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# Resisting Persuasion by Illegitimate Means: A Metacognitive Perspective on Minority Influence

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*The present research tests a new metacognitive perspective on resistance in minority influence situations. It is proposed that when people initially resist persuasive messages from sources in the numerical minority, they can lose attitude certainty if they perceive that they have based their attitudes on the source's minority status and also believe this is an illegitimate basis for resistance. In three studies, participants were presented with a message from a minority source. In Study 1, participants became less certain of their attitudes after resisting this message. In Study 2, this effect only emerged when participants were led to believe they had based their attitudes on the source's minority status and this was an illegitimate thing to do. In Study 3, this effect was shown to have implications for persuasion in response to a second message. The implications of these findings for classic minority influence effects are discussed.*

**Keywords:** *minority influence; attitude certainty; resistance; persuasion; metacognition*

Majorities often exert greater influence than do minorities. Indeed, both the conformity and persuasion literatures have accumulated considerable evidence suggesting that whereas numerical majorities tend to be very influential on an immediate, direct, and public level, numerical minorities tend to be resisted on this level (see Wood, Lundgren, Ouellette, Busceme, & Blackstone, 1994). Similarly, sources representing a majority opinion tend to induce immediate persuasion, whereas sources

representing a minority opinion often engender immediate resistance. The traditional explanation has been that people seek to publicly agree with majority messages and reject minority messages to avoid aligning themselves with deviant groups or positions (e.g., Moscovici, 1980, 1985; Mugny & Perez, 1991). Thus, whether it stems from simple, low-effort rejection or more thoughtful but negatively biased processing, people often show immediate, direct, and public resistance to messages associated with minority sources (e.g., Darke et al., 1998; De Dreu & De Vries, 1996; De Dreu, De Vries, Gordijn, & Schuurman, 1999; Erb, Bohner, Schmalzle, & Rank, 1998; Mackie, 1987; Trost, Maass, & Kenrick, 1992; see Erb & Bohner, 2001; Tormala, Petty, & DeSensi, in press).

Of interest, though, initially resisted minority sources have been known to exert a hidden or delayed impact. For example, when people resist minority sources, they often show evidence of persuasion when their attitudes are measured at a later point in time (e.g., Moscovici, 1980; see Wood et al., 1994, for a review). Crano and Chen (1998) presented undergraduate participants with

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a message endorsing a new university policy. This message was attributed to a source in the numerical minority or majority. Although the minority source produced less initial persuasion than did the majority source, under some conditions (e.g., when the message was strong) participants receiving the minority message showed evidence of delayed persuasion.

Multiple theories have been advanced in an effort to explain the delayed effect of minority sources. Moscovici (1985) argued that when people receive a strong minority position, they privately accept it but publicly guard against influence to avoid being aligned with a deviant group. As normative pressure subsides, however, privately accepted attitudes can be made public without fear of social censure. Crano (Alvaro & Crano, 1997; Crano & Chen, 1998) has offered a different perspective, arguing that when a strong minority message is initially resisted, this conflict (between the resistant attitude and strong message) unbalances people's attitude systems, putting change pressure on other attitudes, which change immediately and reverberate back to the target attitude after some delay.

### A METACOGNITIVE PERSPECTIVE

In the present research, we offer a new perspective on minority influence based on recent work examining the role of metacognitive factors in resistance to persuasion. Metacognition refers to people's thoughts about their own thoughts and thought processes (Petty, Briñol, Tormala, & Wegener, in press). In the attitudes domain, it recently has been demonstrated that when people resist persuasion, they can perceive this resistance, reflect on it, and form attribution-like inferences about their attitudes that affect attitude certainty (Tormala & Petty, 2004a). This is an important phenomenon because attitude certainty has implications for a variety of other outcomes (see Gross, Holtz, & Miller, 1995). For example, as attitude certainty increases, people's attitudes become more predictive of behavior (Fazio & Zanna, 1978), more resistant to attack (Wu & Shaffer, 1987), and more persistent over time (Bassili, 1996).

What effect does resisting persuasion have on attitude certainty? Depending on the circumstances, resistance can leave people feeling either more or less certain of their attitudes. The direction of this effect is largely determined by people's appraisals of their resistance (Petty, Tormala, & Rucker, 2004; Tormala & Petty, 2004a). When people form positive appraisals of their resistance, they show increases in attitude certainty. Tormala and Petty (2002, 2004b, 2004c) found that successfully counterarguing a persuasive attack, particularly a very strong attack or an attack from an expert,

makes people feel more certain of their initial attitudes. Furthermore, these attitudes become more predictive of behavioral intentions and more resistant to subsequent change. When people form negative appraisals of their resistance, however, they show decreases in attitude certainty. Tormala, Clarkson, and Petty (2006) found that when people are led to believe they have poorly counterargued a persuasive attack, particularly an attack from a nonexpert, they become less certain of their initial attitudes, and these attitudes become less predictive of behavioral intentions and less resistant to subsequent change.

### MINORITY INFLUENCE AND ATTITUDE CERTAINTY

The present research extends this metacognitive framework by studying resistance in the minority influence domain. As a starting point, we posit that when people resist persuasion, they may form negative appraisals of their resistance when they perceive that they have resisted by illegitimate means; that is, based on factors that have little or nothing to do with the merits of a given attitudinal position. Research from a variety of domains suggests that people's assessments of their processing strategies can influence judgmental confidence (e.g., Yzerbyt, Schadron, Leyens, & Rocher, 1994). Furthermore, Jacks and Cameron (2003) surveyed people's perceptions of their resistance strategies and found that people tend to view some strategies as less valid than others. In particular, source derogation stood out as less valid than other mechanisms such as counterarguing, presumably because it sidesteps message content. That is, when people resist persuasion because they do not like the source of a message, they are basing their attitudes on factors that are independent of the actual merits of the issue in question.

Extending this logic to the minority influence domain, we suggest that when people perceive they have resisted a persuasive message—meaning that message has had no immediate, direct, or public impact—simply by virtue of that message being associated with a minority source (i.e., rather than by counterarguing), they might perceive that they have resisted by illegitimate means. Indeed, perceiving that one has based one's resistant attitude on cue-based factors such as a source's minority status might seem less legitimate, or more biased, than resisting through a thoughtful analysis of the merits of the message arguments. Consistent with this notion, other researchers have argued that when people resist minority sources to avoid holding the minority position, they might sometimes perceive this action as a judgmental bias (e.g., Moscovici, 1980; 1985; Moskowitz & Chaiken, 2001).

We submit that when this occurs, people likely have lingering doubts about their attitudes and their ability to resist using a more thoughtful or legitimate method (e.g., counterarguing). If true, people would be expected to show evidence of decreased attitude certainty following initial resistance to a minority source.

Of importance, reduced attitude certainty following initial resistance could help explain the hidden influence minority sources have been observed to have. As reviewed earlier, attitude certainty has implications for a variety of outcomes, including attitudinal persistence. That initial minority resistance has frequently been linked with delayed persuasion is consistent with the idea that reduced certainty sometimes follows initial resistance of the minority message. Also consistent with this idea, previous researchers have argued that people might experience some degree of internal conflict in minority influence situations, the resolution of which can spark subsequent attitude change (or "conversion"; Moscovici, 1980; see also Nemeth, 1986). Notably, though, attitude certainty has never been assessed in the minority influence domain. By considering attitude certainty, we may be able to shed new light on hidden effects of seemingly resisted minority sources. For instance, reduced certainty following initial minority resistance might soften an attitude up to future attack. We explore this possibility in the present research.

### SUMMARY

In short, we propose that when people perceive that they have resisted a persuasive message largely because its position is endorsed by a source in the numerical minority, they can become less certain of their initial attitudes. However, we only expect this effect to occur when two conditions are met. First, people must perceive (or admit) that they have resisted persuasion primarily on the basis of the source's minority status (e.g., rather than counterarguing the merits of the position). Second, people must believe this is an illegitimate thing to do. When people deny or fail to perceive that they have based their resistant attitudes on minority source status, or when they do perceive this but they think resisting for this reason is legitimate (e.g., perhaps if only a small percentage of people support something it truly is not worthwhile), they are not expected to experience a loss in attitude certainty. Three studies explored these issues. Our general prediction was that people would resist persuasion from minority sources initially but show evidence of reduced attitude certainty when they (a) perceived that they had resisted because of the minority source and (b) perceived that this was an illegitimate thing to do.

### STUDY 1

The purpose of Study 1 was to provide an initial test of our attitude certainty hypothesis. We replicated a common paradigm in minority influence research in which participants received a persuasive message from a source that they were led to believe was in the numerical minority or majority. To this paradigm, we added a measure of attitude certainty. We also included a control condition in the design to obtain baseline data for our key measures. Consistent with past research, on an immediate and direct attitude assessment we expected participants to resist the minority message but be persuaded by the majority message. More germane to our primary interests, we predicted that participants would show reduced attitude certainty in the minority condition relative to the other conditions. It should be noted that in some past research, minority and majority sources have been shown to induce differential levels of processing (e.g., Baker & Petty, 1994; Erb, Bohner, Rank, & Einwiller, 2002). To assess potential differences in processing across conditions, we included a thought-listing procedure in this study. Heightened processing would be indicated by greater attitude-thought favorability correlations (Petty & Cacioppo, 1986). However, given the high relevance of the topic we used in Study 1, we expected high and comparable levels of processing across minority and majority source conditions (see Erb et al., 2002).

### Method

#### *Participants and Design*

Eighty-two Ohio State University undergraduates participated in partial fulfillment of a course requirement. Participants were randomly assigned to the minority source condition, the majority source condition, or a control condition. All sessions were conducted on computer.

#### *Procedure*

Participants were seated in a room containing 10 partitioned computer work stations. At the outset of the experiment, participants read a cover story that led them to believe they were taking part in a study designed to examine the effectiveness of different forms of communication (see Baker & Petty, 1994; Crano & Chen, 1998). They were told that to explore this issue we were presenting people with information about several different topics in a variety of formats. All participants were led to believe they were in the written condition and that they would be reading an excerpt from a newspaper editorial about a new policy under consideration at their university. Specifically, participants were told that their university was considering requiring students to participate in

several hours per week of unpaid service. Participants were led to believe this requirement would involve 2 to 3 years of university service. To ensure message processing, participants were told that the program would take effect the following semester (see Petty & Cacioppo, 1979).<sup>1</sup>

Following this information, participants received a message in favor of the service program. The arguments in this message, adapted from Baker and Petty (1994), were pretested to be strong. For example, the message argued that the service program would improve the quality of education offered at the university and reduce the cost of administrative operations on campus. After this message, participants completed dependent measures and were thanked and debriefed.

### Source Condition

Following the introductory description of the service program, participants were randomly assigned to the minority source condition, the majority source condition, or the control condition. In the minority and majority conditions, participants were presented with the message in favor of the service program. Immediately preceding this message, these participants were led to believe that a recent survey of more than 900 undergraduates on campus revealed that either a small minority (14%) or a large majority (86%) of students supported the policy. Participants in these conditions were further informed that the message they would be reading came from a member of this minority or majority. In the control condition, participants did not receive source information or a message—they simply learned of the service program and completed dependent measures. This condition was included to provide a baseline for both the attitude and the certainty data. Persuasion (resistance) would be indicated by attitudes in an experimental condition that were more favorable than (no different from) attitudes in the control condition.

### Dependent Measures

*Manipulation check.* In the minority and majority conditions, the persuasive message was directly followed by a manipulation check item that asked participants to indicate the percentage of students who supported the service program. Participants responded on a scale ranging from 1 to 10, with each point labeled (1 = 1-10%, 2 = 11-20% . . . 10 = 91-100%).

*Attitudes.* Following the manipulation check (or the introductory information in the control condition), participants reported their attitudes toward the service program on semantic differential scales ranging from 1 to 9 with the following anchors: *dislike-like*, *bad-good*, *foolish-wise*. Responses were averaged to form a

composite index ( $\alpha = .91$ ). Higher numbers reflected more favorable attitudes.

*Attitude certainty.* After reporting attitudes, participants completed a single item assessing attitude certainty (adapted from Tormala & Petty, 2002): How certain are you of your attitude toward the mandatory service program? Responses were provided on a scale ranging from 1 (*not certain at all*) to 9 (*extremely certain*).

*Cognitive responses.* At the end of the experiment, participants listed all of the thoughts they had while reading the message. These thoughts were typed into boxes that appeared on the computer screen one at a time. Because participants in the control condition did not receive the message, they did not list thoughts. For all other participants, we analyzed the number and the favorability of thoughts generated. As an index of thought favorability, we subtracted the number of negative thoughts listed from the number of positive thoughts listed and divided the difference by the total number of thoughts listed. The resulting index provided a relative favorability score, with higher numbers reflecting a greater proportion of favorable thoughts.

## Results

### Manipulation Check

All participants in the minority and majority conditions successfully indicated the correct percentage of students they had been told supported the service program. Thus, all participants' data were used for analysis. In Studies 2 and 3 as well, all participants successfully indicated the correct percentage so we do not address this issue further.

### Attitudes

The attitude data were submitted to a one-way ANOVA with source condition (minority, majority, or control) as the independent variable. As depicted in Table 1, there was a significant effect of source condition on attitudes,  $F(2, 79) = 3.15$ ,  $MSE = 3.27$ ,  $p < .05$ , such that attitudes toward the service program were more favorable in the majority condition than in the minority or control conditions,  $F(1, 79) = 6.29$ ,  $MSE = 3.27$ ,  $p < .02$ , which did not differ from each other,  $F(1, 79) = .01$ ,  $MSE = 3.27$ ,  $p > .90$ .

### Attitude Certainty

As displayed in Table 1, we also found the predicted effect of source condition on attitude certainty,  $F(2, 79) = 5.51$ ,  $MSE = 2.25$ ,  $p < .01$ . Certainty was lower in the

**TABLE 1:** Attitudes and Attitude Certainty as a Function of Source Condition in Study 1

Dependent Measure	Source Condition		
	Control	Minority	Majority
Attitudes			
<i>M</i>	5.08	5.02	6.15
<i>SD</i>	2.09	1.53	1.76
Attitude certainty			
<i>M</i>	6.86	5.97	7.29
<i>SD</i>	1.33	1.52	1.65

NOTE: All scales ranged from 1 to 9.

minority condition than in the majority or control conditions,  $F(1, 79) = 10.28$ ,  $MSE = 2.25$ ,  $p < .01$ , which did not differ from each other,  $F(1, 79) = 1.08$ ,  $MSE = 2.25$ ,  $p > .30$ .

### Cognitive Responses

Finally, we analyzed the cognitive response data. Control participants, who did not list thoughts, were excluded from these analyses. Participants generated thoughts of the same essential valence (i.e., mostly unfavorable) in the minority ( $M = -.24$ ,  $SD = .53$ ) and majority ( $M = -.15$ ,  $SD = .58$ ) conditions,  $t(51) = -.62$ ,  $p > .53$ . Furthermore, attitudes and thought favorability were equally correlated across the minority ( $r = .65$ ,  $p < .001$ ) and majority ( $r = .67$ ,  $p < .001$ ) conditions and participants listed approximately the same number of thoughts across the minority ( $M = 4.62$ ,  $SD = 2.13$ ) and majority ( $M = 5.42$ ,  $SD = 2.45$ ) conditions,  $t(51) = -1.27$ ,  $p > .21$ .

### Discussion

In Study 1, we replicated past research in finding that participants were differentially persuaded on immediate and direct measures by a minority versus a majority source. In fact, because we included a control condition in the design, we were able to specify that the majority source produced persuasion, whereas the minority source was resisted. Most important, we extended past research by examining the effect of resisting minority persuasion on attitude certainty. As predicted, people were less certain of their attitudes in the minority condition than in the control condition; that is, participants showed reduced attitude certainty after resisting the minority message. In the majority condition, in which participants were persuaded, attitude certainty was maintained at a relatively high level. Although our primary interest was in minority source situations, it is worth noting that the lack of movement in attitude certainty among majority condition participants could mask the fact that some participants

became more certain (upon thinking that they now held the same attitude as a majority of students), whereas others became less certain (upon thinking that they might have been influenced to some degree by the percentage of students in favor of the service program). We return to this issue in the General Discussion.

Finally, it is important to highlight the absence of processing differences in Study 1, as assessed using multiple indicators of cognitive responding. These data suggest that differential elaboration cannot account for the attitude or certainty effects. Our interpretation of this finding is that participants processed the message in both the minority and the majority conditions but participants in the minority source condition did so knowing that they ultimately would resist the message to avoid being associated with the minority position (see Crano, 2001). Perceiving that they rejected the message due to cue-based rather than merit-based factors (i.e., because of the source status rather than the arguments in the message), they may have felt that they resisted illegitimately and, thus, lost attitude certainty.

## STUDY 2

In Study 1, we demonstrated that attitude certainty can be reduced when people resist minority sources. In Study 2, we further explored the parameters of this effect. We posit that people who resist minority messages are particularly likely to lose attitude certainty when two conditions are met: (a) They perceive that they have resisted because of the minority source and (b) they believe this is an illegitimate thing to do. When people perceive that they have resisted persuasion for some other reason (e.g., counterarguing), or perceive that they resisted because of the minority source but think this is a legitimate thing to do, they are not expected to lose certainty. In Study 2, we investigated these conditions by manipulating both perceived reliance on source status and the perceived legitimacy of relying on this information. Because our primary aim in Study 2 was to further understand the nature of the certainty effect following minority resistance, and because Study 1 clearly showed that participants resisted the minority but not the majority message, we focused Study 2 exclusively on minority source conditions, and dropped the control and majority conditions from the design.

### Method

#### Participants and Design

Ninety-five Indiana University (IU) undergraduates participated in partial fulfillment of a course requirement.

Participants were randomly assigned to conditions in a 2 (perceived source reliance: reliance or no reliance) × 2 (perceived legitimacy: legitimate or illegitimate) between-participants factorial design. All participants were placed in a minority source condition using the same instructions as in Study 1.

### Procedure

When participants arrived, they were seated in a room containing six partitioned computer work stations. Overall, the procedure for this experiment was very similar to the first, again focusing on the university service program. Following the persuasive message (the exact same message as before), participants proceeded directly to the attitude measure, after which they were led through the manipulations of perceived source reliance and perceived legitimacy. Finally, participants reported attitude certainty and were thanked and debriefed.

### Independent Variables

*Perceived source reliance.* After reporting their attitudes toward the service program, participants were randomly assigned to either the source reliance or no source reliance condition. This manipulation had two phases. The first phase consisted of a series of questions ostensibly assessing the extent to which participants based their attitudes on the percentage of students in favor of the service program. These questions and the response scales accompanying them were biased to facilitate the perception of having based one's attitude (or not) on the source information (for a similar procedure, see Salancik & Conway, 1975). In the source reliance condition, participants responded to four questions designed to lead them to indicate they had based their attitudes on the source information. In the no source reliance condition, participants responded to four questions designed to lead them to believe they had not based their attitudes on the source information. The items used for this manipulation are presented in the appendix.

The second phase of the source reliance manipulation consisted of a false feedback procedure. Participants received feedback that they had or had not relied on the source information as a basis for their attitudes toward the service program. This manipulation was perfectly confounded with the biased scales manipulation (from the first phase) so that it would bolster the perception of having relied or not relied on the source information. As an introduction to the false feedback, participants received the following information:

The computer running this experiment is programmed to determine the extent to which your attitude toward the university service program is based on the percentage information you received earlier (i.e., the percent of

IU students who support the policy). Based on the responses you just submitted regarding your attention to this information, the computer will calculate a score reflecting the extent to which your attitude was based on the percentage information. When you click "continue" the computer will analyze your responses and provide you a summary of the results of this analysis.

When participants clicked continue, a message appeared on the screen suggesting that the computer was processing their responses. After 5 s, participants received the following information:

Below, you are presented with your *attitude basis index*. This index reflects the computer's analysis of your responses to the previous questions. As described a moment ago, the computer running this experiment is programmed to determine the extent to which your attitude toward the university service program is based on the percentage information you received earlier. *General information:* The index can range from 1-10. If your index is greater than 5, that indicates that your attitude was probably based on the percentage information. If your index is 5 or less, that indicates that your attitude was probably not based on the percentage information.

At the bottom of the same screen, participants were presented with their attitude basis index. Participants in the source reliance condition received a score of 9, indicating that their attitudes were most likely based on the source information. Participants in the no source reliance condition received a score of 2, indicating that their attitudes were most likely not based on the source information.

*Perceived legitimacy.* After the false feedback, participants were randomly assigned to one of two perceived legitimacy conditions: the legitimate condition or the illegitimate condition. Participants in these conditions were led to believe that basing one's attitude on source information was consensually viewed as legitimate or illegitimate. Specifically, participants received the following information (manipulated words are in parentheses):

To help you understand your score on the attitude basis index, we would like to provide you with information regarding the results of this analysis for other participants in our studies. Over the past 2 semesters, more than 500 students have taken part in this study, and a large majority (small minority) of them, 88.6% (12.2%), had an attitude basis index of greater than 5. In other words, most people did (did not) use the percentage information as a basis for their attitude because they felt that it was legitimate (illegitimate) to do so.

This manipulation was based on the notion that people often use consensus information to infer validity or legitimacy (e.g., Erb & Bohner, 2001; Fazio, 1979;

Festinger, 1954; Petty, Briñol, & Tormala, 2002; Visser & Mirabile, 2004).

### Dependent Measures

**Attitudes.** Attitudes toward the service program were reported on a series of semantic differential scales ranging from 1 to 9 with the following anchors: *dislike-like, bad-good, negative-positive, harmful-beneficial, foolish-wise*. Responses were averaged to form a composite index ( $\alpha = .93$ ). Higher numbers reflected more favorable attitudes.

**Attitude certainty.** The attitude certainty measure consisted of several items adapted from past research (e.g., Krosnick, Boninger, Chuang, Berent, & Carnot, 1993; Tormala & Petty, 2002): How certain are you of your opinion about the university service program? How sure are you that your opinion about the university service program is correct? How certain are you that the attitude you expressed is the best attitude to have? Overall, how much confidence do you have in your opinion about the university service program? Responses were provided on scales ranging from 1 to 9, anchored at *not certain at all-very certain, not sure at all-very sure, not certain at all-very certain, no confidence at all-very high confidence*. Responses were averaged to form a composite index ( $\alpha = .81$ ).

## Results

### Attitudes

We submitted the attitude data (see Table 2) to a  $2 \times 2$  ANOVA with perceived source reliance and perceived legitimacy as independent variables. There were no main effects,  $F_s < 1$ , and there was no interaction,  $F(1, 91) = 1.98$ ,  $MSE = 2.96$ ,  $p > .16$ . Attitudes were essentially equivalent across conditions.<sup>2</sup>

### Attitude Certainty

The attitude certainty data were submitted to the same  $2 \times 2$  ANOVA. There were no main effects,  $F_s < 1$ , but there was a significant interaction,  $F(1, 91) = 5.29$ ,  $MSE = 2.16$ ,  $p < .03$ . As shown in Table 2, the interaction assumed the predicted form. Attitude certainty was lower in the illegitimate source reliance condition than in the other three conditions,  $F(1, 93) = 3.87$ ,  $MSE = 2.16$ ,  $p = .05$ , none of which differed from each other,  $F(2, 69) = 1.08$ ,  $MSE = 2.21$ ,  $p > .34$ .

## Discussion

In Study 2, we found the lowest attitude certainty among individuals led to believe they had illegitimately

**TABLE 2:** Attitudes and Attitude Certainty as a Function of Perceived Source Reliance and Perceived Legitimacy in Study 2

Dependent Measure	Source Reliance		No Source Reliance	
	Perceived Legitimacy			
	Legitimate	Illegitimate	Legitimate	Illegitimate
Attitudes				
M	4.73	5.17	5.19	4.64
SD	1.59	1.55	1.88	1.82
Attitude certainty				
M	6.55	5.78	6.15	6.77
SD	1.73	1.42	1.51	1.12

NOTE: All scales ranged from 1 to 9.

based their attitudes on minority source information. Among individuals led to believe they had not based their attitudes on minority source information, as well as those led to believe they had legitimately done so, attitude certainty was maintained at a higher level. Thus, Study 2 extended the key finding from Study 1 by specifying at least some of the conditions under which certainty is diminished when people resist minority messages. There are a variety of reasons people might think it is illegitimate to reject a position based on the fact that only a small number of people support it. In Study 2, we focused on a variable that reflects the very logic that drives minority resistance itself. Just as people infer the validity of an attitude based on the number of people who hold it, we assumed people would infer the validity of a resistance mechanism based on the number of people who use it. To bolster the perceived legitimacy manipulation, we also told participants that most people did or did not base their attitudes on the percentage information precisely because they thought it was legitimate or illegitimate to do so. This information appeared to affect participants' perceptions of their resistance strategy and, thus, determine the certainty with which they held their attitudes.

It is worth noting that attitude certainty in the legitimate/no source reliance condition tended to be slightly lower than it was in the legitimate source reliance condition and the illegitimate/no source reliance condition. Although none of these conditions were significantly different from each other, it stands to reason that certainty might have been slightly lower in this condition as a result of conflicting influences. Specifically, although perceiving that one did not rely on the source information would be expected to boost certainty, this boost may have been counteracted by the perception that most other people did rely on the source information. This perception of discrepant reactions could have sparked some

attitudinal conflict that kept certainty at a slightly lower level.

### STUDY 3

Although the data from Study 2 were compatible with our predictions, there are caveats to be noted. To begin, we did not directly measure perceived legitimacy or perceived reliance on source information. We assume our manipulations altered these perceptions, but without direct assessments we cannot be sure. In addition, we have yet to establish that the attitude certainty effect has consequences for any other outcomes. As reviewed earlier, researchers have been interested in attitude certainty primarily because it has consequences for outcomes such as attitude durability (e.g., Bassili, 1996; Tormala & Petty, 2002; Wu & Shaffer, 1987). In Study 3, we addressed these issues by (a) directly measuring rather than manipulating perceived source reliance and perceived legitimacy and (b) examining participants' susceptibility to a subsequent persuasive message arguing in the same direction as the initial message. Based on the attitude certainty findings in Study 2, we expected to find evidence of increased vulnerability to a second persuasive message after participants perceived that they had illegitimately resisted the first message on the basis of its minority source.

#### Method

##### *Participants and Procedure*

Ninety-six IU undergraduates participated in partial fulfillment of a course requirement. The first half of this study was identical to Study 2. All participants received an initial message in favor of a university service program. This message contained the same arguments as before, and all participants received the exact same minority source information. After the message, participants reported their attitudes toward the issue.

Shortly after the attitude report, this study diverged from the last one. First, participants engaged in a filler task. This task involved a word association procedure in which participants received 30 words presented individually on the computer screen. Participants were instructed to type the first word that came to mind for each word displayed. The words presented were unrelated to the experiment and service program topic and they were neutral in valence. After the filler task, participants read that they would now receive additional information about the service program. We then presented a second persuasive message in favor of the policy. This message contained several new strong arguments (e.g., the program would attract financial contributions from volunteer-minded private donors). Participants were not reminded of the

minority status of the position taken. Following this second message, participants again reported their attitudes and were thanked and debriefed.

##### *Measures*

*Attitudes.* We assessed attitudes twice in this study, once after each message. Due to the multiple reports, we streamlined these measures. At both time points, participants rated the service program on two scales ranging from 1 to 9 and anchored at *bad-good* and *negative-positive*. We averaged responses to form composite indices of Time 1 ( $r = .86, p < .001$ ) and Time 2 ( $r = .90, p < .001$ ) attitudes.

*Perceived minority source reliance.* To assess perceived source reliance at the end of the study, participants were asked to think back to the percentage of students who supported the program and report the extent to which they used that information as a basis for the initial attitudes they reported. Responses were provided on a scale ranging from 1 (*not at all*) to 9 (*very much*).

*Perceived legitimacy.* Following the perceived source reliance item, participants were asked to report how legitimate and how fair they thought it was to disagree with an idea just because a very small percentage of people support it. Responses to both items were given on scales ranging from 1 (*not at all*) to 9 (*very much*) and were averaged to form a single index of perceived legitimacy ( $r = .61, p < .001$ ).

#### Results

Our primary interest was in whether perceived source reliance would interact with perceived legitimacy to determine the degree of attitude change from Time 1 to Time 2. We expected all participants to be equally resistant to the first message because of its association with the minority source. However, we predicted that responses to the second message would differ depending on participants' perceptions of their reactions to the first message. To test these hypotheses, we submitted Time 1 and Time 2 attitudes to separate analyses.

##### *Time 1 Attitudes*

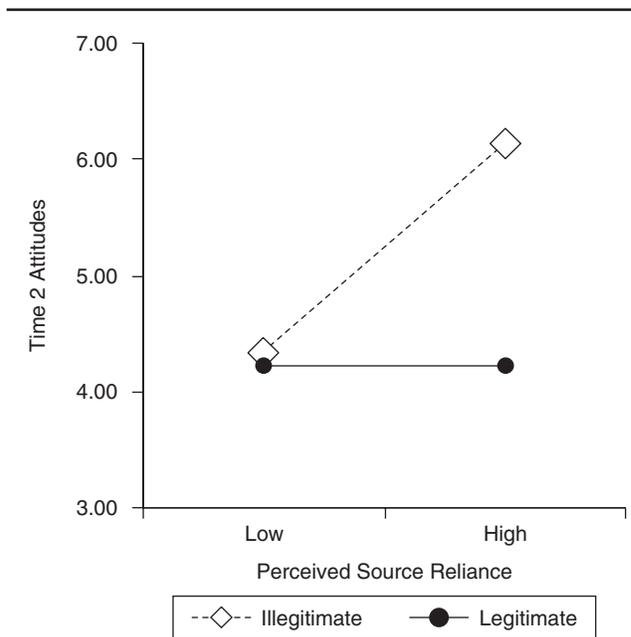
We began by submitting Time 1 attitudes to analysis to establish their equivalence across participants. We conducted a hierarchical regression analysis in which perceived source reliance and perceived legitimacy were treated as continuous predictor variables and Time 1 attitudes were the criterion. We centered all indices and followed the hierarchical regression procedures outlined by Cohen, Cohen, West, and Aiken (2003). Consistent

with expectations, there was no main effect for perceived source reliance,  $\beta = .12$ ,  $t(93) = 1.21$ ,  $p > .23$ , and no interaction between perceived source reliance and perceived legitimacy,  $\beta = -.14$ ,  $t(92) = -1.34$ ,  $p > .18$ . There was, however, a marginal negative relationship between perceived legitimacy and Time 1 attitudes,  $\beta = -.20$ ,  $t(93) = -1.91$ ,  $p < .06$ . Not surprisingly, the more legitimate participants thought it was to resist a message because its source was in the minority, the more they did resist it.

### Time 2 Attitudes

Following this initial outcome, we conducted another hierarchical regression analysis. This time, Time 2 attitudes were the criterion and perceived source reliance, perceived legitimacy, and Time 1 attitudes were treated as continuous predictor variables. This analysis enabled us to determine whether the perceived Source Reliance  $\times$  Perceived Legitimacy interaction affected Time 2 attitudes, controlling for Time 1 attitudes. We again centered all indices and followed standard hierarchical regression procedures. The results matched our expectations. To begin with, Time 2 attitudes were significantly correlated with Time 1 attitudes,  $\beta = .87$ ,  $t(92) = 17.77$ ,  $p < .001$ . In addition, Time 2 attitudes were significantly predicted by perceived source reliance,  $\beta = .11$ ,  $t(92) = 2.28$ ,  $p < .03$ . As perceived reliance on the minority source information for initial attitudes increased, participants were more persuaded by the second message. There was no main effect for perceived legitimacy,  $\beta = -.03$ ,  $t(92) = -.64$ ,  $p > .52$ .

Most important, there was a significant interaction between perceived source reliance and perceived legitimacy in predicting Time 2 attitudes,  $\beta = -.10$ ,  $t(89) = -2.14$ ,  $p < .04$ . As illustrated in Figure 1, this interaction assumed the predicted form. When participants were high in perceived source reliance (analyzed at  $+1$  *SD* of the source reliance index), there was a negative relation between perceived legitimacy and Time 2 attitudes,  $\beta = -.15$ ,  $t(91) = -1.95$ ,  $p = .05$ ; the less legitimate they thought it was to rely on minority source information, the more favorable they were toward the proposal following the second message. When participants were low in perceived source reliance (analyzed at  $-1$  *SD* of the source reliance index), there was no relation between perceived legitimacy and Time 2 attitudes,  $\beta = .06$ ,  $t(91) = .84$ ,  $p > .40$ . In other words, the more participants perceived both that they relied on the source information and that this was illegitimate, the more favorable they were toward the proposal following the second message. Attitudes following the second message were less favorable, and equally so, for participants who believed they did not rely on the source information and for those who believed they legitimately relied on the source information. Again, these



**Figure 1** Time 2 attitudes in Study 3 as a function of perceived source reliance and perceived legitimacy.

NOTE: Plot depicts predicted means at  $+1$  *SD* and  $-1$  *SD* of the perceived source reliance and perceived legitimacy indices.

analyses controlled for Time 1 attitudes. None of the other interactions were significant,  $\beta$ s  $< |.16|$ ,  $p$ s  $> .19$ .

### Discussion

Study 3 demonstrates that when people perceive that they have illegitimately based their initial attitudes on the number of their peers who support a position, they are vulnerable to later persuasion. When people do not perceive—or do not admit—that they have based their attitudes on this information, or they perceive that they have but they think this is a legitimate judgmental strategy, they are less susceptible to later persuasion. These findings map neatly onto our predictions and the attitude certainty effects revealed in Study 2. Where attitude certainty was lowest in Study 2, vulnerability to a second message was highest in Study 3.

Although the findings of Study 3 are consistent with predictions, we acknowledge the limitations of simply measuring perceived source reliance and perceived legitimacy. As with any study measuring rather than manipulating key constructs, there are limits with respect to causal inference. In this study, one concern would be that people who report particular perceptions (i.e., perceptions of illegitimately relying on the source information) are simply more vulnerable to influence than are other people. If this were true, though, individuals reporting these perceptions also should have been more

susceptible to the first persuasive message, which they were not. Another potential concern would be that participants' perceptions of their own attitude change determined their perceptions (or reports) of source reliance and legitimacy in a post hoc fashion as a way to explain or justify changing their attitudes. Although this too would be interesting in terms of linking attitude change to people's perceptions of the legitimacy of relying on minority source information, it would indicate a different causal direction for the present effects. In any case, the pattern of evidence is very clear and consistent across studies, and we submit that the overall gains associated with demonstrating the effects using both correlational and experimental approaches outweigh the limitations of a single study relying on measured variables.

We also acknowledge the inherent difficulty of attributing the attitude change effects to attitude certainty without actually measuring certainty in this study. We did not measure certainty because such a measure would have risked placing demand pressures on individuals just before they received the second persuasive message and reported their attitudes a second time. We preferred to avoid a demand interpretation of our findings and, thus, removed the certainty index. However, based on the certainty data from the first two experiments (suggesting that certainty was lowest where attitude change was highest in Study 3) and an extensive body of past research indicating that attitude certainty has clear and direct implications for an attitude's vulnerability to persuasion (e.g., Bassili, 1996; Tormala, Clarkson, et al., 2006; Tormala & Petty, 2002; Wu & Shaffer, 1987), it seems reasonable to suggest that the Study 3 results stemmed from differences in attitude certainty across participants.

## GENERAL DISCUSSION

The present studies explored a new effect in minority influence research based on recent developments in the areas of metacognition and resistance to persuasion. We predicted that when people perceived that they resisted persuasion to avoid aligning themselves with a minority constituency, they would lose attitude certainty. Across studies, the evidence was consistent with this notion. Study 1 provided an initial demonstration of reduced certainty following minority resistance. Study 2 explored the boundary conditions of the effect, finding that certainty was lowest when participants were led to believe that they had illegitimately based their attitudes on the source's minority status. Study 3 measured perceptions of basing one's attitude on minority source status and tested the implications for future resistance. As predicted, participants who reported that they had illegitimately based their initial attitudes on minority source

status showed the greatest degree of persuasion in response to a later message. Taken together, these studies highlight a new approach that we hope will prove useful to scholars working on minority influence issues in a number of other domains. We recognize the limitations of using the same persuasive topic in each of the present studies, but in this initial foray, our primary objective was to uncover and understand a new phenomenon in minority influence situations. In future research, it would be helpful to extend the current framework to other topics and issues to examine the generalizability of our results.

### Connecting With Past (and Future) Minority Influence Findings

Of importance, our argument is not that explanations for minority influence offered in past research are tenuous or invalid or that the present research provides an explanation for all prior minority influence effects. We simply suggest that attitude certainty may be an additional, heretofore unexplored, mechanism through which minority sources can have subtle yet important persuasive effects. Nevertheless, it is worth considering how attitude certainty might relate to some of the classic minority influence findings. For example, past research reveals that when people initially resist minority sources on an immediate, direct, and public level, their attitudes often show evidence of delayed, indirect, and/or private change. It also has been demonstrated that attitudes changed in response to minority sources can be quite resistant to counterpersuasion. We submit that our perspective has potential relevance to each of these findings and that it makes predictions not previously considered in the minority influence literature.

#### *Delayed Change*

It is now well documented that when people resist minority persuasion, they often show evidence of delayed change in the direction of the minority position (e.g., Crano & Chen, 1998; see Wood et al., 1994). Attitude certainty could offer a new account of this finding. As reviewed earlier, certainty has implications for attitude persistence over time (e.g., Bassili, 1996). The less attitude certainty one has, the more susceptible one's attitude is to change. To the extent that people continue to think about the minority message after resisting it, the direction of change following reduced certainty presumably would be in the direction of that message. In short, when people resist minority messages and end up having doubt about their attitudes, this doubt might open those attitudes up to future change in the direction of the initial message.

### *Indirect Change*

Past research on minority influence (e.g., Alvaro & Crano, 1997; Gordijn, De Vries, & De Dreu, 2002) also has revealed that when people resist minority messages on one issue (e.g., gays in the military) they sometimes show evidence of attitude change with respect to other issues (e.g., gun control). Multiple explanations for this finding have been offered. Crano's (2001) leniency contract, for instance, suggests that when people resist minority sources, they often do so without extensive counterargument. In other words, they receive and process the minority message with little attempt to refute it, but they implicitly intend to reject it nonetheless to avoid being associated with the minority position. When this occurs, the minority message "gets in," and change pressure is diverted to other attitudes through a process of spreading activation. The metacognitive mechanism suggested by our studies also might speak to indirect change. When someone resists a minority message and feels doubtful about the target attitude, this feeling of doubt might spread to other attitudes. If attitudes are held in attitude systems that are even somewhat coherent (e.g., McGuire, 1989), inducing doubt about one attitude should undermine the certainty with which other closely related attitudes are held as well. Those attitudes, in turn, would be destabilized and opened to change.

### *Subsequent Resistance*

Other recent minority influence research has examined the implications of initial exposure to minority messages for subsequent persuasion in response to counter-messages. Martin, Hewstone, and Martin (2003) presented participants with a minority or majority message. Following this message, participants received another message in the opposite direction. Martin et al. found that participants in the minority condition were more resistant to this later message than were participants in the majority condition. They attributed this effect to differential processing of the first message. Indeed, under some conditions, minority sources engender greater message processing than do majority sources (e.g., Baker & Petty, 1994; Erb et al., 2002; Gardikiotis, Martin, & Hewstone, 2005; Gordijn et al., 2002; Maass & Clark, 1983; Martin & Hewstone, 2003; Moscovici, 1980), and greater processing leads to stronger attitudes (Petty, Haugtvedt, & Smith, 1995).

In apparent contrast to the Martin et al. (2003) work, the current research suggests that attitudes following minority messages sometimes can be very weak and, thus, more susceptible to subsequent persuasion. One important difference between the Martin et al. research and the present research is the initial outcome of exposure to the minority position. In the Martin et al. studies,

participants were initially persuaded by the minority message. In our studies, participants resisted this message. It could be that the direction of attitude strength effect depends on whether people initially resist or are persuaded by the minority message. Rucker and Petty (2004) found that when people try to resist but are nonetheless persuaded, they are highly certain of their new attitudes. Applying this notion to the current concerns, perhaps when people are persuaded by minorities despite presumably not wanting to be, they become highly convinced of the validity of the new attitude, making that attitude strong and resistant. In brief, we postulate that when people resist minority messages (the current research), they might perceive that they have done so illegitimately, which undermines certainty in the unchanged attitude. When people are persuaded by minority messages (Martin et al., 2003), they are more likely to perceive they have been legitimately influenced (after all, they are not going along with the position because of its source), which boosts certainty in the new attitude.

### *Attitude-Behavior Correspondence*

The present research also suggests that when people resist minority sources, they might show reduced correspondence between attitudes and behavior. As revealed in a host of prior studies, the less certain one is of one's attitude, the less predictive that attitude is of behavior (e.g., Fazio & Zanna, 1978). Thus, when people lose certainty after resisting a minority message, their attitudes might become not only more open to later change but also less useful as behavioral guides. Such an effect would expand the range of phenomena known to follow initial minority resistance.

### *Bias Correction*

It is worth noting that the metacognitive perspective we have offered for minority influence bears some similarity to the notion of bias correction. In the correction literature, it has been theorized that people are motivated to avoid unwanted or inappropriate thoughts and that they may seek to control or modify these thoughts when they arise (e.g., Wegener & Petty, 1997). If one thinks one's response to a message is negative due to some unwanted bias such as bad mood, for instance, one might correct one's response to make it more positive. In the present research, we have proposed that when people resist minority sources on the basis of their numerical status, they might perceive that this is an illegitimate thing to do. As it is typically defined, correction would predict more favorable attitudes toward the minority message when people feel that they are illegitimately biased against it. We did not find differences in initial attitudes across conditions; we found differences only in certainty. However, it

could be that losing certainty in one's judgment is an alternative to correction in some situations. Rather than modifying the attitude, one might modify the certainty with which that attitude is held. Alternatively, losing certainty might sometimes be a precursor to correction. In Study 3, for example, when participants were exposed to a second message on the same topic, they ultimately corrected their attitudes to be more in line with the minority position. We do not believe that reduced certainty is necessary for all correction but we do think the interplay of attitude certainty and correction processes merits attention in future research in minority influence and other domains.

### Majority Influence

Finally, it is important to consider what implications the attitude certainty perspective might have for majority influence. In Study 1, we found that participants held their attitudes with relatively high certainty (comparable to the control) after being persuaded by a majority source. As noted earlier, we suspect that the lack of change in certainty in the majority condition may have masked the fact that some participants felt more certain than before (upon perceiving that they now held the same attitude as their peers), whereas others felt less certain (upon perceiving that they may have been influenced by the source's majority status). Ultimately, although it was not the focus of the present research, we posit that people can evaluate their processing strategies when they are persuaded by majority sources, just as they can when they resist minority sources. Furthermore, in accord with the current research, we would expect the perceived legitimacy of relying on majority sources to moderate the effect of perceived majority source reliance on attitude certainty. Applying the certainty perspective to the area of majority influence would be a worthwhile task for future studies.

### Conclusion

The current research develops a new perspective on minority influence. We propose that when people resist minority messages, their perceptions of their resistance strategy can affect the certainty with which they hold their initial attitudes. Specifically, when people perceive that they have illegitimately resisted because of the minority source, they lose attitude certainty, and this loss opens their attitudes to future persuasion. Given that reduced certainty can have consequences for an attitude's tendency to persist over time, resist new attacks, and guide behavior, our perspective might offer new explanations for classic effects in minority influence settings and point to new effects in these settings that have yet to be discovered.

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## APPENDIX

### Source Reliance Items in Study 2

1. Earlier in the experiment, you were presented with information about the percentage of Indiana University (IU) students who support the university service program. To what extent would you agree with the statement that your opinion was based at least to some small degree on the percentage of IU students who support the university service program? (Responses provided on a 1-5 scale, anchored at *agree somewhat* and *strongly agree*.)
2. If you had *not* considered this information when reporting your attitude, to what degree would your attitude rating have been different? (Responses provided on a 1-9 scale, anchored at *not at all* and *very much*.)
3. Under other circumstances, how willing would you have been to ignore the percentage information when reporting your opinion? (Responses provided on a 1-5 scale, anchored at *not at all willing* and *just a little willing*.)
4. Being as honest as possible, please indicate the degree to which your attitude toward the university service program was based on the fact that only 14% of students support the policy. (Responses provided on a 1-5 scale, anchored at *moderately* and *very much*.)

### No Source Reliance Items in Study 2

1. Earlier in the experiment, you were presented with information about the percentage of IU students who support the university service program. To what extent would you agree with the statement that your opinion was completely based on the percentage of IU students who support the university service program? (Responses provided on a 1-5 scale, anchored at *not at all* and *very little*.)
  2. If you *had* considered this information when reporting your attitude, to what degree would your attitude rating have been different? (Responses provided on a 1-9 scale, anchored at *not at all* and *very much*.)
  3. Under other circumstances, how willing would you have been to rely on the percentage information when reporting your opinion? (Responses provided on a 1-5 scale, anchored at *not at all willing* and *just a little willing*.)
  4. Being as honest as possible, please indicate the degree to which your attitude toward the university service program was based on the fact that only 14% of students support the policy. (Responses provided on a 1-5 scale, anchored at *not at all* and *very little*.)
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## NOTES

1. Although Baker and Petty (1994) used the same topic, they did not make the issue highly relevant to participants so they could examine differences in processing across conditions. We set personal relevance at a high level for all participants so we did not expect processing differences.

2. It is reasonable to speculate that had we measured attitudes after the manipulations, we might have obtained differences in attitudes across conditions. To address this issue in pretesting, we conducted a study ( $N = 57$ ) that employed the exact same design as Study 2 but measured attitudes after the manipulations. In this study as well, attitudes were no different across conditions, all  $F_s < 1$ .

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