experienced by the participant; the present study suggests that vicarious dissonance might not be associated with personal affect at all. Instead, we found that our manipulations impacted vicarious discomfort, or the discomfort participants imagined they would experience were they in the speaker's position. These results suggest that in order for us to observe classic misattribution effects on attitude in our paradigms, the misattribution manipulation would have to be targeted at vicarious discomfort, not the personal discomfort targeted in Study 2.<sup>4</sup>

As further evidence that vicarious discomfort goes hand in hand with participants' reported attitudes, the two were positively correlated in the two key cells (high choice, aversive consequences, high identification;  $r = .34$ ), although this correlation was not

<sup>4</sup> Misattribution has been used to eliminate some kinds of empathic emotion: In Coke, Batson, and McDavis (1978), for example, misattribution reduced empathic arousal brought on by witnessing another in need of help. This kind of arousal, however, may be most similar to contagion, where the situation causes one to experience the exact same emotion as the speaker, rather than vicarious dissonance, which evokes a sympathetic reaction. Because sympathy does not involve experiencing the same affect as an actor, it is not surprising that manipulations that target this personal affect do not eliminate this kind of vicarious discomfort.

Table 2  
*Mean Psychological Discomfort Scores (Study 3)*

Aversive consequences	Identification	Order	<i>n</i>	Psychological discomfort		
				P-	O-	V-
Low choice						
No	Low	Affect first	7	4.5	5.3	6.7
		Attitude first	6	4.6	6.3	7.8
	High	Affect first	6	4.3	5.8	7.0
		Attitude first	7	4.2	7.1	7.8
Yes	Low	Affect first	6	4.5	6.8	8.0
		Attitude first	6	3.6	8.0	8.6
	High	Affect first	6	5.4	7.9	9.6
		Attitude first	6	4.2	8.7	8.6
High choice						
No	Low	Affect first	6	5.6	6.2	7.6
		Attitude first	7	5.4	6.6	8.7
	High	Affect first	6	5.9	6.9	8.4
		Attitude first	5	5.1	6.7	8.5
Yes	Low	Affect first	7	4.3	8.0	8.2
		Attitude first	7	4.8	8.8	8.5
	High	Affect first	6	4.3	8.1	12.7
		Attitude first	7	5.1	7.2	10.5

*Note.* P- = personal discomfort; O- = other's discomfort; V- = vicarious discomfort.

significant given the small number of participants in those cells ( $n = 13$ ). In fact, this positive correlation is an underestimation of the actual relationship between vicarious discomfort and attitude due to the mean difference in vicarious discomfort between orders. Correlation scores within each of the two orders were much higher and still positive:  $r(n = 7) = .66, p = .11$  for attitude first;  $r(n = 6) = .90, p = .02$  for affect first.<sup>5</sup> In addition, there was no relationship between personal discomfort or discomfort perceived in the other and attitude change in these key cells ( $r_s = .11$  and  $-.01$ , respectively).

#### *Reduction of Discomfort Following Attitude Change*

Most important, Study 3 demonstrates that vicarious discomfort is reduced when participants have the opportunity to change their attitudes, just as personal discomfort is reduced in individual paradigms (Elliot & Devine, 1994). Although vicarious discomfort was highest in both of our experimental cells collapsing across orders, it was also significantly greater when measured before attitude than when attitude was measured first. This suggests that attitude change is an effective way to reduce the discomfort that one can imagine experiencing if one were in the speechwriter's position. This is a crucial addition to the set of findings presented so far, and our most direct evidence that the attitude change we reliably observe in our paradigm is brought about by a process akin to dissonance.

#### General Discussion

We propose that people change their attitudes to accommodate the counterattitudinal behavior of those with whom they identify. The three studies presented in this article demonstrate this phenomenon and begin to explore the conditions necessary for the occurrence of vicarious dissonance. In particular, we showed that

vicarious dissonance was elicited only when observers were connected to the actor through joint membership in a group with which they identified (Study 1), when the speech was counterattitudinal for the other (Study 2), when actors had clear choice in engaging in inconsistent behavior, and when that behavior had foreseeable aversive consequences (Study 3). Consistent with dissonance theory predictions, it was sufficient to witness the other agreeing to engage in the dissonant behavior to lead to attitude change, without the dissonant behavior actually being observed (Studies 2 and 3). Attitude change due to vicarious dissonance was also shown to be distinct from persuasion: Not only was the presence of a persuasive message unnecessary (Studies 2 and 3), but Study 2 showed that attitude change was greatest when speakers were known to disagree with the position they agreed to espouse. Finally, we found little evidence that personal discomfort was implicated in vicarious dissonance, instead demonstrating a role for vicarious discomfort (the discomfort one imagines expe-

<sup>5</sup> Correlations between measures of affect and attitude change have been somewhat fickle in the dissonance literature. In hydraulic models of dissonance (as in Elliot & Devine, 1994), the correlation between vicarious discomfort and attitude should be negative when participants report attitudes first, and positive when reporting affect first. But Harmon-Jones et al. (1996), for example, reported a positive correlation ( $r = .42, p = .05$ ) across conditions when skin conductance is measured before attitude, whereas Losch and Cacioppo (1990) reported a negative correlation between skin conductance and attitude change ( $r = -.65, p < .01$ ) in their experimental cell, also measured before attitude change. Indeed, the negative correlation reported in Elliot and Devine (1994) is significant only across studies. There are sound stories for both positive and negative correlations between discomfort and attitude change, one based on a model that posits that discomfort mediates attitude change (yielding positive correlations), and one based on a hydraulic view of dissonance (yielding negative correlations).

riencing in the speaker's place). Of most importance, this vicarious discomfort was reduced when measured after attitude, suggesting that attitude change is an effective way to reduce vicarious dissonance (Study 3).

One possible alternative account for our attitude change results revolves around expectancy violation. Participants who hear an ingroup speaker disagree with an issue and then agree to make a speech in favor of it see their expectancy disconfirmed, leading to a search for explanations, possibly by reconsidering the issue at hand. This process might in turn lead to attitude change. Some research has shown that messages that contradict recipient's expectations can lead to increased attitude change (Allyn & Festinger, 1961; Eagly, Wood, & Chaiken, 1978), though unlike Studies 2 and 3, these studies all involved reading or hearing actual persuasive communications. Although future investigations should explore this possible mediator, our results for vicarious discomfort do not support this interpretation. It is unclear why, if participants are attempting to come to terms with their disconfirmed expectations, this reckoning would induce vicarious, rather than personal, discomfort.

Another alternative explanation for our attitude change results is that participants who witness speakers disagree with an issue but then agree to make a speech in favor of it infer that speakers have in some sense "changed their minds" about the issue. In other words, participants may implicitly assume attitude change in the speaker and simply conform to what they perceive to be the speaker's new attitude. In this interpretation, attitude change might be driven by participants' attempts to restore balance to their relationship with the actor by making sure their opinions matched those of the actor (Heider, 1958). Our postmanipulation assessment of speakers' attitudes in Study 2 makes this interpretation less likely. Participants were well aware that speakers who disagreed with giving parental access to health records but were willing to make a speech in favor remained privately opposed, yet these participants continued to exhibit personal attitude change. In addition, further support for this position is provided by the lack of a correlation between participants' final attitudes and their perceptions of the speaker's attitude in this study. Thus, our results do not support the view that participants perceived dissonance-induced attitude change in the other and changed their attitudes as a result. Instead, participants spontaneously adopted the perspective of the speaker, imagining how uncomfortable they would have been in the speaker's position, and changed their own attitudes as a result.

### *Vicarious Dissonance and Personal Dissonance*

Although vicarious dissonance resembles personal dissonance in many ways, the two phenomena differ on several key dimensions. Like personal dissonance, vicarious dissonance results from a discrepancy between attitude and behavior, and attitude change is used as a means of dissonance reduction. Also like personal dissonance, vicarious dissonance is stronger if counterattitudinal behavior leads to aversive consequences, and if speakers freely choose to engage in that behavior. In vicarious dissonance, however, it is the counterattitudinal behavior of another, and not one's own behavior, that leads to attitude change, a difference that is reflected in participants' experience of the phenomenon. Although the opportunity to misattribute arousal leads to a reduction in dissonance-induced attitude change in actors, observers provided with this same opportunity continued to exhibit attitude change.

This mismatch is likely due to differences in the phenomenology of vicarious dissonance. Although vicarious dissonance is associated with a type of psychological discomfort, we found that vicarious dissonance was related to vicarious psychological discomfort, the discomfort one can imagine experiencing in the same situation as the other, rather than personal psychological discomfort. Thus, the increased support for disliked issues observed in the studies above does not stem from one's own aversive arousal, but rather on the aversive state one can imagine experiencing in a similar situation. People frequently experience attitude change based on imagining themselves in the place of another: Imagine a CEO who has been embezzling funds from her corporation who hears about a rival CEO sent to prison for the same offense. Although our CEO clearly will not experience the same kind or amount of aversive arousal as the convicted embezzler—she is not required to go to jail, after all—she may experience a great deal of vicarious arousal, imagining the outcome if she had been caught instead, and may actually curtail her embezzling as a result. This kind of imagined arousal is what motivates attitude change in vicarious dissonance as well, and the attitude change we observe is thus not dependent on direct experience of personal arousal. Results from Study 3 offer strong support for vicarious discomfort as the psychological construct driving vicarious dissonance-induced attitude change: This type of discomfort was highest after high identifiers witnessed an actor agree to engage freely in inconsistent behavior with negative consequences, and was reduced after these participants were given an opportunity to express their attitudes.

### *Identification With the Actor*

In each of the studies presented above, group identification was an important moderator of vicarious dissonance-driven attitude change, suggesting that the counterattitudinal behavior of others only has an impact when that person is a member of a valued group. In Study 1, for example, identification trumped shared group membership in producing vicarious dissonance: Only by using participants' self-reports of their identification with ingroups and outgroups were we able to observe vicarious dissonance at work. Although common group membership has often been shown to function as a sufficient marker of shared social identity, only when people identify with their group does the self–other overlap typical of social identity processes—and necessary for vicarious dissonance—occur (Hogg, 2000).

Because vicarious dissonance is driven by feelings of active identification with a member of an important group, distancing oneself from the speaker by denying shared group membership with or similarity to the speaker could serve as an avenue to reduce vicarious dissonance (see, e.g., Schimmel, Pyszczynski, Greenberg, O'Mahen, & Arndt, 2000). Another possible strategy for coping with the inconsistency of another might be to increase the psychological distance with the speaker by viewing her as an atypical group member, a process sometimes referred to as "refencing" (Allport, 1954). To test these two possibilities, in Studies 1 and 2 we included postmanipulation measures of participants' level of identification with their group, and also asked participants to judge the speaker's typicality as a group member. In both studies, we found no evidence that participants were using either distancing strategy. Although it is possible that this was offered too late as a route to dissonance reduction to be given a fair test, it is also possible that distancing is simply not an effective means of reduc-

ing vicarious dissonance. Given the importance of ingroups to high identifiers' self-concepts, the route of changing one's own level of identification is psychologically problematic. It might be easier, however, for people to focus selectively on an alternative identity as a means of dissonance reduction, just as they do to avoid unflattering social comparison (Mussweiler, Gabriel, & Bodenhausen, 2000). For example, if female participants who cared both about their status as women and their status as college students observed a male student engaged in dissonant behavior, they might simply stress their female identity and deemphasize their student identity to reduce vicarious dissonance. Although the current investigation focuses on attitude change as a means of vicarious dissonance reduction, people may have some flexibility in coping with the inconsistency of others.

### *Culture and Vicarious Dissonance*

In recent years, investigators have had difficulty replicating personal dissonance findings in cultures that put less emphasis on an individualistic construal of the self (e.g., Heine & Lehman, 1997). Whether cognitive dissonance is conceptualized as cognitive inconsistency (Festinger, 1957; Harmon-Jones et al., 1996) or as a threat to the self (Steele, 1988; Stone & Cooper, 2001; Thibodeau & Aronson, 1992), recent cross-cultural findings help elucidate these failures to replicate: East Asians think in more holistic ways than Westerners, making them more comfortable with contradiction (Peng & Nisbett, 1999) and inconsistency (Suh, 2002), and at the same time more willing to accept negative information about the self (Heine, Lehman, Markus, & Kitayama, 1999). Most relevant to this article, Heine and Lehman (1997) argued that individuals in more collectivist cultures may not experience dissonance because dissonance presupposes a stable independent self, whereas interdependent selves are defined in relationships with others, and are as a result more flexible (see Markus & Kitayama, 1991). Not surprisingly, then, paradigms that are most successful at eliciting dissonance in interdependent cultures implicate identified others. Sakai (1999), for example, obtained dissonance only when Japanese participants were paired with a fellow student who engaged in counterattitudinal behavior, whereas Kitayama, Snibbe, Markus, and Suzuki (2003) found that Japanese participants experienced dissonance only when reflecting on the preferences of their peers. Given research demonstrating that the attitudes of members of collectivist cultures are more influenced by the behavior of others than members of individualist cultures (Bond & Smith, 1996), it is possible that although personal dissonance typically may be a Western phenomenon, vicarious dissonance may be more prevalent in collectivist cultures.

### *Conclusion*

In the introduction, we suggested that personal attitude change is the best of a set of unattractive options for dealing with the inconsistency of others. In our studies, we find a mismatch between how participants say they would feel in the other's shoes and how they think the other is feeling. Similarly, we observe a change in participants' own attitudes, but this change is not related to change in the attitude ascribed to the other. Many dissonance experiments reveal that actors do experience increased psychological discomfort leading to attitude change, similar to the vicarious discomfort and attitude change exhibited by our participants, but

our participants seem unable to assess these accurately in others. It appears that participants are more skilled at estimating other people's feelings by imagining how they would feel in the other person's shoes than by attempting to predict others' thoughts and emotions directly. Thus, the tendency to adopt automatically the perspective of members of important groups, while having potential negative consequences (e.g., vicarious discomfort), may be a means of staying attuned to changing group norms, and may result in greater consonance within groups. Despite participants' erroneous impressions of actors, vicarious dissonance may ensure that actors and observers jointly experience the belief-altering consequences of inconsistency.

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