

## Attitude Importance, Forewarning of Message Content, and Resistance to Persuasion

Julia Zuwerink Jacks

*Department of Psychology  
University of North Carolina at Greensboro*

Patricia G. Devine

*Department of Psychology  
University of Wisconsin at Madison*

Warning participants of the topic and position of an upcoming message often results in increased resistance to persuasion. The cognitive mediation explanation of this effect is that the warning motivates people to engage in anticipatory counterarguing prior to receiving the message. This research suggests that this explanation provides only a partial understanding of forewarning effects. We extended the literature by examining attitude importance and both cognitive and affective resistance processes (cf. Zuwerink & Devine, 1996). Results showed that high-importance individuals were very resistant to the message, regardless of the warning (warned vs. unwarned) and delay (0 min vs. 2 min) manipulations. Their resistance was evident in heightened levels of negative thoughts and negative affect (i.e., irritation) compared to low-importance individuals. Low-importance individuals were most resistant when warned and given time before hearing the message. Path analysis suggests that this effect was mediated primarily by heightened irritation in this condition, although negative thoughts also contributed to resistance.

According to one estimate, the average American is bombarded with 1,500 persuasive messages a day (Schultz, 1982; as cited in Zimbardo & Leippe, 1991). At times a persuasive message may catch people off guard. More often than not, however, people will have some idea of its nature. For instance, when a television show cuts to a commercial break, people know from past experience that the intent of those flashy images and catchy jingles is to persuade them to buy a certain product or service. In this instance, there is some advanced warning of the *persuasive intent* of the message (Cialdini & Petty, 1981; Papageorgis, 1968). In other cases, people may have some warning of the *content* (i.e., the topic and position) of an impending message. For example, the sermon title in the church bulletin (e.g., “On the evils of alcohol”) may warn people of the preacher’s topic and position on some issue.

Past research has shown that both kinds of forewarning can effectively confer resistance to persuasion relative to a no-warning control group. The resistance conferring effect of persuasive intent warnings is typically explained in terms of the motivational state of reactance (Brehm, 1966). Intent warnings presumably communicate that the message is a threat to one’s attitudinal freedom. Because people do not like being told what to think or how to feel, they resist (Hass & Grady, 1975; Petty & Cacioppo, 1979). In contrast, message content warnings are typically explained in terms of their effect on cognitive processing. Such warnings appear to motivate people to think of counterarguments prior to the onset of the message (Petty & Cacioppo, 1977). We focused on message content warnings in this research and sought to extend this literature in two important ways. First, we examined individual differences in attitude importance as a potential moderator of forewarning effects. Second, we examined both cognitive and affective responses as potential mediators of forewarning effects.

With a single exception (Allyn & Festinger, 1961), message content warning studies have focused exclusively on personal involvement as an indicator of attitude strength. For

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Requests for reprints should be sent to Julia Zuwerink Jacks, Department of Psychology, University of North Carolina at Greensboro, P.O. Box 26164, Greensboro, NC 27402–6164. E-mail: jrjacks@uncg.edu

example, Apsler and Sears (1968) manipulated involvement by telling one group of students that a proposal to replace college professors with supervised teaching assistants would be implemented in the coming year. Such a proposal was counterattitudinal for all participants. This group, expecting to be affected immediately, constituted the high-involvement group. The low-involvement group did not expect the proposal to be implemented for more than 10 years. All participants were then given time (5 min) to think about the issue between the warning and the message (cf. Freedman & Sears, 1965). Apsler and Sears found that the effect of the warning was moderated by involvement. The warning had little effect for the high-involvement group, but it increased persuasion for the low-involvement group.

Prior to this research, Allyn and Festinger (1961) examined attitude strength as a moderator of forewarning effects in terms of a composite measure of attitude extremity and importance. They either warned or did not warn a group of teenagers that they would hear a speaker argue against allowing teenagers to drive without restrictions. The warned group was also told prior to the speech that the researchers were interested in their attitudes and opinions, whereas the unwarned group was told that the researchers were interested in their impressions of the speaker's personality. Thus, warning and "set" were completely confounded. Results showed that among teenagers with strong (i.e., extreme and personally important) initial attitudes, the warned-opinion group was more resistant to the message than the unwarned-impression group. There was no warning-set effect for teenagers with weaker attitudes. Despite the confound, this study is typically cited as the first to demonstrate the resistance-conferring effect of message content warnings, particularly among those with strong attitudes.

Since these classic studies, the message content warning literature has focused exclusively on manipulations of involvement as an indicator of attitude strength (Chen, Reardon, Rea, & Moore, 1992; Petty & Cacioppo, 1977; Romero, Agnew, & Insko, 1996). Despite some inconsistencies in the findings, it is generally concluded that warnings are more effective in conferring resistance for strong than weak attitudes (i.e., for high- than low-involvement groups). Yet involvement is only one of many strength-related constructs that may moderate attitudinal effects (Krosnick, Boninger, Chuang, Berent, & Carnot, 1993; Petty & Krosnick, 1995; Raden, 1985). Recent conceptualizations suggest that an attitude is strong to the extent that it is stable; resistant to change; and has an impact on information processing, social judgments, and behavior (Krosnick & Petty, 1995). Operationally, *attitude strength* can be defined in a variety of ways—including involvement, importance, accessibility, knowledge, and so on (see Wegener, Downing, Krosnick, & Petty, 1995). In a recent review of these strength-related dimensions, Krosnick et al. (1993) recommended that "future research be devoted to exploring the antecedents and consequences of each dimension individually and the causal relations among them" (p. 1143).

The attitude strength variable that we employ in this research is attitude importance. We do so for two reasons. First, we believe it may have somewhat different implications than involvement for the effect of a message content warning on final attitudes. By definition, attitude importance is a construct that reflects an individual's subjective sense of the strength and personal importance of the attitude. "To attach great personal importance to an attitude is to care tremendously about it and to be deeply concerned about it" (Boninger, Krosnick, Berent, & Fabrigar, 1995, p. 160). Further, attitude importance is ego-involving in the sense that it taps into the self-concept (Boninger, Krosnick, & Berent, 1995; Boninger, Krosnick, Berent, et al., 1995). Thus, we believe personal importance partly reflects the extent to which the attitude is ego-involving and the extent to which individuals are motivated to defend it (Zuwerink & Devine, 1996). In addition, Krosnick (1989) demonstrated that personally important attitudes are more accessible than less important attitudes. That is, they are brought to mind more quickly and easily than unimportant attitudes. Thus, attitude importance may influence the ability of low- and high-importance individuals to resist persuasion.

The second reason for examining attitude importance in the context of a warning study is that we wanted to replicate and extend our previous work (Zuwerink & Devine, 1996), with an eye toward understanding when low-importance individuals might be motivated and able to resist persuasion. We have shown that high-importance individuals are more resistant to persuasion than their low-importance counterparts, even in the absence of a forewarning. In this research, we sought to identify conditions under which even low-importance individuals might become motivated and able to resist a counterattitudinal message. We hypothesized that warning them of an impending attack on their attitudes and giving them time to think about it should motivate and enable resistance. With time to consider their attitudes in light of an impending attack, these individuals should be motivated and able to bring to mind attitude-supportive thoughts, beliefs, and feelings (cf. Zanna & Rempel, 1988).

Another goal of this research was to extend the message content warning literature by examining both cognitive and affective responses as potential mediators of forewarning effects. Research findings suggest that the effect of message content warnings on attitudes is mediated by a cognitive counterarguing process (Chen et al., 1992; Freedman & Sears, 1965; Hass & Grady, 1975; Petty & Cacioppo, 1977; Romero et al., 1996). For example, Freedman and Sears (1965) demonstrated that a delay (2 min or 10 min) between the warning and the message was necessary to observe the resistance conferring effect of a forewarning. These findings were interpreted to mean that the delay enabled participants to generate relevant arguments (see also Hass & Grady, 1975). Without the delay, participants were presumably unable to generate a defense and were therefore vulnerable to the persuasive attack. Since this research, it has become stan-

dard to employ a delay of at least 2 min between the warning and the message (e.g., Apsler & Sears, 1968).

Other findings are also consistent with the cognitive mediation hypothesis. For example, Petty and Cacioppo (1977) showed directly that high-involvement participants<sup>1</sup> engaged in anticipatory counterarguing following a warning but prior to receiving a counterattitudinal message. Likewise, Chen et al. (1992) found that high-involvement participants were most resistant when warned and not distracted (i.e., able to counterargue) and that they also generated the most negative thoughts about the message in this condition. In addition, Romero et al. (1996) showed that high-involvement individuals were more resistant to persuasion than low-involvement individuals when warned, and that this effect on persuasion was mediated by cognitive responses (see their Experiment 3).

Such findings confirm the importance of cognitive processes in mediating the effect of message content warnings on resistance. Nevertheless, the exclusive focus on cognitive processes is a potentially limiting feature of this literature. We suggest that message content warnings can stimulate not only counterarguing but also negative affect. For example, someone who enjoys alcohol is likely to get angry or irritated at the thought of listening to a pending sermon on its evils. Our previous work (Zuwerink & Devine, 1996) showed that negative affect (specifically, irritation-related feelings) is a significant part of the process by which individuals resist persuasion. Our findings support the classic, but empirically neglected assumption that both thoughts and feelings mediate persuasion effects (e.g., Sherif, Sherif, & Nebergall, 1965). In this research, we examined both cognitive and affective responses to a persuasive message. Using path analytic techniques, we demonstrate that forewarning effects on final attitudes are mediated by both thoughts and negative affect.

## OVERVIEW AND PREDICTIONS

In this research, individuals in favor of allowing gay people to serve openly in the military were presented with a counterattitudinal speech. Half of these individuals considered the issue to be high in personal importance, and half considered it to be low in personal importance. Prior to the speech, participants were either warned or not warned of the topic and position taken by the speaker and given either 2 min or no time before hearing the message. Both cognitive and affective responses to the message were measured. Based on our earlier discussion of important attitudes as well as on our previous work (Zuwerink & Devine, 1996), we expected high-importance individuals to be more resistant to

the counterattitudinal message than their low-importance counterparts. We also expected them to counterargue more and to report more negative affect in response to the message.

Our central focus, however, concerns how this overall importance effect might be moderated by our experimental factors (warning and delay). Specifically, we predicted that the warning and delay manipulations would have little effect on high-importance individuals, whereas they would have an effect on low-importance individuals. Because the attitudes of high-importance individuals are highly accessible, these individuals should be able to bring quickly and easily to mind thoughts and feelings that help them defend their attitude. Whether warned or not, these individuals should be motivated and able to resist a counterattitudinal message (cf. Zuwerink & Devine, 1996). Because the attitudes of low-importance individuals are relatively less accessible (Krosnick, 1989), we expected them to benefit most from the combination of a message content warning and a delay period. Under such conditions, these individuals should be most motivated and able to bring their attitudes to mind, along with whatever cognitive and affective responses they have concerning the attitude issue (Zanna & Rempel, 1988).

Evidence of their greater preparedness to resist in the warned–delay condition could take two forms. First, it is possible that they will generate the most thoughts in this condition. This prediction presupposes that low-importance individuals are unable to generate relevant arguments without a warning and delay. However, the procedure we employ involves having participants first listen to a counterattitudinal message and then write out whatever thoughts came to mind during the message. Thus, by the time the thought listing task is given, all participants have had some time to think about the message vis-à-vis their attitudes. Thus, we did not expect a warning–delay effect on simply the number of thoughts generated by low-importance individuals. Consistent with this reasoning, we have found that low- and high-importance individuals generated the same number of total thoughts in response to a counterattitudinal message (Zuwerink & Devine, 1996). Instead, we expected the quality of their thoughts to be influenced by the warning and delay. Specifically, we expected them to look most like their high-importance counterparts—to be most motivated to resist changing their attitudes—in this condition. Thus, low-importance individuals should generate the most affectively charged negative thoughts and have the most negative affect in the warned–delay condition.

In summary, we predicted a main effect for importance on final attitudes, negative thoughts, and negative affect. High-importance individuals should be more resistant to persuasion than their low-importance counterparts, and they should generate more negative thoughts and negative affect in response to the counterattitudinal message. We also predicted a three-way interaction on final attitudes such that high-importance individuals would be equally resistant regardless of the warning and delay manipulations, whereas

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<sup>1</sup>This study did not contain any low-involvement conditions.

low-importance individuals would be most resistant in the warned–delay condition. These effects on final attitudes were expected to be mediated by both negative thoughts and negative affect.

## METHOD

### Participants and Design

Our method and materials were closely modeled after Zuwerink and Devine (1996). In a pretesting session, introductory psychology students reported their attitude toward allowing gays to serve openly in the military<sup>2</sup> on four semantic differential scales (*Good–Bad*, *Beneficial–Harmful*, *Unfavorable–Favorable*, *Foolish–Wise*). An attitude index was created, after reverse scoring when necessary, so that higher numbers indicated more favorable attitudes (Cronbach’s  $\alpha = .94$ ). In the same session, we measured attitude importance by having people rate their agreement with the following statements: (a) “My attitude toward gays in the military is very important to me personally,” (b) “I do not care personally about this issue,” and (c) “I am personally very concerned about this issue.” Responses on 9-point disagree–agree scales were averaged, after reverse scoring the second statement, such that higher numbers indicate greater attitude importance (Cronbach’s  $\alpha = .80$ ).

Of those who were initially favorable toward allowing gays in the military, participants were selected from among those scoring in the upper and lower third of the distribution of importance scores. Approximately 8 weeks after pretesting, eligible individuals were contacted by phone and asked to participate in the study in exchange for extra credit. Ninety-five participants (34 men and 61 women) were successfully recruited. The mean attitude score for the low-importance group was 7.56 ( $SD = 1.02$ ,  $n = 47$ ), and their mean importance score was 1.33 ( $SD = 0.47$ ). The mean attitude score for the high-importance group was 7.89 ( $SD = 1.09$ ,  $n = 48$ ), and their mean importance score was 6.35 ( $SD = 1.22$ ). The design was a 2 (importance: low vs. high)  $\times$  2 (warning: unwarned vs. warned)  $\times$  2 (delay: 0 min vs. 2 min) between-subjects factorial, with high- and low-importance individuals randomly assigned to the warning and delay conditions.

### Procedure

People participated in groups of one to nine in a room with partitions that prevented interaction. All participants were told that the study concerned measuring different aspects of

people’s attitudes and opinions using a variety of formats and scales. They were told that the specific attitude issue we chose to use concerned the debate over whether gays should be allowed to serve openly in the military. Before being asked to report their own opinions, they were informed that we would play an essay reflecting one person’s take on this issue. The rationale for playing the essay was that previous research has made it

clear that some people really prefer hearing someone else’s opinions before having to express their own opinions. Not everyone feels that way, and that’s fine. But we’ve decided to play a speech for the sake of those people who do like to hear others’ opinions first.

All participants were then told that we had collected speeches from students who were in favor of or against allowing gay people in the military but that because of time constraints, each experimental session had been randomly assigned to hear just one speech. Of course, all participants heard a counterattitudinal speech that argued against gays in the military.

Following these introductory remarks, participants were warned or not of the position of the speaker. In the warned conditions, participants were told that their session had been “assigned to hear a speech on the side of not lifting the ban on gays in the military. So the speaker will be arguing against allowing gays to serve openly in the military.” In addition, participants were given either a 2-min delay or no delay before hearing the speech. In the delay condition, Julia Zuwerink Jacks excused herself to go find the tape in another lab room and returned 2 min later.<sup>3</sup> All participants then heard a tape-recorded speech, delivered by a male voice, arguing against allowing gays in the military. This 3½-min speech was the same as that used by Zuwerink and Devine (1996, Study 1). It consisted of five main arguments:

1. Gays in the military undermine unit cohesion and combat performance.
2. It is uncomfortable to shower, and so on, in front of others who view one as a sex object.
3. The distinct cultural identity and moral code of the military would be violated by the acceptance of gays.
4. Pushing for gays in the military is part of the “gay agenda,” but the “majority” of Americans think homosexuality is wrong.
5. It is not in America’s best interest to experiment with the military or use it as a social science laboratory.

<sup>2</sup>This issue was a relatively salient one in the media and on campus at the time this research was conducted.

<sup>3</sup>The door was left ajar, and Julia Zuwerink Jacks went two doors down the hallway to get the tape. Although we cannot guarantee that participants did not interact during the 2-min delay, the partitions greatly discouraged talking amongst participants, and in no session did Julia hear any talking going on while she was in the hallway.

## Dependent Measures

Following the counterattitudinal message, participants completed a thought-listing task and reported their affective reactions to the message, in counterbalanced order. Last, they reported their final attitude toward allowing gays in the military.

**Thought-listing.** Participants were asked to take about 3 min to write in a series of “thought-listing boxes” any thoughts they had while the message was being played. They were encouraged to write down all of their thoughts, whether favorable to, opposed to, neutral toward, or irrelevant to the message (Petty & Cacioppo, 1986).

**Affect.** Participants were asked to indicate how they were feeling while the message was being played by rating a series of 35 positive and negative affect items on a scale ranging from 1 (*does not apply at all*) to 7 (*applies very much*). This measure was identical to that used by Zuwerink and Devine (1996) and contained six adjectives conceptually related to irritation (i.e., *agitated, angry, annoyed, bothered, disgusted, and irritated*) along with filler items (e.g., *happy, optimistic, uncertain, sad, confused, uncomfortable, good*). As in our previous work, an Irritation index was formed by averaging responses to the six irritation-related items (Cronbach’s  $\alpha = .93$ ). Higher numbers indicate more irritation-related feelings in response to the message. Similar affect rating tasks have been used successfully in other domains such as prejudice (e.g., Devine, Monteith, Zuwerink, & Elliott, 1991) and consumer behavior (Burke & Edell, 1989).

**Final attitude.** Final attitudes were assessed using the same semantic differential items used in pretesting (Cronbach’s  $\alpha = .93$ ). Higher numbers again indicate more favorable attitudes toward allowing gays in the military and, therefore, greater resistance to the message.

## Coding Thought-Listings

Two independent judges categorized each thought as being favorable, unfavorable, or neutral toward either the content of the message or its source. Judges agreed on the coding of 81% of the thoughts listed (Cohen’s  $\kappa = .70$ ). Disagreements were resolved by Julia Zuwerink Jacks. Thoughts were then examined for their negative affective tone. All unfavorable thoughts directed at the source (e.g., “he has a clear bias against homosexuals—Ugh”) and some unfavorable issue-relevant thoughts (e.g., “I was angry about what he said”) were judged to be affectively charged. Other negative issue-relevant thoughts were not affectively charged (e.g., “having gays will not affect cohesiveness”). Judges agreed

on the coding of 95% of the thoughts (Cohen’s  $\kappa = .81$ ). Table 1 shows the mean number of thoughts in each category.

Based on this coding, we formed two thought indexes. The first, the Negative Thoughts (NT) index, reflects the extent to which individuals generated more negative than positive thoughts in response to the message and was formed by subtracting all favorable thoughts from all unfavorable thoughts. We also wanted to examine the extent to which individuals generated affectively charged thoughts in response to the message. Following Zuwerink and Devine (1996), we calculated a negative affective elaborations (NAE) index by first adding all affectively charged unfavorable thoughts (both source directed and issue-relevant) and then subtracting source-directed favorable thoughts.

## RESULTS

### Preliminary Analyses<sup>4</sup>

Analysis of covariance (ANCOVA) was used to control for possible pretest differences in initial attitudes toward allowing gays to serve openly in the military. For all ANCOVAs reported, we included covariate interactions in the initial analyses (Hull, Tedlie, & Lehn, 1992). Nonsignificant covariate interactions were trimmed in a step-wise fashion. In no case was the covariate (pretest attitude) involved in a significant higher order interaction. To preserve power, the analyses we report include pretest attitude as a covariate main effect only.

Eta squared ( $\eta^2$ ) is reported with ANCOVA results as a measure of effect size. Eta squared is the proportion of variance in the dependent variable that is explained by differences among groups. It equals the between groups sum of squares divided by the total sum of squares. Standardized regression coefficients (beta weights) are reported with regression results.

### Final Attitudes

To test whether groups differed on pretest attitude, an Importance  $\times$  Warning  $\times$  Delay analysis of variance was conducted on that measure. This analysis revealed only a marginal inter-

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<sup>4</sup>Data were collected in sessions consisting of both low- and high-importance individuals, and each session received the same warning and delay manipulations. This fact leaves open the possibility of nonindependent responses within sessions. However, individuals—separated by partitions—did not appear to interact with one another in any way (see Footnote 3). Nevertheless, as one way of dealing with the dependence issue, we analyzed the data using session rather than individuals as the unit of analysis. Within a given session, the scores of all low-importance participants were averaged, and the scores of all high-importance participants were averaged. (A strict adherence to this solution would require collapsing across importance, but doing so would eliminate that factor of the design.) Scores were then analyzed in an Importance  $\times$  Warning  $\times$  Delay analysis of variance. The pattern of means remained basically unchanged from the pattern based on individual scores. To preserve power, we assume independence and report analyses by individuals rather than sessions.

TABLE 1  
Mean Number of Thoughts as a Function of Coding Category

Category	<i>M</i>	<i>SD</i>
Source-directed		
Neutral	0.17	0.45
Favorable	0.11	0.42
Unfavorable (affectively charged)	0.75	1.11
Issue relevant		
Neutral	0.83	1.16
Favorable	0.43	0.91
Unfavorable	2.99	2.22
Nonaffectively charged	2.47	2.15
Affectively charged	0.52	0.95

action between importance and delay,  $F(1, 87) = 3.77, p < .06, \eta^2 = .04$ . In the no delay conditions there was no difference between low-importance ( $M = 7.77$ , standard error [ $SE$ ] = .22) and high-importance ( $M = 7.68, SE = .22$ ) participants,  $F(1, 43) = 0.08, p > .77, \eta^2 = .002$ . In the delay conditions, low-importance participants had less favorable attitudes ( $M = 7.35, SE = .22$ ) than their high-importance counterparts ( $M = 8.10, SE = .22$ ),  $F(1, 44) = 6.71, p < .02, \eta^2 = .13$ . The main effect for importance, however, was not significant,  $F(1, 87) = 2.29, p > .13, \eta^2 = .03$ . Overall, then, the low- and high-importance groups had equally extreme attitudes at pretest.

Final attitudes were examined using ANCOVA, with pretest attitude as a covariate.<sup>5</sup> The covariate was significant,  $F(1, 86) = 5.56, p < .05, \eta^2 = .06$ , and adjusted means are reported. As expected, we observed a significant importance main effect indicating that high-importance individuals were more resistant to the counterattitudinal message ( $M = 7.24, SE = .24$ ) than were their low-importance counterparts ( $M = 6.43, SE = .25$ ),  $F(1, 86) = 5.55, p < .05, \eta^2 = .06$ . In addition, the expected three-way interaction was significant,  $F(1, 86) = 4.54, p < .05, \eta^2 = .06$  (see Figure 1). Simple effects analyses revealed a significant Warning  $\times$  Delay interaction for low-importance individuals,  $F(1, 42) = 4.36, p < .05, \eta^2 = .05$ , but not for high-importance individuals,  $F(1, 43) = 0.76, p > .30, \eta^2 = .01$ . A planned contrast confirmed that low-importance individuals in the warned–delay condition ( $M = 7.40$ ) were more resistant compared to those in the other three conditions (combined  $M = 6.10$ ),  $F(1, 42) = 4.11, p < .05, \eta^2 = .10$ . This contrast was not significant for the high-importance individuals,  $F(1, 43) = 0.07, p > .80, \eta^2 = .002$ .

### Cognitive and Affective Response Measures

To understand the dynamics of resistance for both high- and low-importance individuals, we next examined their cogni-

tive and affective responses to the message using ANCOVA. Pretest attitude was a significant covariate in the analysis of the Irritation index,  $F(1, 86) = 8.29, p < .01, \eta^2 = .09$ , marginally significant in the analysis of the NAE index,  $F(1, 86) = 3.31, p < .08, \eta^2 = .04$ , and nonsignificant in the analysis of the NT index,  $F(1, 86) = 0.54, p > .46, \eta^2 = .01$ . Adjusted means are reported for irritation and the NAE index.

The analysis of the NT index yielded a main effect for importance,  $F(1, 87) = 11.44, p < .001, \eta^2 = .12$ .<sup>6</sup> High-importance individuals generated more negative thoughts ( $M = 4.19, SE = .41$ ) than their low-importance counterparts ( $M = 2.20, SE = .42$ ), regardless of warning or delay conditions. This analysis also yielded a marginal Importance  $\times$  Warning  $\times$  Delay interaction,  $F(1, 87) = 3.75, p < .06, \eta^2 = .04$ . For low-importance individuals, the planned contrast was not significant,  $F(1, 43) = 0.43, p > .60, \eta^2 = .01$ , indicating that these individuals did not generate more negative thoughts in the warned–delay condition relative to the other three conditions (see Table 2). This contrast was also nonsignificant for high-importance individuals,  $F(1, 44) = 0.02, p > .80, \eta^2 = .001$ . However, inspection of the means suggests that high-importance individuals in the unwarned–no delay condition generated the fewest negative thoughts ( $M = 2.92$ ). Post hoc comparisons revealed that this mean was significantly different from the unwarned–delay condition ( $M = 5.17$ ),  $F(1, 44) = 7.34, p < .05, \eta^2 = .17$ . This difference was not expected and is difficult to interpret theoretically. No other comparisons among the high-importance individuals were significant, all  $F$ s  $< 3.99, p$ s  $> .05, \eta^2$ s  $< .09$ .

Thus, apart from the main effect for importance, there were few differences in the total number of negative thoughts participants generated. However, we considered it theoretically

<sup>5</sup>An initial analysis including sex as a factor revealed no sex effects on final attitudes, all  $F$ s  $< 1.87, p$ s  $> .18, \eta^2$ s  $< .025$ .

<sup>6</sup>An initial analysis including sex as a factor revealed a main effect for sex,  $F(1, 78) = 5.94, p < .02, \eta^2 = .07$ . Women generated more negative thoughts in response to the message ( $M = 3.91, SE = .38$ ) than did men ( $M = 2.12, SE = .58$ ). No other effects involving sex were significant. This effect is not theoretically meaningful, and because no sex effects were found on final attitudes, we do not consider it in the mediation analyses subsequently reported.

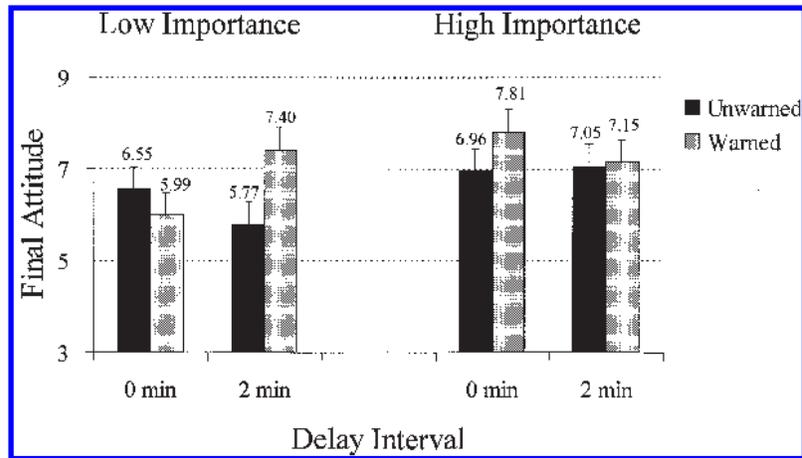


FIGURE 1 Mean final attitude scores, adjusted for pretest attitude, as a function of attitude importance, warning, and delay conditions. Note that higher numbers indicate more favorable attitudes toward allowing gays in the military and, therefore, greater resistance. Error bars reflect standard errors.

TABLE 2  
Mean Values for Cognitive and Affective Response Measures as a Function of Attitude Importance, Warning, and Delay Conditions

Dependent Measure	Low Importance								High Importance							
	Unwarned				Warned				Unwarned				Warned			
	0 Min <sup>a</sup>		2 Min <sup>b</sup>		0 Min <sup>b</sup>		2 Min <sup>b</sup>		0 Min <sup>b</sup>		2 Min <sup>b</sup>		0 Min <sup>b</sup>		2 Min <sup>b</sup>	
	M	SE														
Negative Thoughts index	2.64 <sub>a</sub>	0.86	1.50 <sub>a</sub>	0.83	2.00 <sub>a</sub>	0.83	2.67 <sub>a</sub>	0.83	2.92 <sub>A</sub>	0.83	5.17 <sub>B</sub>	0.83	4.58 <sub>AB</sub>	0.83	4.08 <sub>AB</sub>	0.83
NAE index	0.55 <sub>a</sub>	0.48	0.47 <sub>a</sub>	0.46	0.72 <sub>ab</sub>	0.46	1.34 <sub>b</sub>	0.47	1.62 <sub>AB</sub>	0.46	1.07 <sub>A</sub>	0.47	2.32 <sub>B</sub>	0.46	1.13 <sub>A</sub>	0.47
Irritation index	2.80 <sub>a</sub>	0.45	2.89 <sub>a</sub>	0.43	3.41 <sub>a</sub>	0.43	4.75 <sub>b</sub>	0.44	5.13 <sub>BC</sub>	0.43	4.45 <sub>AB</sub>	0.43	5.61 <sub>C</sub>	0.43	3.83 <sub>A</sub>	0.43

Note. NAE = negative affective elaborations. Means for the NAE index and the Irritation index are adjusted to control for pretest attitude. Mean comparisons were conducted separately for low- and high-importance conditions. Within importance level, means not sharing a subscript differ at  $p < .05$ .  
<sup>a</sup> $n = 11$ . <sup>b</sup> $n = 12$ .

important to examine the qualitative nature of the thoughts generated. That is, although the number of negative thoughts was not affected by the experimental factors, the kinds of thoughts generated may have been. Specifically, we wanted to examine the number of affectively charged negative thoughts that participants generated in response to the counter-attitudinal message.<sup>7</sup> Analysis of the NAE index revealed a main effect for importance,  $F(1, 86) = 5.32, p < .05, \eta^2 = .06$ . High-importance individuals generated more affectively charged negative thoughts ( $M = 1.53, SE = .23$ ) than low-importance individuals ( $M = 0.77, SE = .24$ ). Importantly, the planned contrast comparing the warned-delay condition ( $M = 1.34$ ) with the other conditions (combined  $M = 0.58$ ) was sig-

nificant for low-importance individuals,  $F(1, 42) = 4.37, p < .05, \eta^2 = .09$  (see Table 2). This result suggests that low-importance individuals were more upset and irritated in the warned-delay condition relative to the other conditions. This contrast was not significant among the high-importance individuals,  $F(1, 43) = 0.75, p > .45, \eta^2 = .01$ .

Finally, we examined affective reactions to the message as revealed in the Irritation index.<sup>8</sup> Again replicating Zuwerink and Devine (1996), a main effect for importance revealed that high-importance individuals were more irritated in response to the message ( $M = 4.76, SE = .22$ ) than were their low-importance

<sup>7</sup>An initial analysis of the NAE index revealed no effects involving sex,  $F_s < 2.44, ps > .13, \eta^2_s < .03$ .

<sup>8</sup>An initial analysis of the Irritation index revealed a main effect for sex,  $F(1, 78) = 9.84, p < .002, \eta^2 = .11$ . Women were more irritated in response to the message ( $M = 4.47, SE = .19$ ) than were men ( $M = 3.39, SE = .29$ ). No other effects involving sex were significant.

tance counterparts ( $M = 3.46, SE = .22$ ),  $F(1, 86) = 17.43, p < .001, \eta^2 = .17$ . This main effect was qualified by an Importance  $\times$  Warning interaction,  $F(1, 86) = 4.56, p < .05, \eta^2 = .05$ , and an Importance  $\times$  Delay interaction,  $F(1, 86) = 9.71, p < .01, \eta^2 = .10$ . Both of these interactions were qualified by an Importance  $\times$  Warning  $\times$  Delay interaction,  $F(1, 86) = 3.66, p < .06, \eta^2 = .04$ . As is evident in the last row of Table 2, the pattern of means for the low-importance individuals closely parallels their NAE index and final attitude scores. The planned comparison between the warned delay condition ( $M = 4.75$ ) and the other conditions (combined  $M = 3.03$ ) was significant,  $F(1, 42) = 12.75, p < .05, \eta^2 = .23$ . Thus, low-importance individuals were more irritated, generated the most affectively charged negative thoughts, and were the most resistant in the warned–delay condition. Unexpectedly, the high-importance individuals were least irritated in the warned–delay condition ( $M = 3.83$ ) compared to the other three conditions (combined  $M = 5.06$ ),  $F(1, 43) = 5.81, p < .05, \eta^2 = .10$ . It is not clear why these individuals should be least irritated in the warned–delay condition. We speculate that the delay following the warning may have given them time to prepare, not just cognitively but also emotionally, for an attack on their attitudes. With such preparation, they did not get upset and irritated by the counterattitudinal message.

**Mediation Analysis**

The results so far suggest that low-importance individuals were most resistant in the warned–delay condition because they got most irritated and generated the most affectively charged negative thoughts in that condition. To address mediational issues, we conducted a process analysis using

multiple regression techniques (Judd & Kenny, 1981a, 1981b). In all regressions reported, predictor variables were centered (Aiken & West, 1991). The “direct effects model” included pretest attitude entered as a covariate plus the seven terms constituting the full factorial design (Importance  $\times$  Warning  $\times$  Delay).

Recall from the ANCOVA on final attitudes that the primary effect to be mediated is a 3-way interaction. High-importance individuals were little affected by the warning and delay manipulations. However, the low-importance individuals were most resistant when both warned and given a delay. The first requirement for a mediation analysis is to show this same effect on the mediating variable(s). Therefore, a series of regressions were performed on each of three potential mediators: the NT index, the NAE index, and the Irritation index. In these analyses, each potential mediator was regressed on the direct effects model. The 3-way interaction was evident in the analysis of the Irritation index,  $F(1, 86) = 3.66, p < .06$ , and the NT index,  $F(1, 86) = 4.03, p < .05$ . As shown in the top panel of Figure 2, when low-importance individuals were given no delay they did not get irritated,  $F(1, 86) = 0.95, p > .33, \beta = .17$ , and generated no more negative thoughts,  $F(1, 86) = 0.30, p > .58, \beta = -.11$ , when warned than unwarned. However, the bottom panel of Figure 2 shows that after a delay, low-importance individuals got much more irritated,  $F(1, 86) = 9.29, p < .003, \beta = .53$ , but did not generate more negative thoughts,  $F(1, 86) = 1.14, p > .28, \beta = .21$ , when warned than unwarned. Warning and delay conditions had no significant effect on the irritation and negative thoughts of high-importance individuals, all  $F$ s  $< 2.21, p$ s  $> .14, \beta$ s  $\leq .29$  (see Figure 3). In other words, the degree to which

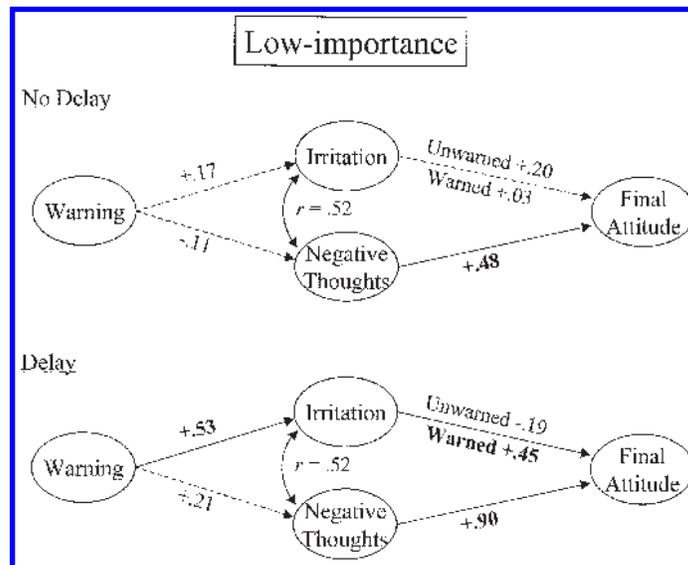


FIGURE 2 Standardized path coefficients for low-importance individuals in no delay (top panel) and delay (bottom panel) conditions. Significant path coefficients are in bold. Higher final attitude scores indicate greater resistance to persuasion. Warning was coded such that unwarned = -1 and warned = 1.

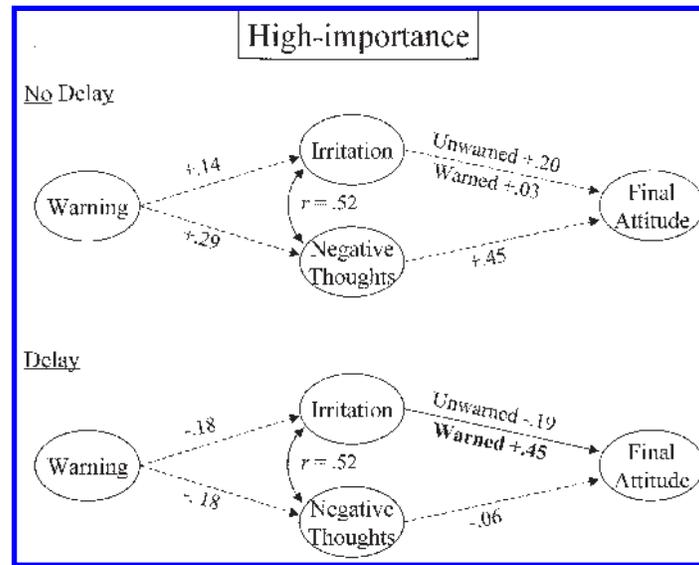


FIGURE 3 Standardized path coefficients for high-importance individuals in no delay (top panel) and delay (bottom panel) conditions. Significant path coefficients are in bold. Higher final attitude scores indicate greater resistance to persuasion. Warning was coded such that unwarned = -1 and warned = 1.

high-importance individuals got irritated and generated negative thoughts was not moderated by the warning or delay manipulations.

The final step in the process analysis was to see if the mediators significantly predict final attitude scores while controlling for the direct effects model. We tested both simple and interactional models. We report the interactional mediation model because it accounted for significantly more variance in final attitude than the simple model,  $\Delta R^2 = .11$ ,  $F(6, 78) = 2.90$ ,  $p < .05$ . The total  $R^2$  associated with the interactional model was .50,  $F(16, 78) = 4.89$ ,  $p < .001$ . Importantly, the 3-way interaction from the direct effects model was reduced to nonsignificance,  $F(1, 78) = 2.25$ ,  $p > .13$ ,  $\beta = -.16$ . The main effect for importance was also reduced to nonsignificance,  $F(1, 78) = 1.05$ ,  $p > .30$ ,  $\beta = .10$ . Thus, negative thoughts and irritation together successfully mediated the effect of the importance, warning, and delay factors on final attitudes.

For this analysis, interaction terms were computed by crossing each mediator with each of the seven terms in the full factorial design. Nonsignificant higher order terms were then trimmed (Judd & Kenny, 1981a). The final model consisted of the direct effects model, main effects for the Irritation and NT indexes, three interactions with irritation (Irritation  $\times$  Warning, Irritation  $\times$  Delay, and Irritation  $\times$  Warning  $\times$  Delay), and three interactions with the NT index (NT  $\times$  Importance, NT  $\times$  Delay, and NT  $\times$  Importance  $\times$  Delay).

Both mediators were involved in significant interactions. The NT index interacted with importance and delay,  $F(1, 78) = 5.44$ ,  $p < .05$ . Figure 2 shows that for low-importance individuals, negative thoughts contributed to resistance (i.e., higher final attitude scores) regardless of the warning manipulation but that this effect was stronger following a delay,  $F(1, 78) =$

24.21,  $p < .001$ ,  $\beta = .90$ , than no delay,  $F(1, 78) = 5.72$ ,  $p < .02$ ,  $\beta = .48$ . The greater impact of negative thoughts in the delay condition is likely due to the greater number of affectively charged thoughts these participants generated in the warned-delay condition (see Table 2). Figure 3 shows that negative thoughts appear not to be associated with the resistance of high importance individuals in the delay condition,  $F(1, 78) = 0.11$ ,  $p > .74$ ,  $\beta = -.06$ , or in the no delay condition,  $F(1, 78) = 2.50$ ,  $p > .11$ ,  $\beta = .45$ , but recall that there is no experimental effect to be mediated for these individuals.

The Irritation index interacted with the delay and warning conditions,  $F(1, 78) = 3.67$ ,  $p < .06$ , but not with importance. Thus, the path coefficients from irritation to final attitude are the same for both low- and high-importance participants (Figures 2 and 3). Irritation was significantly associated with resistance in the warned-delay condition,  $F(1, 78) = 5.27$ ,  $p < .03$ ,  $\beta = .45$ . It was not associated with resistance in the other three conditions,  $F_s < 0.68$ ,  $p_s > .40$ ,  $\beta_s \leq .20$ .

Another way of describing the model presented in Figures 2 and 3 is to say that the process by which high- and low-importance individuals resisted persuasion was very similar in the no delay conditions (top panels of Figures 2 and 3). Specifically, the amount of irritation and negative thoughts generated was unaffected by the warning manipulation. To the extent that individuals did resist in the no delay condition, it appears to be primarily due to the thoughts they generated. However, the picture differs for low- and high-importance individuals in the delay conditions. High-importance individuals were again unaffected by the warning and delay manipulations. Low-importance individuals, on the other hand, became much more irritated in the warned-delay condition, and that irritation contributed significantly to their

greater resistance. Although they did not generate more negative thoughts when warned or not, thoughts did contribute significantly to resistance for these individuals.

## DISCUSSION

These results underscore the benefits of examining both cognitive and affective processes in the study of persuasion dynamics, as well as the benefit of examining attitude importance as an indicator of attitude strength. Replicating our previous work (Zuwerink & Devine, 1996), we found that high-importance individuals were more resistant to a counterattitudinal message than their low-importance counterparts. Extending those findings, we have shown that high-importance individuals are resistant whether warned and given time to think about it or not. Further, low-importance individuals became motivated and able to defend their attitudes when warned and given a delay before hearing the message. They were significantly more resistant to persuasion under these conditions than if they were unwarned, not given time to prepare before hearing the speech, or both. Finally, the process analysis suggests that both cognitive and affective responses mediated the effects of importance, warning, and delay on final attitudes.

For low-importance individuals, both irritation and negative thoughts contributed to their greater resistance in the warned–delay condition (see Figure 2). These results extend our previous research (Zuwerink & Devine, 1996) to show that, under certain conditions, low-importance individuals resist persuasion via both cognitive and affective means. Superficially, the process analysis for high-importance individuals appears not to replicate our earlier work. That is, negative thoughts and irritation do not appear to work together to mediate persuasion effects. However, one must keep in mind that the experimental factors had no effect on these individuals. Thus, there was no experimental effect to be mediated in Figure 3. Overall, these individuals did generate more negative thoughts and negative affect than their low-importance counterparts, which replicates our previous work. Most important, what is clear from the path analysis is that both negative thoughts and irritation are necessary to most fully account for the effects of all three research factors (importance, warning, and delay) on final attitudes.

An interesting avenue for future research concerns the role of attitude importance versus involvement in moderating message content warning effects. Should one expect negative affect, along with cognitive responses, to help mediate the effect of involvement on persuasion? It is certainly possible. Given that affective responses have not been assessed in prior forewarning research, it is difficult to make definitive predictions. Yet we suspect that negative affective reactions to persuasive messages are most likely to be observed when the attitude being challenged is pre-existing, strong, and self-relevant (cf. Sherif et al., 1965). It is doubtful, then, that the involvement manipulations typically employed in per-

suation research would lead to strong affective responding. Nevertheless, given that affect has not been examined in this literature, a definitive answer to these issues awaits further research. In fact, we advocate routinely examining thought listing protocols for negative affect and including an affect rating task in the battery of dependent measures used in persuasion research. Such an expanded analysis of people's responses to persuasive messages should significantly enhance our understanding of the dynamic processes by which people change or maintain their attitudes.

Another interesting avenue for future research concerns pinpointing why low-importance individuals in the warned–delay condition engaged in negative affective processing. We have argued that the warned–delay condition both motivated and enabled these participants to resist the persuasive message. However, it is also possible that these low-importance individuals may have changed the psychological meaning of the warning. Perhaps during the delay interval these participants decided that the message was not only in opposition to their attitudes but also designed to persuade them. Thus, they may have inferred persuasive intent, thereby functionally changing the message content warning into a persuasive intent warning. Such a transformation may be expected to elicit reactance (Brehm, 1966; Petty & Cacioppo, 1979). This reasoning could explain their heightened affective response to the message as well as their greater resistance to it. Of course, this suggestion begs the question of whether the high-importance individuals made the same inference. And if they did, why did they evidence less irritation in the warned–delay condition? Additional research will be needed to answer these questions.

Finally, our results suggest that it would be productive to examine more carefully the processes that mediate both message content and persuasive intent warnings. These different types of warnings previously have been understood to influence resistance via two distinct processes. The effect of message content warnings has been assumed to be the result of objective cognitive processing, whereas the effect of persuasive intent warnings has been assumed to be the result of biased message processing motivated by reactance (Petty & Cacioppo, 1979). Yet, this research suggests that the processes producing resistance for each type of warning may not be mutually exclusive. For example, under certain conditions (e.g., high importance), both types of warnings may elicit resistance via biased message processing and strong negative affect.

In conclusion, this research should be of interest to practitioners of persuasion who want to overcome those processes that prevent attitude change. The attitude change literature has long suggested the wisdom of tailoring message factors (e.g., strength, length, “sidedness”) and source factors (e.g., credibility, attractiveness) in a way that is best suited to the audience. For example, one should provide a two-sided communication to an involved audience that disagrees with one's position (Hovland, Lumsdaine, & Sheffield, 1949). Our

work further underscores the need to know one's audience. When the issue is of high personal importance, the persuasion practitioner should expect resistance and that resistance will likely be both cognitive and affective. When personal importance is low, being forewarned of the content and position of a persuasive message can stimulate resistance if these individuals have time to consider the upcoming communication. If it is unavoidable that the audience is aware of the content and position of one's message, the persuasion practitioner may be well advised to distract the audience (perhaps with a few good jokes that might also diffuse potential feelings of irritation) prior to delivering the message.

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