Journal of Personality and Social Psychology
2006, Vol. 91, No. 3, 423–435

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0022-3514/06/$12.00 DOI: 10.1037/0022-3514.91.3.423

Resisting Persuasion by the Skin of One's Teeth: The Hidden Success of Resisted Persuasive Messages

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Recent research has suggested that when people resist persuasion they can perceive this resistance and, under specifiable conditions, become more certain of their initial attitudes (e.g., Z. L. Tormala & R. E. Petty, 2002). Within the same metacognitive framework, the present research provides evidence for the opposite phenomenon—that is, when people resist persuasion, they sometimes become less certain of their initial attitudes. Four experiments demonstrate that when people perceive that they have done a poor job resisting persuasion (e.g., they believe they generated weak arguments against a persuasive message), they lose attitude certainty, show reduced attitude–behavioral intention correspondence, and become more vulnerable to subsequent persuasive attacks. These findings suggest that resisted persuasive attacks can sometimes have a hidden yet important success by reducing the strength of the target attitude.

Keywords: attitudes, persuasion, attitude strength, metacognition, certainty

Individuals are often resistant to persuasion. Whether a teenager continues smoking despite (or because of) her parents' attempts to curb her habit or a clinically depressed patient is unconvinced by his therapist's effort to change his view of himself, it is well-established that people can be remarkably resistant in the face of persuasive messages. Perhaps because of the pervasiveness of this phenomenon in everyday life, some attitude change researchers over the years have shifted from the traditional focus on successful persuasion to the explicit study of resistance to persuasion—that is, the act or process of defending one's attitude against persuasive attack (see Knowles & Linn, 2004). In research conducted in this domain, much has been learned. For example, it is now known that people tend to resist persuasion when they are forewarned of someone's persuasive intent (e.g., Hass & Grady, 1975; Papageorgis, 1968), when they feel that a persuasive message threatens their personal freedom (Brehm, 1966), and when their attitudes are particularly strong (Petty & Krosnick, 1995). We have also learned that there are a number of distinct mechanisms through which resistance can occur. For example, people can counterargue persuasive messages (e.g., Brock, 1967; Petty & Cacioppo, 1979a), bolster their initial attitudes (e.g., Lewan & Stotland, 1961; Lydon, Zanna, & Ross, 1988), or derogate the source of a persuasive message (e.g., Tannenbaum, Macauley, & Norris, 1966).

Of importance, though, virtually all of the research in this area has been guided by a fundamental assumption that when people resist persuasion—meaning their attitude has not moved in valence or extremity following a persuasive attack—there has been literally no change. In other words, it has been assumed that when a persuasive attack is resisted, that attack has made no impact on the target attitude. Recent research has contested this notion, suggesting that even when resisted persuasive attacks do not change the valence or extremity of target attitudes, they sometimes change the *certainty* with which those attitudes are held (Tormala & Petty, 2002).

Attitude certainty refers to the sense of conviction someone has about an attitude (Abelson, 1988) or to the extent to which someone views an attitude as correct, or valid (see Gross, Holtz, & Miller, 1995). The reason researchers have been interested in attitude certainty is that, like other dimensions of attitude strength, it has been associated with a variety of important outcomes. The less certain people are of their attitudes, the less likely those attitudes are to predict behavior (e.g., Fazio & Zanna, 1978), resist persuasive messages (e.g., Babad, Ariav, Rosen, & Salomon, 1987; Bassili, 1996; Wu & Shaffer, 1987), or simply persist over time (e.g., Bassili, 1996). Thus, if resisting persuasive attacks affects attitude certainty, target attitudes might sometimes change in their tendency to predict behavior and/or last over time. In the present research, we explore the impact of resistance to persuasion on attitude certainty from a metacognitive perspective based on people's perceptions of their own resistance and the conditions under which it occurs.

Metacognition and Resistance to Persuasion

Metacognition essentially refers to people's thoughts about and perceptions of their own cognitive states and processes (for reviews, see Bless & Forgas, 2000; Jost, Kruglanski, & Nelson, 1998; Petty, Briñol, Tormala, & Wegener, in press; Yzerbyt, Lories, & Dardenne, 1998). In recent work exploring the role of metacognition in resistance, we (Tormala & Petty, 2002) proposed that when people resist persuasion they can perceive this resistance, reflect on it, and form specifiable attribution-like inferences

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We thank members of the 2004–2005 Social Seminar Series at Indiana University and the 2002–2003 Group on Attitudes and Persuasion at Ohio State University for helpful feedback on this research at earlier stages.

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about their own attitudes. These inferences, in turn, affect attitude certainty. In an initial series of experiments, we gave participants a counterattitudinal persuasive message, which we instructed them to counterargue. Under some conditions, when participants resisted the message they became *more* certain of their attitudes than they were to begin with, and their attitudes became more predictive of behavioral intentions and more resistant to a subsequent persuasive attack. It is important to note, though, that these effects were obtained only when participants *perceived* that they had resisted and perceived that the message they resisted was strong. When participants perceived that they had not resisted or perceived that they had resisted a weak message, attitude certainty was unchanged. Follow-up research indicated that source credibility moderates this certainty increase in much the same way. Just as people become more certain of their attitudes when they believe they resisted a strong message, so too do they become more certain when they believe they resisted a highly credible source (Tormala & Petty, 2004b). Furthermore, these effects are generally confined to high-elaboration, or high-thought, situations (Tormala & Petty, 2004a).

In essence, our metacognitive point of view suggests that resisting persuasion only increases attitude certainty when people view their resistance as diagnostic of valid attitudes. When a strong message (or high-credibility source) is resisted, resistance presumably is considered diagnostic of validity. When a weak message (or low-credibility source) is resisted, resistance is less diagnostic of validity because ambiguity remains as to what would have happened in the face of a stronger message (or more credible source). Consistent with our metacognitive framework, we (Tormala & Petty, 2002, 2004a, 2004b) actually presented all participants with the same persuasive message but simply labeled it as *strong* or *weak* (or as coming from a high- or low-credibility source). Moreover, participants' counterarguments were analyzed in terms of number, quality, and general qualitative focus, and there were no differences along any of these dimensions in any of the experiments. Thus, people resisted the same message in the same way and to the same degree but reached very different conclusions about their attitudes (which led to different levels of attitude certainty), depending on their perceptions of their resistance and the situation in which it occurred. People became more certain of their initial attitudes when they were more impressed by their own resistance.

The Present Research

In contrast to the assumptions of prior resistance research, then, our earlier (Tormala & Petty, 2002, 2004a, 2004b) studies revealed that resisted persuasive messages can have an important, though previously hidden, impact on people's attitudes. Yet all of this research has focused on identifying the conditions under which attitude certainty is *increased* by resistance (see also McGuire, 1964). In the present research we seek to provide evidence for the opposite phenomenon. Consistent with our earlier framework, we take a metacognitive perspective and argue that when people resist persuasion, they can perceive this resistance, reflect on it, and form specifiable inferences about their attitudes that have implications for attitude certainty. We expand this framework, however, by exploring the conditions under which, and the mechanism through which, people can *lose* attitude certainty after resisting persuasion.

Why would certainty ever decrease when people resist persuasion? As a starting point, we suggest that after people receive and resist a persuasive message, they can think about and assess their own resistance performance. This assessment might yield a favorable appraisal when people think they did a good job resisting—for example, when they based their resistance on valid, or cogent, counterarguments. Alternatively, this assessment might yield an unfavorable appraisal when people think they did a bad job resisting—for example, when they based their resistance on invalid or specious counterarguments. Depending on people's appraisals, or evaluations, of their own resistance performance, we would expect to observe different levels of attitude certainty following initial resistance.

Of particular relevance to the present research, unfavorable appraisals of one's own resistance might lead to doubts about an attitude. Furthermore, and especially important to the metacognitive perspective, we posit that this effect can occur in the absence of any differences in one's actual resistance experience or performance. In other words, we submit that people can resist the same message in the same way and with the same objective success but be less certain of their attitudes when their postmessage assessment of their resistance performance leads them to think they did a bad job resisting. On the basis of what we know about attitude certainty, this effect would suggest that after initial resistance people's attitudes can become less predictive of behavior and less likely to fend off future persuasive attacks (see Gross et al., 1995, for a review). Thus, initial resistance might sometimes mask a hidden success with respect to target attitudes.

Experiment 1

The goal of Experiment 1 was to provide an initial test of our basic hypothesis that having doubts about one's resistance performance can undermine attitude certainty. In this study, we manipulated whether participants were able to fully communicate or articulate their arguments against a message after resisting that message. To induce the motivation to resist, we forewarned all participants at the outset of the study that they would receive a persuasive message that was personally relevant and counterattitudinal (Papageorgis, 1968; Petty & Cacioppo, 1979a, 1979b). To control the mechanism of resistance, we explicitly instructed all participants to generate counterarguments (Killeya & Johnson, 1998; Tormala & Petty, 2002).

Our primary hypothesis was that all participants would resist persuasion but hold their postresistance attitudes with varying levels of certainty depending on condition. When participants were able to fully articulate their counterarguments after the message, we expected them to have relatively high attitude certainty. When participants were unable to fully articulate their counterarguments, we expected them to have lower levels of attitude certainty. Such results would suggest that postmessage assessments of one's own resistance, including whether one was able to express the basis for that resistance, affect attitude certainty. A secondary goal in this study was to examine one of the well-known consequences of attitude certainty. Considerable research has demonstrated that high-certainty attitudes are more predictive of behavior than low-certainty attitudes (e.g., Fazio & Zanna, 1978; Tormala & Petty, 2002). In Experiment 1, then, we assessed the implications of certainty effects for attitude–behavior correspondence. For exper-

imental efficiency, we measured behavioral intentions, which are the single best predictor of actual behavior (e.g., Fishbein & Ajzen, 1975).

It is important to emphasize that although we expected certainty to decrease when people could not fully articulate their counterarguments, we did not expect attitude certainty to actually increase when participants fully articulated their counterarguments. Although past research has revealed that resistance sometimes increases attitude certainty, this effect has been confined to situations in which people resisted high-credibility sources (Tormala & Petty, 2004b) or messages labeled as strong (Tormala & Petty, 2002). In the present experiment, we made no reference to message strength or source credibility. Moreover, the message we used was moderate in strength, so participants' spontaneous assessments of message strength or source credibility would presumably be too low to foster increases in certainty.

Method

Participants and Procedure

Participants were 159 undergraduates from Indiana University who received partial credit for an introductory psychology course requirement. Each participant was randomly assigned to one of three experimental conditions. All sessions were conducted on computers using MediaLab (Jarvis, 2004) research software.

Participants were seated in a room containing six partitioned computer work stations. The experimenter asked participants to read the instructions on the monitors and begin the experiment. At the outset of the experiment, participants were led to believe their university had recently begun to consider the implementation of senior comprehensive exams as a graduation requirement (see Petty & Cacioppo, 1986). Participants were told that all students currently enrolled would have to pass these exams in order to graduate and that failure to pass the exams would mean taking remedial coursework before a degree could be conferred. This policy and the proposal in favor of it were intended to be counterattitudinal for most students. As justification for the experiment, participants were told that we were helping the university's Board of Trustees assess students' reactions to this policy. Along these lines, participants were told they would be presented with a summary of the proposal that had been written in favor of comprehensive exams, after which they would be asked to report their attitudes and any counterarguments they could generate against the exam policy. To induce counterarguing, we gave participants the following instructions:

> The University's Board of Trustees would like to gather all possible arguments that students can raise against the issue. Thus, we would like you to generate negative or unfavorable arguments against the exam policy after you read a summary of it. As you read the information, try to think of your counterarguments against it.

Following this introduction, participants were presented with a persuasive message in favor of comprehensive exams. This message contained more detailed versions of the following arguments (adapted from Petty & Cacioppo, 1986): Grades would improve if the exam policy were adopted, implementing the exams would allow the university to take part in a national trend, the average starting salary of graduates would increase, and the exam policy would allow students to compare their scores with students at other universities. A mixture of strong and weak arguments was included so the message would be moderately compelling overall, yet remain open to counterargument. After the message, participants completed the counterargument-listing task described next and responded to the dependent measures.

Counterargument Manipulation

Participants were randomly assigned to one of three counterargument conditions: the 10-s condition, the 60-s condition, or the control condition. This manipulation, adapted from time-pressure manipulations used in past research (e.g., Kruglanski & Freund, 1983), was designed to affect participants' ability to fully articulate their arguments against the comprehensive exam policy. In the 10- and 60-s conditions, instructions were as follows:

> As you were informed at the outset of this session, the Board of Trustees is interested in collecting the arguments students might raise against the comprehensive exam policy. We would now like to receive your thoughts. On the next screen appears the first of 4 boxes you can use to list your arguments against the senior comprehensive exam policy. Please list 4 different arguments against the exams, but enter only one argument per box.

Following these instructions, participants were told that the computer program running the experiment would automatically move them to the next screen after a preset time period for each counterargument. The amount of time allotted for each counterargument was ostensibly based on past studies conducted in our laboratory. Participants were led to believe most students could easily finish in the time provided. The purpose of this information was to minimize external attributions for not completing the counterargument task. Following this information, participants received either 60 s or 10 s to list each counterargument. Pretesting indicated that this would be sufficient and insufficient for most participants, respectively.

A third group of participants was randomly assigned to a control condition, in which they learned about comprehensive exams at the outset of the experiment but did not receive a persuasive message or any instructions to generate counterarguments. Instead, they read an irrelevant article that was similar in appearance and length to the exam message, after which they proceeded directly to the dependent measures. This condition provided a baseline for determining the direction of any attitude certainty effects as well as a test of whether resistance occurred in the first place. Resistance was indicated by attitudes in the message and counterargument conditions that did not differ from attitudes in the control condition.

Dependent Measures

Attitudes. Immediately following the persuasive message and counterarguing procedure (or immediately following the irrelevant article in the control condition), participants reported their attitudes toward the comprehensive exam policy on a series of semantic differential scales ranging from 1 to 9 with the following anchors: *bad–good*, *negative–positive*, *unfavorable–favorable*, *against–in favor*, *harmful–beneficial*, and *foolish–wise*. Higher numbers reflected more favorable attitudes toward comprehensive exams. Internal consistency was high ($\alpha = .93$), so responses were averaged to form a composite attitude index.

Attitude certainty. After reporting attitudes, participants completed the attitude certainty measure. One global item (adapted from past research; Fazio & Zanna, 1978) asked participants how certain they were of their attitudes toward comprehensive exams. Responses were provided on a scale ranging from 1 to 9 and anchored at *not certain at all* and *extremely certain*.

Behavioral intentions. After the certainty measure, we assessed behavioral intentions. We told participants that in the future we would be recruiting people to write letters to students to inform them of the benefits of the exam policy. Participants were then asked to indicate how many letters they would be willing to write to assist in this endeavor (this measure was adapted from Tormala & Petty, 2004b). Responses were provided on a scale ranging from 1 to 9, with 1 labeled *0 letters*, 2 labeled *1–5 letters*, and so on, up to 9, which was labeled *36–40 letters*.

Self-reported elaboration. By manipulating counterargument time after exposure to the message, we intended to control for elaboration *during*

the message. Nevertheless, it was possible that participants would (retrospectively) feel that their processing of the message was diminished in the 10-s condition. If true, this effect might account for differences in attitude certainty without requiring any metacognitive assessment of one's resistance performance. To assess perceived elaboration, we asked participants in the 10-s and 60-s conditions to report how deeply they thought about the proposal, how much effort they put into reading the proposal, and how personally involved they felt with the exam issue. Participants responded on scales ranging from 1 to 9, with higher numbers indicating more elaboration. Responses were highly reliable ($\alpha = .82$), so we averaged them to form a composite index.

Results

Attitudes

We began by submitting the attitude data to analysis to determine whether participants resisted persuasion equivalently across conditions. The attitude data were submitted to a one-way analysis of variance (ANOVA) with counterargument condition as the independent variable. As illustrated in Table 1, there were no differences in attitudes across conditions ($F < 1$).

Attitude Certainty

We next submitted the attitude certainty data to the same one-way ANOVA. In contrast to the attitude data, there was a significant effect of counterargument condition on attitude certainty, $F(2, 156) = 6.68$, $p < .002$. As displayed in Table 1, participants were less certain of their attitudes in the 10-s condition than in the 60-s or control conditions, $F(1, 156) = 13.24$, $p < .001$, which did not differ from each other ($F < 1$).

Behavioral Intentions

We then examined the behavioral intention data. To begin with, there were no differences in letter-writing intentions across the control ($M = 2.09$, $SD = 1.77$), 60-s condition ($M = 1.92$, $SD = 1.69$), and 10-s condition ($M = 1.70$, $SD = 0.97$), $F < 1$. As shown in Table 1, however, there were differences in attitude–behavioral intention correspondence across conditions. Attitudes significantly predicted letter-writing intentions in the control condition ($r = .35$, $p < .02$) and the 60-s condition ($r = .37$, $p < .01$), in which certainty was relatively high, but not in the 10-s condition ($r = .05$, $p = .72$), in which certainty was relatively low. Following the certainty pattern, the correlation was lower in 10-s condition than in the 60-s and control conditions ($z = 1.94$, $p = .05$), which did not differ from each other ($z = 0.12$, $p > .90$).

Table 1
Attitudes, Attitude Certainty, and Attitude–Behavioral Intention Correspondence as a Function of Counterargument Condition in Experiment 1

	Counterargument condition		
Dependent measure	Control	10 s	60 s
Attitudes			
M	4.87_a	4.81_a	4.59_a
SD	1.84	1.39	1.61
Attitude certainty			
M	6.08_a	5.09_b	6.19_a
SD	1.75	1.71	1.62
Attitude–behavioral intention correspondence			
r	$.35_a$	$.05_b$	$.37_a$

Note. All scales ranged from 1 to 9. Subscripts should be interpreted within rows only; means with the same subscript do not differ from each other.

Self-Reported Elaboration

Finally, we submitted the perceived elaboration index to analysis. Perceived elaboration was equivalent in the 10-s ($M = 5.87$, $SD = 1.92$) and 60-s ($M = 6.01$, $SD = 1.58$) conditions ($F < 1$). As intended, though, the overall level of elaboration ($M = 5.94$, $SD = 1.75$) was significantly higher than the midpoint (5) of the elaboration index, $t(105) = 5.55$, $p < .001$.

Discussion

Experiment 1 provided initial evidence for the certainty reduction hypothesis. To begin with, participants resisted persuasion. In neither of the message conditions were attitudes any more favorable than in the control condition, in which no persuasive message was presented. This finding is telling given that both the persuasive message and the attitude measure in this experiment have been used to show evidence of successful persuasion in past research (e.g., Petty, Briñol, & Tormala, 2002). Therefore, null effects on attitudes do not likely reflect a message or measure incapable of showing attitude change. Most germane to the present concerns, people became less certain of their attitudes after resisting persuasion if they were unable to fully articulate their counterarguments—that is, their reasons for resisting. When people were able to fully articulate their counterarguments, they maintained a relatively high degree of attitude certainty. As in past research on attitude certainty, this effect had implications for attitude–behavioral intention correspondence. When certainty was lowered (10-s condition), attitudes became less predictive of behavioral intentions. When certainty was maintained at a higher level (60-s condition), however, attitudes were as good in predicting behavioral intentions as they were in the control condition. Overall, this pattern of results suggests that if people have doubts about their resistance performance after processing a message, they may doubt the attitude they formed in response to that message and, thus, be less reliant on that attitude in determining future behavior.

It is interesting to note that past research has shown that curtailing counterarguments during message processing can foster persuasion (Petty, Wells, & Brock, 1976). We did not expect to find differences in actual persuasion in the present study, because our participants were able to process and think of counterarguments freely during receipt of the message. That is, participants were instructed to generate counterarguments as they processed the message and, presumably, had little trouble doing so, resulting in resistance across conditions. We manipulated participants' ability to express their counterarguments after the message, which presumably affected postresistance assessments of their performance, leaving attitudes intact but affecting the certainty with which those attitudes were held.

Finally, it is worth noting a caveat to the findings of Experiment 1 involving participants' counterarguments. We argue that even when people generate the same profile of counterarguments, they can interpret their resistance very differently depending on other situational factors. Because of a programming error, counterarguments were not saved by the computer in the 10-s condition of the present experiment. Consequently, we were unable to analyze the counterargument data. Nevertheless, given the nature of the 10- versus 60-s manipulation, we assume there were substantial differences in the actual content of counterarguments listed. In particular, it seems unlikely that participants listed counterarguments of the same quality across conditions. They may have generated the same quality of counterarguments during the message, but likely did not list equivalent arguments in the thought-listing task. To provide stronger evidence for the "pure" metacognitive perspective, which suggests that the certainty effects we observed can stem from subjective perceptions of counterarguments in the absence of any objective differences, we conducted a second experiment that did not constrain the counterargument listing procedure in any way.

Experiment 2

In Experiment 2, we sought to manipulate people's perceptions of their counterarguments without varying the actual nature of the counterarguments listed. In short, we allowed participants to list as many counterarguments as they wanted and gave all participants unlimited time to do so. After the counterargument procedure, we gave participants false feedback that their counterarguments were either strong or weak. Otherwise, this experiment was essentially the same as the first, with a few minor exceptions. We expected that when participants resisted using what they were led to believe were weak counterarguments, they would show evidence of decreased attitude certainty. When participants resisted using what they were led to believe were strong counterarguments, we expected them to maintain a relatively high degree of certainty.

Method

Participants and Procedure

Thirty-five undergraduates from Ohio State University participated in partial fulfillment of a course requirement. This experiment was essentially the same as Experiment 1, conducted on computers and involving the comprehensive exam policy, but there were a few exceptions. First, there were no constraints on participants' counterarguments in this experiment. All participants were instructed to list as many counterarguments as they could, and they were given unlimited time to do so. Thus, because of random assignment, we expected participants to have equivalent counterarguments across conditions. Second, rather than manipulating the amount of time participants had to list counterarguments, we gave participants false feedback with respect to the quality of their counterarguments. Participants received this feedback immediately after listing their counterarguments but before completing any dependent measures. Third, we removed the control condition from the experiment and instead used a repeated measures design. Early on in the session, after participants had been introduced to the comprehensive exam policy but before they received a message, they reported their attitudes and attitude certainty. Later, after reading the message, listing counterarguments, and receiving false feedback, participants completed the same measures again, along with behavioral intentions.

False Feedback Manipulation

Immediately after listing counterarguments, participants were randomly assigned to receive feedback that their counterarguments were either strong and convincing or weak and unconvincing. Preceding this feedback was an instruction screen explaining that we had recently collected counterarguments in response to the exam policy from a representative sample of approximately 900 other students. Participants then read that the computers running the current experiment were programmed to analyze counterarguments by comparing them with other counterarguments collected in our lab and that these computers could determine a number of things about participants' counterarguments as a result of this analysis. Participants were instructed that when they clicked *continue* the computer would analyze the counterarguments they had entered and provide a summary of the results of this analysis. When participants clicked *continue*, a message reading "Please wait . . . The computer is processing your counterarguments" appeared on the screen for 10 s. Then, the following passage appeared at the top of the screen:

> Below, you are presented with your *counterargument index*. This index reflects the computer's analysis of the counterarguments you have generated against comprehensive exams. This index can range from *1–10*. If your index is *greater than 5*, that indicates that your counterarguments were relatively strong. If your index is *5 or less*, that indicates that your counterarguments were not strong. You will only see this number once.

At the bottom of the same screen, participants received their counterargument index. In the strong counterargument condition, participants were told that their counterargument index was 9, which indicated that they had generated strong and convincing counterarguments. In the weak counterargument condition, participants were told that their counterargument index was 2, which indicated that their counterarguments were weak and unconvincing.

Dependent Measures

Attitudes. As described above, participants reported their attitude toward comprehensive exams twice: once before the message and once after reading the message and listing counterarguments against it. Because of the repeated assessment of attitudes, we streamlined these measures by having participants complete just a single semantic differential scale at each time point. This scale ranged from 1 to 9, anchored at *unfavorable* and *favorable*, respectively.

Attitude certainty. After reporting attitudes each time, participants completed the measure of attitude certainty from Experiment 1. Responses were provided on a scale ranging from 1 to 9, with *not certain at all* and *extremely certain* as the anchors.

Behavioral intentions. At the end of the experiment, we included a measure of behavioral intentions similar to the measure used in Experiment 1. We told participants that in the future we would be seeking students to make phone calls to other undergraduates telling them about the benefits of the exam policy. Participants were asked how much time they would be willing to devote to this task. Responses were given on a scale ranging from 1 to 9, with 1 labeled *0 time*, 2 labeled *1–5 minutes*, and so on, up to 9, which was labeled *36–40 minutes*.

Results

Counterarguments

One objective in Experiment 2 was to establish the equivalence of counterarguments. We assessed both the number and quality of counterarguments listed. As expected, given that the counterargument task preceded the manipulation, participants generated the

same number of counterarguments in the strong ($M = 2.65$, $SD = 1.50$) and weak ($M = 2.50$, $SD = 1.62$) feedback conditions, $t(33) = -0.28$, $p > .78$. To assess counterargument quality, two judges, blind to condition and hypothesis, rated each counterargument on a 1 to 9 scale, anchored at *very weak* and *very strong*. We averaged the ratings for each participant to form two counterargument indices: one for the first judge and one for the second judge. The judges' ratings were highly correlated ($r = .76$, $p < .001$), so we averaged them to form an overall quality index. Counterarguments were rated equally in the strong ($M = 3.86$, $SD = 1.45$) and weak ($M = 4.28$, $SD = 1.70$) feedback conditions, $t(30) = 0.74$, $p > .46$.[1]

Attitudes

Attitudes were submitted to a 2 × 2 mixed ANOVA, with time of measurement (Time 1 or Time 2) and counterargument feedback (strong or weak) as the within- and between-participants variables, respectively. As revealed in the top panel of Figure 1, this analysis failed to produce any effects (all Fs < 1).

Attitude Certainty

We submitted the certainty data to the same mixed ANOVA. Although the main effect for counterargument feedback was not significant ($F < 1$), there was a significant main effect for time of measurement, $F(1, 33) = 11.90$, $p < .01$. Participants were less certain of their attitudes after ($M = 5.91$, $SD = 2.11$) rather than before ($M = 6.89$, $SD = 2.10$) the message. However, this main effect was qualified by a significant interaction between counterargument feedback and time of measurement, $F(1, 33) = 4.72$, $p < .04$. As illustrated in the bottom panel of Figure 1, the decrease in attitude certainty was confined to participants who were led to believe their counterarguments were weak, $F(1, 33) = 16.27$, $p < .001$. When participants were led to believe their counterarguments were strong, there was no change in attitude certainty ($F < 1$).

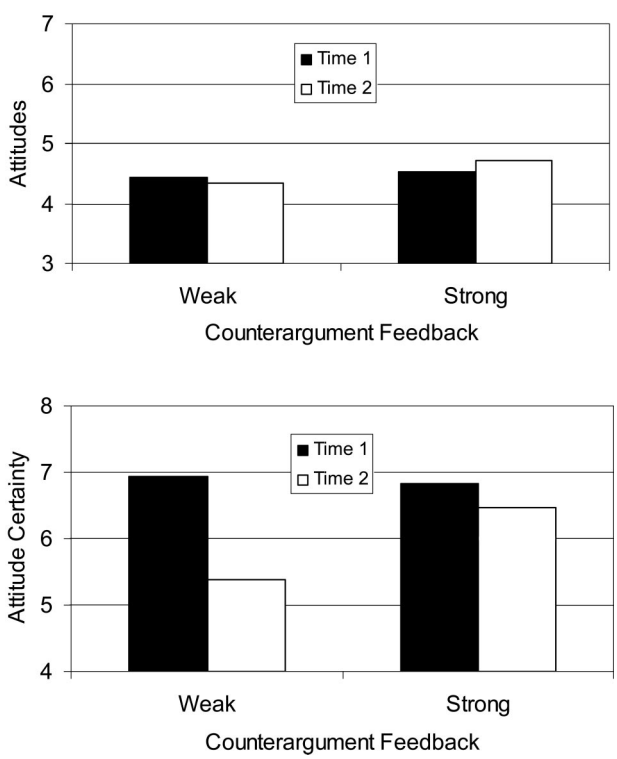

Figure 1. Attitudes (top panel) and attitude certainty (bottom panel) as a function of counterargument feedback and time of measurement in Experiment 2.

Behavioral Intentions

We submitted behavioral intentions to a hierarchical regression analysis with Time 2 attitudes and counterargument feedback as predictors in the first step and their interaction in a second step. Overall, there was a positive correlation between attitudes and behavioral intentions, $\beta = .32$, $t(32) = 1.96$, $p < .06$, but no effect of counterargument feedback, $\beta = .24$, $t(32) = 1.48$, $p > .14$. Most important, the Attitude × Feedback interaction was marginally significant, $\beta = .66$, $t(31) = 1.81$, $p < .08$. As predicted, participants' attitudes were significant predictors of their willingness to help promote the exam policy in the strong counterargument condition ($r = .51$, $p < .04$) but not in the weak counterargument condition ($r = .07$, $p > .78$).

Discussion

Experiment 2 revealed that people can become less certain of their attitudes following resistance to persuasion when they are told they have resisted using specious counterarguments. Moreover, this effect has implications for the correspondence between attitudes and behavioral intentions; the less certain people become of their attitudes, the less these attitudes predict behavioral intentions. These results extend the findings of the first experiment in important ways. First, they highlight another metacognitive perception that can affect attitude certainty when people think about their own resistance. Apparently, being led to believe that one based one's resistance on weak counterarguments casts doubt on the attitude that has just been defended. The results of Experiment 2 are also important in demonstrating that these effects can occur in the absence of any differences in people's actual resistance. People resisted the same message in the same way and to the same degree but reached different conclusions about their attitudes depending on manipulated appraisals of their resistance performance.

One question that might be raised with respect to Experiment 2 is whether participants actually resisted persuasion or simply felt pressure to report the same attitude from Time 1 to Time 2 to avoid appearing inconsistent. This pressure might have been especially acute given that only one (and the same) attitude item was used each time. Although it is impossible to know for sure why participants did not change, we believe this lack of change reflected true attitudinal resistance. After all, the message was personally relevant and counterattitudinal, all participants were forewarned of it, and all participants were instructed to generate counterarguments. As reviewed earlier, these conditions are well documented as

[1] There were fewer degrees of freedom in the analysis of counterargument quality because 3 participants listed no counterarguments. These participants were coded as listing zero arguments in the number analysis but could not be included in the quality analysis.

fostering resistance to persuasion. Furthermore, we probed for suspicion at the end of the experiment, and not a single participant expressed any doubts about our cover story. In other words, no one indicated that we might be studying resistance or that we wanted them to resist. Finally, if strong consistency pressures were operating, participants should have reported the same certainty at Time 1 and Time 2, which they did not. In any case, to remove concern about potential consistency pressures, we returned to a between-participants design (using a control condition) in the next experiment.

Experiment 3

Whereas past research has focused on increased attitude certainty following resistance to persuasion (Tormala & Petty, 2002, 2004a, 2004b), Experiments 1 and 2 revealed that resisted persuasive attacks can sometimes have a hidden success when attitude certainty is undermined. In Experiment 3 we attempted to reconcile the present findings with our own past research by producing both increases and decreases in attitude certainty following resistance to persuasion. To do so, we manipulated perceived counterargument strength and the perceived expertise of the source of a message. Consistent with Tormala and Petty (2004b), we expected that attitude certainty would be particularly likely to increase when people were led to believe they generated strong counterarguments against an expert (rather than nonexpert). Extending this finding, we predicted that attitude certainty would be particularly likely to decrease when people were led to believe they generated weak counterarguments against a *non*expert (rather than expert). In short, we predicted main effects for both perceived counterargument strength and source credibility on attitude certainty, indicating the highest level of certainty when people were given the perception that they generated strong arguments against an expert and the lowest level of certainty when people were given the perception that they generated weak arguments against a nonexpert.

Method

Participants and Design

Eighty-nine Indiana University undergraduates participated in partial fulfillment of a course requirement. Participants were randomly assigned to conditions in a 2 (counterargument feedback: strong or weak) × 2 (source credibility: high or low) + 1 (external control condition) between-participants design.

Procedure

This experiment was very similar to Experiment 2, with two important modifications. First, we manipulated source credibility as in Tormala and Petty (2004b). Second, we removed Time 1 measures and reinserted a control condition for directional comparisons. Otherwise, this experiment was essentially the same. All sessions were conducted on computers, and participants read the same proposal in favor of comprehensive exams, after which they generated as many counterarguments as they could. After listing counterarguments, participants received false feedback about the strength of their arguments and completed dependent measures.

Independent Variables

Counterargument feedback. Participants were randomly assigned to receive false feedback that the counterarguments they generated against the comprehensive exam message were strong or weak. This manipulation was identical to that used in Experiment 2.

Source credibility. The source credibility manipulation was presented on a screen that immediately preceded the persuasive message, and it appeared again at the top of the screen containing the message. In the high-credibility condition, participants were led to believe the proposal was written by "The Faculty Committee on Academic Affairs at Indiana University, which is made up of six highly regarded professors from Educational Science and other related fields." In the low-credibility condition, participants were led to believe the proposal was written by "Cindy Ross, a part-time Instructor at Southern Appalachian State Community Technical College." Past research using the same manipulation has shown these sources to be high and low in perceived expertise, respectively (Tormala & Petty, 2004b).

Control condition. A subset of participants (n = 19) was randomly assigned to a control condition, included to provide a baseline for the attitude and certainty data. In this condition, participants were given the same basic introduction to the experiment and the same initial information about comprehensive exams. Following this information, control participants read a neutral article that was similar in appearance and length to the comprehensive exam message but completely unrelated to the exam topic, after which they proceeded to the dependent measures. Control participants were not asked to list any counterarguments.

Dependent Measures

Attitudes. Following the persuasive message and counterargument procedure (or directly following the irrelevant article in the control condition), participants rated comprehensive exams on a series of semantic differential scales ranging from 1 to 9 with the following anchors: *bad–good*, *negative–positive*, *unfavorable–favorable*, *unpleasant–pleasant*, *harmful–beneficial*, and *foolish–wise*. Higher numbers indicated more favorable evaluations of the exam policy. Responses were highly consistent (α = .94), so we averaged them to form a composite attitude index.

Attitude certainty. Attitude certainty was assessed using the same global item as in the first two experiments.

Results

Counterarguments

Because control participants did not list counterarguments, the counterargument data were submitted to 2 (counterargument feedback) × 2 (source credibility) ANOVAs. We began with the number of counterarguments. There was a tendency for participants to generate more counterarguments against the high-credibility (M = 3.20, SD = 2.11) rather than low-credibility (M = 2.63, SD = 1.09) source (see also Bohner, Ruder, & Erb, 2002; Hass, 1981), but this difference was not significant, $F(1, 66)$ = 2.18, $p > .14$. No other effects even approached significance (Fs < 1.19, ps > .28). Two judges rated the quality of participants' counterarguments using the same approach as in Experiment 2. The judges' ratings were significantly correlated (r = .86, p < .001), so we averaged them. This index revealed no significant effects (all Fs < 1).

Attitudes

Given the design of this experiment (i.e., 2 × 2 + 1), and the fact that we predicted no differences in attitudes across conditions, we submitted the attitude data to a one-way ANOVA, treating all five experimental conditions as different levels of the same factor. There were no differences in attitudes across conditions, F(4,

84) = 0.52, $p > .72$. Furthermore, individual post hoc comparisons revealed that in none of the message conditions were attitudes any more favorable ($4.10 < M\text{s} < 4.67$) than they were in the control condition ($M = 3.98$), $p\text{s} > .78$.

Attitude Certainty

We analyzed the certainty data (Figure 2) in a two-pronged fashion. First, we conducted a 2 × 2 ANOVA with counterargument feedback (strong or weak) and source credibility (high or low) as the independent variables. This analysis revealed a significant main effect for counterargument feedback, $F(1, 66) = 4.98$, $p < .03$, such that participants were more certain of their attitudes when they were told they resisted using strong ($M = 6.50$, $SD = 1.78$) rather than weak ($M = 5.58$, $SD = 1.61$) counterarguments. There was also a main effect for source credibility, $F(1, 66) = 13.56$, $p < .001$. Participants were more certain of their attitudes after resisting a source who was high ($M = 6.74$, $SD = 1.42$) rather than low ($M = 5.31$, $SD = 1.76$) in expertise. There was no interaction between these variables ($F < 1$).

To determine the direction of these effects, we reinserted the control condition and analyzed the data separately for the perceived strong and weak counterargument participants. Selecting for the strong feedback condition (plus control), there was a significant effect of source credibility on attitude certainty, $F(2, 50) = 3.45$, $p < .05$. Certainty was greater in the high-credibility condition than in the low-credibility or control conditions, $F(1, 50) = 6.80$, $p < .02$, which did not differ from each other ($F < 1$). Selecting for the weak feedback condition (plus control), there was also a significant effect of source credibility on attitude certainty, $F(2, 52) = 3.62$, $p < .04$. Certainty was lower in the low-credibility condition than in the high-credibility or control conditions, $F(1, 52) = 7.02$, $p < .02$, which did not differ from each other ($F < 1$).

Discussion

The results of Experiment 3 extend the findings of the first two experiments by identifying conditions under which resistance can be followed by increases and decreases in attitude certainty. Consistent with our earlier findings (Tormala & Petty, 2002, 2004b), resistance appears to affect attitude certainty primarily when resistance is diagnostic of attitude validity. When people are told they have done a good job resisting (i.e., they have made strong counterarguments), they only become more certain of their attitudes when they perceive that they have resisted an expert. Indeed, if one handily resists an attack from an expert, one can assume that his or her attitude was already correct, or valid. This assumption cannot be made as confidently about an attitude that resists an attack from a nonexpert, because it is possible that an expert might have been more persuasive or presented better arguments.

When people are told they have done a bad job resisting (i.e., they have made weak counterarguments), they only become less certain of their attitudes when they perceive that they have resisted a nonexpert. In this case, performing poorly against a nonexpert is particularly diagnostic regarding the attitude's invalidity. Indeed, one who could think only of weak arguments against a nonexpert might have been persuaded by an expert. If a person performs poorly against an expert, on the other hand, he or she does not stand to lose certainty because a better performance could be assumed against any other source. In essence, we suspect that the certainty effect stems from postmessage perceptions of how successful one's resistance has been. These perceptions, in turn, appear to be affected by counterargument appraisals and source information.

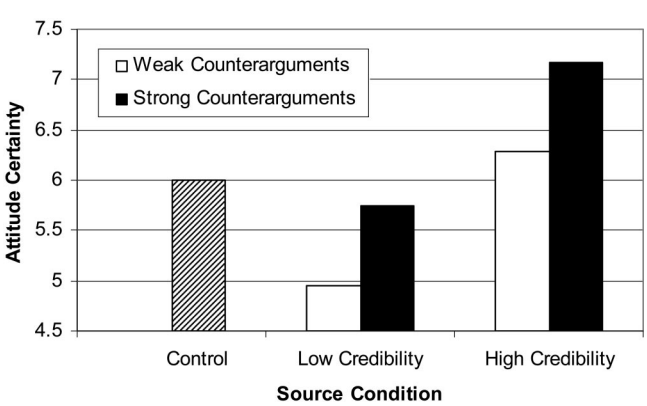

Figure 2. Attitude certainty as a function of counterargument feedback and source credibility in Experiment 3.

Experiment 4

Experiment 4 was designed to extend the findings of Experiment 3 in two ways. The primary objective was to provide mediational evidence for the metacognitive processes we have postulated to be responsible for the certainty effects. We predicted that when people were led to believe they had generated strong or weak arguments against an expert versus a nonexpert, they would perceive that their counterarguments had been differentially successful, which would then determine attitude certainty. A secondary objective of Experiment 4 was to explore the implications of initial resistance for attitude change in response to a second message. Along with attitude–behavior consistency, differential resistance to change is a well-documented feature of high versus low certainty attitudes (e.g., Bassili, 1996; Tormala & Petty, 2002; Wu & Shaffer, 1987). Applying past research to the current framework, we expected people to be most susceptible to a follow-up persuasive attack when they believed they had generated weak counterarguments against a nonexpert. Alongside reduced attitude certainty, such an effect would provide convergent evidence for the notion that attitudes can be weakened when people have doubts about their resistance performance.

Method

Participants and Procedure

Sixty-four Indiana University undergraduates participated in partial fulfillment of a course requirement. This experiment was a replication of Experiment 3, with a few exceptions. First, because this experiment focused on mediation of attitude certainty by participants' perceptions of their counterarguments, we did not include a control condition in the design. Second, to assess participants' perceptions of their own counterarguments, we included several new measures. Finally, to assess subse-

quent persuasion following initial resistance, we presented participants with a second persuasive message at the end of the experiment.

Participants received the initial persuasive message, generated counterarguments, and completed dependent measures (e.g., attitudes and attitude certainty) as in Experiment 3. Following these measures, participants engaged in a filler task. This task involved a word association procedure, in which 15 words were presented one at a time on the computer screen. Participants were instructed to type the first word that came to mind for each word displayed. The specific words presented were completely unrelated to the experiment and were neutral in valence (e.g., *gravity*, *lamp*). Following this task, participants read that we would now present them with additional information about comprehensive exams from a recent report by the Educational Testing Service. We indicated a new source for this information to dispel any inkling participants had that the second message came from the same source as the first message. Participants then read three new, strong arguments in favor of comprehensive exams (adapted from Petty & Cacioppo, 1986; e.g., implementing comprehensive exams would increase the quality of teaching), after which they again reported their attitudes toward the comprehensive exam policy. There were no counterargument instructions or thought-listing measures associated with the second message.

Design and Independent Variables

Participants were randomly assigned to conditions in a 2 (counterargument feedback: strong or weak) × 2 (source credibility: high or low) between-participants design. The manipulations were identical to the manipulations used in Experiment 3.

Dependent Measures

Time 1 attitudes: Initial resistance. Following the initial persuasive message and counterarguing procedure, we assessed attitudes using the same six items as in Experiment 3. Responses were highly consistent (α = .95), so we averaged them to form a composite index.

Attitude certainty. Following the attitude measure, we assessed attitude certainty using three items: How certain are you of your attitude toward senior comprehensive exams? How convinced are you of your opinion on senior comprehensive exams? How much confidence do you have in your attitude toward senior comprehensive exams? Responses were given on scales ranging from 1 to 9 with the following anchors: *not certain at all–extremely certain*, *not convinced at all–extremely convinced*, and *no confidence at all–very high confidence*. Multiple scales were used in this experiment to create a more reliable index for the mediational analysis. Responses were averaged to form a composite index (α = .93).

Perceived strength of counterarguments. To assess counterargument perceptions, participants were asked to report how strong or weak they felt their counterarguments were, how effective or ineffective they felt their counterarguments were, how successful or unsuccessful they felt they were in counterarguing the message, and how satisfied or unsatisfied they were with their counterarguments (items adapted from Tormala & Petty, 2002). Participants responded on scales ranging from 1 to 9, with the following anchors: *very weak–very strong*, *very ineffective–very effective*, *very unsuccessful–very successful*, and *very unsatisfied–very satisfied*. Each item was scored such that higher numbers reflected more favorable assessments. Responses were averaged to form a composite index (α = .93).

Attitude change. Following the second persuasive message, participants again reported their attitudes toward comprehensive exams, this time on a single scale ranging from 1 to 9 and anchored at *bad* and *good*, respectively. To create an index of attitude change in response to the second message, we subtracted Time 1 attitudes from Time 2 attitudes using the single shared item between these assessments (i.e., the bad–good semantic differential). Higher attitude change scores reflected more persuasion.

Results

Initial Attitudes and Attitude Certainty

We began by submitting attitudes following the first message to a 2 × 2 ANOVA with counterargument feedback (strong or weak) and source credibility (high or low) as the independent variables. As in the previous studies, there were no differences in attitudes across conditions (Fs < 1). On the attitude certainty index, however, a different pattern emerged. As illustrated in Table 2, there was a main effect for counterargument feedback, $F(1, 60) = 7.02$, $p = .01$, such that attitude certainty was higher in the strong (M = 7.00, SD = 1.46) than in the weak (M = 5.84, SD = 1.66) feedback condition. There was also a main effect for source credibility, $F(1, 60) = 4.99$, $p < .03$; attitude certainty was greater in the high- (M = 6.89, SD = 1.47) than in the low- (M = 5.85, SD = 1.70) credibility condition. There was no interaction between these variables ($F < 1$).

Perceived Strength of Counterarguments

We submitted the perceived counterargument strength index to the same 2 × 2 ANOVA and found the predicted main effects for both source credibility, $F(1, 60) = 5.34$, $p < .03$, and counterargument feedback, $F(1, 60) = 46.93$, $p < .001$. As illustrated in Table 2, participants rated their own counterarguments as stronger in the strong (M = 7.42, SD = 1.22) than in the weak (M = 4.62, SD = 1.86) feedback condition and stronger in the high- (M = 6.58, SD = 1.82) than in the low- (M = 5.23, SD = 2.21) credibility condition. There was no interaction ($F < 1$). To test whether counterargument perceptions mediated the attitude certainty effects, we conducted a 2 × 2 analysis of covariance (ANCOVA) on attitude certainty, treating perceived counterargument strength as a covariate. Controlling for perceived counterargument strength, neither source credibility, $F(1, 59) = 1.96$, $p >$

Table 2
Attitudes, Attitude Certainty, Perceived Counterargument Strength, and Attitude Change as a Function of Source Credibility and Weak or Strong Counterargument Feedback in Experiment 4

	Low source credibility		High source credibility	
Dependent measure	Weak	Strong	Weak	Strong
Attitudes				
M	4.25	4.38	4.69	4.03
SD	1.29	2.05	2.34	2.13
Attitude certainty				
M	5.39	6.58	6.42	7.28
SD	1.64	1.60	1.54	1.33
Perceived CA strength				
M	4.05	7.10	5.33	7.63
SD	1.77	1.42	1.77	1.55
Attitude change				
M	1.58	0.67	0.60	0.06
SD	2.17	0.78	1.06	1.39

Note. All scales ranged from 1 to 9. Attitudes refer to initial attitudes measured after the initial message and counterargument procedure. CA = counterargument.

.16, nor counterargument feedback ($F < 1$) had a significant effect on attitude certainty. The interaction was also nonsignificant ($F < 1$). Consistent with the mediation hypothesis, however, perceived counterargument strength was a significant predictor in this analysis, $F(1, 59) = 9.75$, $p < .01$.[2]

Time 2 Attitudes: Subsequent Resistance

Finally, we submitted the attitude change index to analysis. To begin with, there was a significant main effect for source credibility, $F(1, 60) = 4.20$, $p < .05$; attitudes changed more in response to the second message when people initially resisted a low- ($M = 1.23$, $SD = 1.80$) rather than a high- ($M = 0.30$, $SD = 1.26$) credibility source. There was also a marginal main effect for counterargument feedback, $F(1, 60) = 3.53$, $p < .07$; attitudes changed more when people thought they generated weak ($M = 1.15$, $SD = 1.81$) rather than strong ($M = 0.30$, $SD = 1.21$) counterarguments to the first message. There was no interaction between these variables ($F < 1$). As displayed in Table 2, attitude change was highest in the weak counterargument and low-credibility condition and lowest in the strong counterargument and high-credibility condition. In fact, the weak counterargument and low-credibility condition was the only one that showed significant change from Time 1 to Time 2, $F(1, 60) = 20.32$, $p < .001$. In none of the other conditions did attitudes change (ps $> .13$).

We also analyzed subsequent resistance by submitting Time 2 attitudes to an ANCOVA with source credibility and counterargument feedback as independent variables and Time 1 attitudes as a covariate. This analysis replicated the outcome with attitude change scores. First, Time 1 attitudes predicted Time 2 attitudes, $F(1, 59) = 99.27$, $p < .001$. More germane to the present concerns, both source credibility, $F(1, 59) = 3.56$, $p = .06$, and counterargument feedback, $F(1, 59) = 3.63$, $p = .06$, had marginally significant main effects on Time 2 attitudes, and there was no interaction ($F < 1$). In short, despite no differences in attitudes following the first message, attitudes following the second message were more favorable in the low ($M = 5.37$) than in the high ($M = 4.65$) source credibility condition, and they were more favorable in the weak ($M = 5.37$) than in the strong ($M = 4.65$) counterargument feedback condition. Including attitude certainty as an additional covariate in this analysis, neither source credibility nor counterargument feedback had a significant effect on Time 2 attitudes (ps $> .16$).

Discussion

The results of Experiment 4 were consistent with the notion that the certainty with which people held their attitudes after resisting a persuasive attack was determined by their postmessage appraisals of their counterargument performance. The more successful people thought their counterarguing was, the more certain they felt of their attitudes. This assessment of success, in turn, was affected by false feedback and the credibility of the source of the counterargued attack. This experiment also suggested that when people had low levels of attitude certainty following an initial attack, they were more susceptible to persuasion in response to a second attack from a different source. When people had high levels of attitude certainty following the initial attack, they were more resistant to the second attack. Thus, this experiment produced convergent evidence for the notion that people's initial attitudes can be weakened when they have doubts about their resistance performance.

As a caveat to our mediational analysis of the certainty effect (through perceived counterargument strength) in this experiment, it is worth noting that the perceived counterargument strength index directly followed the attitude certainty index. It is possible that the data supported our mediational hypotheses because participants rated the strength of their counterarguments in a way that would be consistent with the level of attitude certainty they had just reported. As noted already, these measures were highly correlated. We tested the mediation through counterargument perceptions to attitude certainty because this is the mediation that seemed most logical or plausible given our framework and the specific manipulations we used. That is, we assumed perceived counterargument strength would be the mediator because we directly manipulated it with false feedback. Thus, we felt that our approach was logically warranted.

To empirically validate this assumption, we tested the reverse mediational pathway. That is, we conducted a 2×2 ANCOVA on perceived counterargument strength, treating attitude certainty as the covariate. This analysis revealed that the reverse mediational pathway performed more poorly than did the pathway already tested. In particular, although the effect of source credibility on perceived counterargument strength became nonsignificant, $F(1, 59) = 2.28$, $p < .14$, the effect of the false feedback manipulation remained highly significant, $F(1, 59) = 35.15$, $p < .001$. In other words, whereas controlling for perceived counterargument strength makes the effect of false feedback on attitude certainty drop out ($F < 1$), controlling for attitude certainty leaves the effect of false feedback on perceived counterargument strength intact. Overall, then, the data tended to support the mediation of the certainty effect by perceived counterargument strength rather the opposite pattern.

General Discussion

The data from four experiments provided support for the idea that resisted persuasive attacks can sometimes have hidden success with respect to target attitudes. Specifically, when people resist persuasion but think they did a bad job resisting (e.g., because they are unable to articulate their counterarguments or they have the

[2] We also tested mediation using the Baron and Kenny (1986) technique. First, we considered source credibility. Source credibility had significant effects on attitude certainty, $\beta = .32$, $t(62) = 2.62$, $p = .01$, and perceived counterargument strength, $\beta = .32$, $t(62) = 2.67$, $p < .01$. Moreover, perceived counterargument strength predicted attitude certainty, $\beta = .54$, $t(62) = 4.98$, $p < .001$. When both source credibility and perceived counterargument strength were entered as predictors of certainty, perceived counterargument strength was significant, $\beta = .48$, $t(61) = 4.30$, $p < .001$, but source credibility was not, $\beta = .16$, $t(61) = 1.43$, $p > .15$. A Sobel test revealed a significant mediational pathway ($z = 2.20$, $p < .03$). We next examined counterargument feedback. Counterargument feedback had significant effects on certainty, $\beta = .35$, $t(62) = 2.95$, $p < .01$, and perceived counterargument strength, $\beta = .67$, $t(62) = 7.02$, $p < .001$. When both counterargument feedback and perceived counterargument strength were entered as predictors of certainty, perceived counterargument strength was significant, $\beta = .54$, $t(61) = 3.73$, $p < .001$, but counterargument feedback was not, $\beta = -.01$, $t(61) = -.06$, $p > .94$. Again, the mediational pathway was significant ($z = 3.33$, $p < .001$).

perception that their counterarguments are weak), they actually become less certain of their attitudes than they were initially. Furthermore, under the same conditions, people's attitudes become less predictive of behavioral intentions and less likely to withstand future persuasive attacks. People's appraisals of their own resistance, then, can actually weaken attitudes, reducing their predictive utility and durability.

The present experiments are the first to explore the possibility that attitude certainty, or attitude strength more generally, can be reduced through initial resistance. As described earlier, most past resistance research has been guided by an underlying assumption that when a persuasive message fails to change the valence or extremity of the target attitude, it exerts no impact on that attitude. Our recent studies (Tormala & Petty, 2002, 2004a, 2004b) undermined this assumption by demonstrating that resisted messages can sometimes backfire by making people more certain of the target attitudes than they already were.[3] Nevertheless, our research before this article had focused exclusively on the notion that attitude certainty can increase following resistance to persuasion. The current research expands our understanding of these effects by exploring the opposite phenomenon from the same metacognitive perspective.

As the current studies reveal, the direction of the certainty effect depends not only on people's perception and assessment of their resistance, but also on what, or who, people resist. When people perceive that they have done a good job resisting, for instance, they gain attitude certainty, but only when the message they resisted comes from a high-credibility source. Again, it is under these conditions that strong resistance is most diagnostic with respect to the validity of the attitude. As predicted, though, a very different pattern emerges when people perceive that they have done a bad job resisting. When people evaluate their own resistance performance as poor, they are particularly likely to lose certainty if the message they resisted comes from a low-credibility source. As discussed earlier, we assume that under these conditions weak resistance is especially diagnostic with respect to an attitude's invalidity.

New Questions

Although the current findings clearly fit with and extend our metacognitive framework for understanding resistance to persuasion, there are several important questions that remain to be answered. Ultimately, we see these questions as opening the door to new research that will expand our understanding of the current findings and the conditions under which they are most likely to emerge.

Mechanism of Resistance

One important task for future research will be uncovering additional factors that undermine certainty following resistance to persuasion. A particularly strong candidate in this regard may be the perceived legitimacy of the mechanism one uses to resist persuasion. As noted earlier, there are a variety of resistance strategies. Recent research by Jacks and Cameron (2003) has suggested that people have some awareness or perception of the strategies they use. We focused on counterarguing in the present research because this is an effective and well-established means of resistance (see Petty, Ostrom, & Brock, 1981). Counterarguing may be very different from other mechanisms, however, in that it is active and thoughtful, and it involves attention to core message arguments. Though such processing can be biased (Lord, Ross, & Lepper, 1979), it is likely to be perceived as a legitimate resistance mechanism.

Other resistance mechanisms might be perceived as less legitimate. When one thinks one has ignored a message or derogated its source, for instance, one may feel that he or she has been biased or has basically sidestepped message content (see Jacks & Cameron, 2003). This perception might provoke uncertainty as to whether one could have resisted if one had more thoughtfully processed message arguments. This feeling of uncertainty, in turn, could lead to doubts about the target attitude. Past research is generally consistent with this possibility, suggesting that people can assess the validity of their processing mechanism and that this assessment can affect subsequent processing and feelings of confidence (e.g., Mazursky & Schul, 2000; Yzerbyt, Schadron, Leyens, & Rocher, 1994; see also Chaiken, Liberman, & Eagly, 1989).

Resistance Versus Persuasion

Another important question, first asked after Experiment 1, is why people's perceptions of their resistance did not affect the degree of resistance versus persuasion. Intuitively, one might expect that the less favorable people's assessment of their own resistance is, the more persuaded they should be. In fact, there is substantial support for this type of effect. As described earlier, Petty et al. (1976) found that when participants' counterarguments were curtailed by a distraction manipulation, they were more persuaded by a message. More recently, research on the self-validation hypothesis (e.g., Petty et al., 2002; Tormala, Petty, & Briñol, 2002) has shown that inducing doubt about people's counterarguments to a persuasive message can produce more persuasion (relative to inducing confidence in those counterarguments).

The present research does not contest the notion that having doubt about one's resistant thoughts sometimes facilitates persuasion. Our position is that given that resistance already occurred, assessments of that resistance can affect attitude certainty. In other words, after resistance has occurred, people can reflect upon their resistance, assess their performance, and feel more or less certain of their attitudes. When this post hoc assessment of resistance leads to questioning the basis of an attitude (e.g., because the person now thinks the arguments supporting the attitude are weak), attitude certainty declines.

In the present experiments, people (on average) did resist persuasion, as indicated by the attitude data. We expected participants to resist, because the message was counterattitudinal, they were forewarned of it, and they were directed to counterargue. We assume that people reflected upon their resistance after this resistance had occurred. Had participants considered their resistance during message processing—that is, while attitudes were still being formed—we suspect that we would have obtained different

[3] McGuire (1964) also proposed that initial resistance could boost subsequent resistance, but the mechanism and explanation for these effects were very different from the current formulation (see Tormala & Petty, 2002, 2004a, for further discussions).

results. More specifically, if people had been made to doubt their resistance before consolidating their attitudes (e.g., by giving online feedback that counterarguments were weak), they might have been persuaded, as predicted by the self-validation hypothesis. This would be akin to findings in the ease of retrieval literature, in which it has been demonstrated that struggling to think of counterarguments before forming attitudes leads people to form more favorable attitudes (e.g., Tormala et al., 2002). We intend to explore this timing issue in future research.

Also relevant is the issue of whether people's postmessage assessments of their performance are restricted to situations in which they resist persuasion. That is, can postmessage appraisal processes also apply to situations in which people are persuaded by a message? We suggest that they can. For instance, Rucker and Petty (2004) found that when people try but fail to resist persuasion, they can reflect on this outcome and become more certain of their newly changed attitudes than they would be if they had not tried to resist in the first place. On the basis of findings such as these, we argue that postmessage attitude appraisal processes, as explored in the present research, are not unique to resistance but apply to resistance and persuasion scenarios more generally. The present research focused on a subset of these situations in which people resist persuasion and then become less certain of their attitudes. In conjunction with past studies (e.g., Rucker & Petty, 2004; Tormala & Petty, 2002), we view the present research as fitting into a larger metacognitive framework for understanding people's perceptions of their own persuasion versus resistance and the implications of these perceptions for attitude certainty (see also Petty, Tormala, & Rucker, 2004).

Conclusion

Past research on resistance has largely been conducted under the assumption that when a persuasive message fails to change the valence or extremity of a target attitude, it simply has been unsuccessful. As a result of this assumption, very little is known about the effects of resisted persuasive messages on people's attitudes. What is known suggests that resisting persuasion can make attitudes stronger (Tormala & Petty, 2002, 2004a, 2004b; see also McGuire, 1964). The present research demonstrates for the first time the opposite phenomenon—that is, when people have doubts about their resistance they can become less certain of their attitudes. This effect is important as it suggests that in some situations "failed persuasion" can mask a hidden success that ultimately worsens an attitude's predictive utility and opens the attitude up to future change. Our hope is that this finding will spark new and innovative approaches to attitude change research that focus on the role of metacognitive factors and previously hidden, yet potentially important, traces of success for resisted messages.

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Received May 31, 2005
Revision received December 12, 2005
Accepted December 14, 2005 ■

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