

Forewarning, Cognitive Responding, and Resistance to Persuasion

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The effects of forewarning of the content of impending discrepant communications on involving topics were investigated in two experiments. In Experiment 1, it was found that regardless of whether or not subjects listed their thoughts, warnings produced resistance to persuasion if a delay interval between warning and message was provided. Also, warned subjects who listed their thoughts showed evidence of anticipatory counterargumentation. In Experiment 2, subjects either were asked to record what their actual thoughts had been during the delay period or were instructed to write only thoughts relevant to the topic. Warned subjects showed evidence of anticipatory counterargumentation; only unwarned subjects who recorded their actual thoughts showed susceptibility to persuasion; and unwarned subjects who were instructed to write thoughts on the topic displayed postmessage resistance to persuasion equivalent to that of warned groups. Together, these experiments provide evidence that anticipatory counterargumentation mediates the resistance to persuasion conveyed by a forewarning of message content.

McGuire and Papageorgis (1962) suggested that forewarning an audience of an upcoming discrepant communication produced resistance to persuasion by stimulating anticipatory counterarguments to the impending message. The notion is that subjects use the period following the warning but preceding the message to consider arguments supporting their own position and refuting antagonistic positions. These anticipatory cognitive responses presumably confer resistance to the subsequent persuasion attempt.

For example, take the case of a college freshman who intends to inform his parents of a desire to drop out of school. The student should be more persuaded by his parents' arguments against his position if he did not

expect them to wage an antagonistic communication than if he were forewarned of their opposition. Similarly, forewarnings of television commercials presenting a discrepant message ("And now a word from our sponsor . . .") might reduce persuasibility by eliciting anticipatory counterargumentation.

A pair of experiments was conducted to explore the mediator of the persuasion-inhibiting effects of forewarnings of the content of impending discrepant communications. The first goal was to assess whether or not persons actually engage in counterargumentation in the postwarning, premessage interval by obtaining a listing of subjects' thoughts for that interval. A second goal was to test a derivation from the counterargument hypothesis—that it is not the forewarning per se that produces resistance to persuasion, but the fact that persons are motivated by the warning to consider more fully their own positions. This implies that resistance can be produced in an *unwarned* group by instructing them to think about the topic. Experiment 1 was primarily designed to meet the first goal; Experiment 2, the second.¹

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¹It should be noted that the counterargument hypothesis applies only when the forewarning pro-

Previous experiments on the effects of warning recipients of the content of impending discrepant communications have not produced uniform results. Some experiments have shown that the person becomes more resistant to the persuasive attempt (e.g., Allyn & Festinger, 1961; Freedman & Sears, 1965; Haas & Grady, 1975), while others have shown that the person becomes more susceptible (e.g., Cooper & Jones, 1970; Dinner, Lewkowicz, & Cooper, 1972; Mills & Aronson, 1965). Further work has indicated that resistance or susceptibility can be predicted on the basis of how (a) ego involving (Apsler & Sears, 1968) or (b) personally relevant (Cialdini, Levy, Herman, Kozlowski, & Petty, 1976) the topic of the communication is to the person, or (c) how committed the person is to a topic position (Kiesler, 1971). When a person is warned of an impending discrepant communication on a topic that is important or involving, resistance is typically found, but when the impending communication is on a topic of low importance or involvement, susceptibility is more characteristic.

Recent investigators have focused attention on the mediating mechanism operating when persons are forewarned of messages on topics of low involvement (e.g., Cialdini, Levy, Herman, & Evenbeck, 1973; Hass, 1975; Hass & Mann, 1976). These researchers have argued that enhanced susceptibility on topics of low involvement is not due to movement toward the speaker's position, as originally presumed, but is instead due to anticipatory movements toward a more moderate position. These authors have presented evidence that

vides potential recipients with knowledge about the content of the impending communication. Researchers have noted an important distinction between forewarnings of message content and forewarnings of persuasive intent (cf. Papageorgis, 1968). Forewarnings of content can produce resistance by eliciting anticipatory message-relevant thoughts; but resistance produced by forewarnings of persuasive intent (e.g., Kiesler & Kiesler, 1964) cannot be mediated similarly, since the message topic is unknown. The latter effect may instead be due to increased counterarguing during the receipt of the message or a general "reactance" to the threat to one's attitudinal freedom (Hass & Grady, 1975).

"opinion change in the direction of the position that was expected to be advocated by the communicator . . . may have been merely incidental to a shift toward neutrality" (Hass, 1975, p. 1156). Cialdini et al. (1973) and Hass and Mann (1976) argued that when an impending communication is on a topic of low importance, the dominant motive of recipients is one of self-presentation. A moderate position on the topic is adopted because it is easier to defend and/or gives the appearance of open- and broad-mindedness. As evidence that anticipatory moderation shifts on unimportant issues are tactical in nature, Cialdini et al. (1973) and Hass and Mann (1976) reported that when expectation of the impending communication is cancelled, recipients return to their prewarning positions. Thus, the mechanism mediating the effect of forewarning on topics of low involvement has been delineated in recent investigations.

The current experiments focus on the mechanism mediating the resistance to persuasion conveyed by a forewarning concerning the content of an impending discrepant communication on a highly involving topic. While recent research indicates that in anticipation of a message on a topic of low importance, self-presentation motives are aroused, on topics of high ego involvement, commitment, or personal relevance, persons should be more concerned with defending their true positions than with creating favorable impressions of themselves. This concern with defending one's position on a highly involving topic should lead to anticipatory counterargumentation and subsequent resistance to persuasion.

Rationale for Experiment 1

Despite the fact that anticipatory counterargumentation is the most prominently mentioned explanation for the persuasion-inhibiting effect of a forewarning, only indirect support for the counterargument hypothesis exists. Freedman and Sears (1965) warned subjects of an impending discrepant communication either 0, 2, or 10 minutes before the message and found that the longer the period between warning and message, the less

Table 1
Design of Experiment 1

Condition	Warning induction	Postwarning, premessage interval			Post-manipulations
Experimental groups					
Warned actual-thoughts	Warned of topic & position	Sit quietly (2.5 min.)	Write thoughts (2.5 min.)	Sit quietly (15 sec.)	Hear message and complete dependent variables
Warned attitude-only	Warned of topic & position	Sit quietly (5.25 min.)	→	→	
Unwarned actual-thoughts	Told of an impending speech	Sit quietly (2.5 min.)	Write thoughts (2.5 min.)	Sit quietly (15 sec.)	
Unwarned attitude-only	Told of an impending speech	Sit quietly (5.25 min.)	→	→	
Control groups					
Attitude-only	Told of an impending speech	Sit quietly (5 min.)	→	Warned of topic & position (15 sec.)	
Actual-thoughts	Told of an impending speech	Sit quietly (2.5 min.)	Warned of topic & position (15 sec.)	Write thoughts (2.5 min.)	

subjects were persuaded by the message. The longer the delay, presumably the more counterarguments the subjects could muster. Hass and Grady (1975) similarly reported that a forewarning of the content of an impending communication produced resistance to persuasion only when a delay was present between warning and message. This suggests that a counterargumentation period was necessary for resistance. Neither of these studies, however, provided direct support for the counterargument hypothesis.²

The primary aims of the first experiment were (a) to assess whether or not persons actually engage in counterargumentation in the postwarning, premessage interval by obtaining a listing of subjects' thoughts for that interval and (b) to test whether the thought-listing procedure would modify the attitudinal results.

Experiment 1

Method

Subjects

One hundred twenty introductory psychology students volunteered for an experiment entitled "Student Polling." Participation in the experiment partially fulfilled a course requirement. The design was a 2 (5.25-minute warning or no warning) × 2 (write thoughts or do not write thoughts) factorial, with two control groups. Twenty subjects served in each condition (see Table 1). Subjects were run in 10 group sessions in a language laboratory constructed so that no subject could have visual or auditory contact with any other subject. In any one session both warned and unwarned groups were run, although all subjects either wrote or did not write their thoughts.

Experimental Groups

Warning manipulation. When subjects arrived at the language laboratory, they were seated in individual cubicles. After all of the subjects had arrived, the experimenter instructed them to turn over the booklets that were face down on the desks. Before subjects began to read the first page of the booklet (which contained the warning manipulation), the experimenter explained that he would have to leave for a few minutes to go upstairs and retrieve an "instructions sheet." The front page of the booklet stated that the psychology department was cooperating with the "Faculty Committee on Academic Affairs" in an attempt to measure students' opinions on various campus issues. Subjects in the *unwarned* conditions read that they would be hearing a tape recording prepared by the faculty committee, which presented one of their major recommendations. Subjects in the *warned* conditions read that they would be hearing the faculty committee's tape recommending "that seniors, graduating in 1978 and beyond, be required to take a comprehensive exam in their declared major. A satisfactory passing grade on the exam, which would cover all aspects of the major area, would be required before the student was permitted to graduate." This topic was chosen

² In McGuire's (1964) research on inoculation theory, counterargumentation was studied as an independent variable, provided or requested by the experimenter, and the question of recipient-generated counterarguments was left untreated. Brock (1967) and Cialdini, Levy, Herman, Kozlowski, and Petty (1976) collected subjects' thoughts (including recipient-generated counterarguments) in a premessage interval, but since all subjects were *instructed* to write thoughts on the message topic, these experiments did not provide evidence that subjects spontaneously think about the topic in the premessage interval. Also, Brock (1967) contained no *unwarned* groups for comparison purposes, and Cialdini et al. (1976) did not actually deliver a message, and thus *resistance* could not be assessed.

because pilot testing had revealed that students were opposed to the idea of a comprehensive exam and in addition was an issue of high personal relevance.

Thought-listing manipulation. For five of the group sessions that were run, the experimenter returned with his instructions sheet in 2.5 minutes, and told subjects to turn to the next page in their booklets. Employing a procedure adapted from Brock (1967) and Greenwald (1968), subjects read:

We are now interested in what you were thinking about during the last few minutes . . . Simply write down the first idea that comes to mind in the first box, the second idea in the second box, etc. Please put only one idea or thought in a box. You should try to record only those ideas that you were thinking during the last few minutes. You will have 2½ minutes to write your thoughts . . . Please be completely honest and list all of the thoughts that you had

Twelve 8-inch (20.32 cm) horizontal lines each about 1 inch (2.54 cm) from the one above created the boxes in which subjects were to write their ideas. Shortly after the 2.5 minutes for writing thoughts had elapsed, the subjects listened to the tape prepared by the "faculty committee" over headphones. Conditions in which subjects listed their thoughts are referred to as *actual-thoughts* conditions.

For five other sessions that were run, the experimenter returned with his instructions sheet in 5 minutes, and told subjects to turn to the next page in their booklets. Subjects in these conditions merely read a brief reminder that they would be hearing a tape prepared by the faculty committee and then listened to the tape. Conditions in which subjects did not list their thoughts will be referred to as *attitude-only* conditions.

Control Groups

Attitude-only control. If *warned attitude-only* subjects were more resistant to persuasion than *unwarned attitude-only* subjects, this might be attributed to the warning per se. It was thus desirable to include a group that was warned, but did not have time to think about the topic before hearing the message. The *attitude-only control* served this purpose. This group was run identically to the *unwarned attitude-only* group described earlier except that they read a passage warning them of the topic of the upcoming communication immediately prior to exposure. This warning was identical to that given to the experimental warned groups.

Actual-thoughts control. If *warned actual-thoughts* subjects wrote counterarguments on the topic while *unwarned actual-thoughts* subjects did not, this might be attributed to the fact that unwarned subjects did not know what the topic was before being asked to list their thoughts. It was thus desirable to include a group that did not have time

to think about the topic before listing thoughts, but did at least have knowledge of the impending topic when listing their thoughts. The *actual-thoughts control* group served as a check on the validity of the actual-thoughts measure, and hence only the cognitive response measures were of interest. This group was run identically to the *unwarned actual-thoughts* group described earlier except that immediately after reading the thought-listing instructions, but before listing their thoughts, subjects read a passage warning them of the topic of the upcoming communication. This warning was identical to that given the experimental warned groups and the *attitude-only control*.

The Message

The message lasted about 3 minutes and contained seven major arguments in support of the contention that senior comprehensive exams be instituted. The arguments were (a) comprehensive exams would ensure that only high quality students would graduate, (b) graduate and professional schools prefer graduates who have demonstrated knowledge in a particular field, (c) the exams provide an incentive for students to study gradually as opposed to cramming, (d) schools with the exams attract larger and more well-known corporations to recruit students for jobs, (e) graduates of schools with the exams earn higher starting salaries, (f) faculty members who took the exams as undergraduates thought it was a valuable experience, and (g) state legislators, concerned about lax educational standards, would increase state financial support if exams were instated.

Dependent Variables

After listening to the tape, subjects responded to the following question: "To what extent do you agree with the faculty committee's proposal requiring seniors to take a comprehensive exam before graduating?" Responses were made on an 11-point Likert-type scale, where 1 indicated "do not agree at all," and 11 indicated "agree completely."

After responding to the attitude question and some ancillary measures, subjects in the actual-thoughts conditions were instructed to go back and rate their thoughts in a manner adapted from Cullen (1968) and Petty, Wells, and Brock (1976). Ideas were rated as either + (in favor of the advocated position), - (opposed to the advocated position), or 0 (neutral). Each idea that a subject wrote down was submitted to two judges for scoring as either a counterargument (opposed to the advocated position), a favorable thought (in favor), or a neutral thought (unrelated to the topic). Examples of ideas scored as counterarguments included: "I can't see me investing \$12,000 in education and not graduating," and "It's unfair to those who change majors." Examples of favorable thoughts included: "It will help me get a job," and "I would like the

test." Examples of neutral thoughts included: "I have so much homework," and "How long will this experiment take?" The judges agreed on 97% of the statements.³ In cases of disagreement among judges, the subject's rating was used.⁴ Finally, subjects were debriefed, thanked, and dismissed.

Results and Discussion

Attitude Measures

A 2 (5.25-minute warning or no warning) \times 2 (write thoughts or do not write thoughts) analysis of variance on the attitude measure yielded a significant main effect for the warning factor, $F(1, 76) = 15.94, p < .001$. Neither the thought-listing factor, $F(1, 76) = 1.30$, nor the interaction ($F < 1$), approached significance ($ps > .20$). Tests of simple main effects indicated that for the actual-thoughts groups, unwarned subjects ($M = 8.80$) were more persuaded by the message than warned subjects ($M = 6.55$), $F(1, 76) = 9.15, p < .01$, and for the attitude-only groups, unwarned subjects ($M = 9.25$) were also more persuaded than warned subjects ($M = 7.30$), $F(1, 76) = 6.88, p < .02$. Thus, it is clear that the thought-listing procedure did not modify the attitude results. The attitude-only control group, which received a warning immediately prior to the communication ($M = 9.15$), was significantly more persuaded by the message than the attitude-only group, which received a 5.25-minute warning ($p < .01$ by the Dunnett test), but did not differ from the unwarned attitude-only group. Thus, the current experiment replicated the findings of Freedman and Sears (1965) and Hass and Grady (1975) in that a delay between forewarning and message was required for resistance to occur.⁵

Cognitive-Response Measures

Cognitive-response measures for the actual-thoughts groups are presented in Table 2. The conditions were compared using non-parametric procedures, since some comparisons involved cells with zero variance. The actual-thoughts control group did not differ from the experimental unwarned group on any of the cognitive-response measures. However, more subjects in the warned condition

(65%) wrote counterarguments than in either the unwarned (0%), $\chi^2(1) = 16.41, p < .001$, or actual-thoughts control condition (5%), $\chi^2(1) = 13.30, p < .001$. In addition, more subjects in the warned condition (45%) wrote favorable thoughts than in either the unwarned (0%) or actual-thoughts control condition (0%), $\chi^2(1) = 9.48, p < .01$ for each.⁶ Thus, we have evidence that the 5.25-minute warning group engaged in topic-relevant thinking (primarily counter-argumentation) in the premessage interval. The fact that an immediate warning did not lead to the recording of topic-relevant thoughts indicates that subjects complied with the instructions to record only those thoughts that actually occurred to them during the 2.5-minute wait.

³ For those statements on which both judges agreed, 96% of the ratings were in agreement with the subjects' ratings. Although an analysis of subject-rated thoughts produced the same results as the judge-rated thoughts, the judges' ratings were preferred, since occasionally subjects misinterpret the rating instructions.

⁴ A final measure of the number of arguments that could be recalled from the message was taken, but since no significant differences were obtained on this measure, it will not be discussed further.

⁵ An attitude measure was also available for the actual-thoughts control group ($M = 6.2$). As noted earlier, however, this group was included only as a check on the actual-thoughts instructions. The attitude data were not considered valid, because even though subjects complied with the instructions to list only those thoughts that had occurred before the warning, it was still possible for these subjects to engage in anticipatory counterargumentation during the list-thoughts period. If no anticipatory counterarguments were generated, the attitude of this group should be comparable to the unwarned actual-thoughts group; but if counterarguments were generated (even if these thoughts were not listed), the attitude of this group should be similar to the warned actual-thoughts group. Dunnett tests indicated that the actual-thoughts control group differed significantly from the unwarned ($p < .05$) but not the warned group, suggesting that anticipatory counterargumentation took place.

⁶ Parametric tests (Newman-Keuls) of these comparisons produced an identical pattern of results. In addition, the parametric analyses revealed that subjects in the 5.25-minute warning group generated significantly fewer neutral thoughts than subjects in the other two groups.

Table 2
*The Effects of Warning on Cognitive Responses in Experiment 1
 (Actual-Thoughts Groups Only)*

Measure	Experimental Groups		Control Group	3 Group ANOVA <i>F</i> (2, 57)
	5.25 minute warning	No warning	Immediate warning	
Counterarguments	1.70	.00	.10	17.89*
Favorable thoughts	.85	.00	.00	8.44*
Neutral thoughts	2.50	4.70	4.15	6.56*

Note. Within the 5.25-minute warning group, the correlation between attitude and number of counterarguments generated was $-.63$; between attitude and number of favorable thoughts, $.40$; and between counterarguments and favorable thoughts, $-.11$. ANOVA = analysis of variance.

* $p < .01$.

Experiment 2

Although the first experiment provided strong support for the notion that subjects engage in topic-relevant thinking when warned that they are about to be confronted with a discrepant communication on an involving topic, Experiment 2 sought a stronger test of the counterargument hypothesis. According to the counterargument hypothesis, it is not the forewarning per se that produces resistance to persuasion, but the fact that persons are motivated by the warning to more fully consider their own positions, generating arguments supporting their own stands and opposing alternative stands. This line of reasoning implies that resistance to persuasion can be obtained in *unwarned* persons simply by asking them to list their thoughts on the topic.

In order to test this hypothesis, subjects who were either warned or not warned were asked to list either their actual thoughts or their specific thoughts on the topic. The counterargument model would predict that both warned groups would be resistant to persuasion because the warning would trigger anticipatory counterargumentation. In addition, the *unwarned* group that was given an opportunity to record thoughts and ideas on the topic should show resistance. This group should be resistant because the counterargument hypothesis holds that it is not the warning but the anticipatory thinking about the topic that confers resistance to the persuasive appeal. Only the unwarned group that

did no anticipatory thinking about the topic should show susceptibility to the communication.

Method

Subjects

Sixty introductory psychology students were randomly assigned to the cells of a 2 (warning or no warning) \times 2 (instructed to write topic thoughts or actual thoughts) factorial design. Fifteen students served in each experimental condition. The experiment was conducted during a portion of the regular class period in two introductory psychology classes. Fifteen additional introductory psychology students served in a control condition and merely responded to the attitude dependent variable.

Warning Manipulation

When students arrived for their class, the instructor announced that since they were discussing psychotherapy techniques, he had invited a psychologist from the counseling center to speak. The instructor then introduced "Dr. John Lingle, a recent PhD who has been counseling students during the past quarter." Dr. Lingle stated that besides giving his talk, he would like the students to assist him in collecting some data by filling out a questionnaire. Those who wished to participate were instructed to take a copy of the questionnaire as they were passed around the room (all students completed the booklets). The front page of the booklet reiterated some background information about the speaker and in addition contained the warning manipulation. Subjects in the warned conditions read that Dr. Lingle would be discussing "why he has recommended to University President Enarson that all freshmen and sophomores be required to live in campus dorms." As in Experi-

ment 1, this issue was chosen because pilot testing had revealed that it was one on which students were highly committed to their positions in opposition to the speaker and in addition was an issue of high ego involvement and personal relevance. Subjects in the unwarned conditions read that Dr. Lingle would be discussing "some of the conclusions he has come to while working at the counseling center." After it was clear that all students had read the first page of the booklet, the speaker asked them not to turn ahead in the booklet, and to "please sit quietly for a few minutes while I look over my notes."

Cognitive-Response Manipulation

After 3 minutes of sitting quietly, the subjects were asked to turn to the next page in their booklets. Subjects in the actual-thoughts conditions were instructed to record all of the thoughts that had occurred to them during the preceding few minutes. The thought-listing instructions and procedure were identical to those employed in Experiment 1, except that 3 minutes were allowed for the task instead of 2.5. Subjects in the topic-thoughts conditions had the same instructions, with the following changes inserted in the appropriate places:

We are now interested in your thoughts on the topic of requiring all freshmen and sophomores to live in dorms on campus. You might have ideas all favorable to requiring all freshmen and sophomores to live in dorms, all opposed, or a mixture of the two. Any case is fine.

The Message

After subjects had recorded their thoughts, the speaker began his talk in favor of the dorm requirement. The talk lasted 5 minutes and contained six major arguments: (a) apartment living is more expensive than dorm living, (b) locating a suitable apartment is time consuming, (c) landlord-tenant disputes are common, (d) conveniences on campus (library, school activities, etc.) are lost in off-campus living, (e) guarantees of good food and a healthy environment are lost in off-campus living, and (f) dorm living provides contacts with a cross-section of people.

Dependent Variables

After listening to the speech, subjects responded to the following question: "To what extent do you agree with Dr. Lingle's proposal requiring all freshmen and sophomores to live in campus dorms?" Responses were made on an 11-point Likert-type scale, where 1 indicated "totally disagree," and 11 indicated "totally agree." The control group that received no manipulations and did not hear the speech responded to the following statement on

an identical 11-point scale: "A psychologist at the O.S.U. counseling center has submitted a proposal to University President Enarson which recommends that all freshmen and sophomores be required to live in campus dorms. To what extent do you agree with this proposal?"

The cognitive response measures were coded by subjects in a manner identical to that described in Experiment 1. The judges agreed on 100% of the statements and were in agreement with the subjects' ratings on 98% of the statements. Only the judges' ratings are presented, although as in Experiment 1, analyses on subject-rated thoughts produce identical results.

After all of the participants had completed their dependent variable booklets, a debriefing session commenced. Not only were participants fully informed of the method, hypotheses, and reasons for deception, but a lively discussion on the nature of research in psychology was conducted.

Results

A $2 \times 2 \times 2$ analysis of variance, including classroom as a factor, indicated that class session produced no significant effects on any dependent variables, and thus this factor was ignored in all subsequent analyses.

Cognitive-Response Measures

Means for each cell on the cognitive response measures are presented in Table 3. A 2×2 multivariate analysis of variance was conducted, including all cognitive-response measures (counterarguments, favorable thoughts, and neutral thoughts). The analysis yielded significant main effects for the thought-listing instructions factor, $F(3, 54) = 24.11, p < .001$, and the warning factor, $F(3, 54) = 4.19, p < .01$. The interaction was not significant ($p > .25$).

Univariate analyses of variance on each of the cognitive-response measures indicated that warned subjects generated significantly more counterarguments ($M = 2.83$) than unwarned subjects ($M = 1.33$), $F(1, 56) = 7.40, p < .009$, and unwarned subjects generated significantly more neutral thoughts ($M = 2.76$) than did warned subjects ($M = 1.57$), $F(1, 56) = 6.33, p < .02$. Thus, as in Experiment 1, there is evidence that warned subjects engaged in anticipatory counterargumentation. There were no significant differences between warned and unwarned

Table 3
Effects of Warning and Thought-Listing Instructions on Attitude and Cognitive-Response Measures in Experiment 2

Measure	Unwarned		Warned		Control
	Actual thoughts	Topic thoughts	Actual thoughts	Topic thoughts	
Attitude	6.27	4.60	3.47	4.20	3.23
Counterarguments	.00	2.67	2.20	3.46	
Favorable thoughts	.00	1.73	.27	2.20	
Neutral thoughts	4.93	.60	2.87	.27	

Note. Higher means on the attitude measure indicate more agreement with the speaker's position. Each cell contained 15 subjects. The within-cell correlation between attitude and number of counterarguments generated was $-.46$; between attitude and number of favorable thoughts, $.43$; and between counterarguments and favorable thoughts, $-.37$.

groups on the number of favorable thoughts generated.

Subjects who were instructed to write thoughts on the topic wrote more counterarguments ($M = 3.07$) than subjects who were asked to write their actual thoughts ($M = 1.10$), $F(1, 56) = 12.72$, $p < .001$; wrote more favorable thoughts ($M = 1.97$) than the actual-thoughts group ($M = .14$), $F(1, 56) = 17.62$, $p < .001$; and wrote fewer neutral thoughts ($M = .44$) than those in the actual-thoughts conditions ($M = 3.90$), $F(1, 56) = 52.80$, $p < .001$. Thus, the topic-thoughts instructions were effective in getting subjects to think about the topic.

Of primary interest on the cognitive-response measures is that warned subjects who were asked to write their actual thoughts showed evidence of anticipatory counterargumentation. Using the Dunn multiple-comparison procedure (Kirk, 1968, p. 93), the number of counterarguments generated by subjects in the warned actual-thoughts cell did not differ from the number generated by subjects in the topic-thoughts cells. However, while 60% of the subjects in the warned actual-thoughts conditions generated counterarguments, no subjects in the unwarned actual-thoughts cell did, $\chi^2(1) = 10.15$, $p < .01$. This replicates the finding of Experiment 1 that warned subjects were engaging in anticipatory counterargumentation.

If the number of counterarguments and favorable thoughts generated by each subject are summed, a measure of the total number

of topic-relevant thoughts is obtained. Not surprisingly, subjects instructed to write on the topic generated more topic-relevant thoughts ($M = 5.03$) than subjects instructed to write their actual thoughts ($M = 2.20$), $F(1, 56) = 50.53$, $p < .001$. Further evidence that warned subjects were thinking about the topic in the premessage interval comes from the fact that warned subjects who were instructed to write about the topic wrote more topic-relevant thoughts ($M = 5.66$) than unwarned subjects who were instructed to write about the topic ($M = 4.40$), $F(1, 56) = 2.82$, $p < .05$, one-tailed. Thus, even when the analysis is confined to subjects who were instructed to write about the topic, warned subjects produced more topic-relevant thoughts than unwarned subjects.

The groups showed no significant differences on the total number of thoughts generated; there were no significant interactions on any of the cognitive-response measures.

Attitude Measure

Table 3 presents the means for all cells. The counterargument hypothesis predicted that only the unwarned actual-thoughts cell would show susceptibility to the persuasive message and that all other cells would show resistance. The test of this hypothesis was an a priori F contrast which compared the unwarned actual-thoughts cell against the

others (excluding control).⁷ The contrast proved significant, $F(1, 56) = 5.30, p < .02$. A more conservative way to test this hypothesis would be to compare each of the cell means with the control group. A Dunnett test (Kirk, 1968, p. 94) indicated that the only group that differed from the control was the unwarned actual-thoughts group ($p < .05$), paralleling the results of the a priori contrast. These results replicate Experiment 1 and previous findings demonstrating the resistance-conveying effect of a warning. In addition, they provide unique support for the counterargument hypothesis in showing that resistance to persuasion can be produced in an unwarned group simply by having them think about the topic in advance of the communication.⁸

Discussion

The results of Experiment 2 indicated that forewarning of an impending discrepant communication on a highly involving topic led to anticipatory thinking about the topic and subsequent resistance to persuasion, replicating the chief findings of Experiment 1 with a different topic. Examination of the data for subjects who were instructed to record their actual thoughts during the premessage delay period indicated that warned subjects recorded topic-relevant thoughts (primarily counterarguments) while unwarned subjects did not.

It might be argued that the thought listings do not provide direct evidence of anticipatory counterargumentation because of demand characteristics (Orne, 1962). That is, perhaps the subjects' "actual-thought" listings are not indicative of their true cognitive responses during the preceding minutes but instead reflect what the subjects thought the experimenter wanted them to list. In the present study, this interpretation is considered unlikely, because (a) the forewarning was very unobtrusive, and the speech was presented to subjects in a field setting (class lecture), thereby minimizing experimental demand, (b) the interval between the warning and the thought listing was described as necessary for the *speaker* to get his notes together rather than for subjects to collect

their thoughts, (c) the only instructional demands on the subjects were to recall their *actual* thoughts during the past several minutes, and (d) most of the thoughts generated

⁷ We also performed a traditional 2×2 analysis of variance, which indicated a main effect for the warning factor, $F(1, 56) = 3.92, p < .05$, no effect for the thoughts factor, $F < 1$, and an unreliable interaction, $F(1, 56) = 2.14, p < .15$. Based on Winer (1971, p. 196) we note that the interaction term is a less appropriate test of the specific hypothesis in the current experiment than is the a priori contrast.

⁸ Although the cognitive-response hypothesis holds that the anticipatory counterargumentation mediated the resistance, other causal chains are possible. Following Osterhouse and Brock (1970), Insko, Turnbull, and Yandell (1974), and Petty, Wells, and Brock (1976), three analyses of covariance (ANCOVA) were conducted. The procedure employed compares specific models by statistically holding constant the postulated mediator between an initial variable and a final dependent variable. The relationship between initial and final variables should be within error variance of zero when the mediator is held constant through the use of the covariance procedure. This causal model testing procedure is adapted from Blalock's (1964) technique using partial correlations, Scheffé's (1959) technique of examining partial slopes, and Cochran and Cox's (1957) technique employing analysis of covariance. Heise (1969) provides a discussion of the assumptions involved in causal model testing analyses, and Insko et al. (1974) provide an extended rationale for the use of these procedures with attitude and cognitive-response data. Since Winer (1971, p. 772) suggests that the ANCOVA is robust with respect to homogeneity assumptions on within-class variances and regression coefficients, these analyses were conducted even though the assumptions were violated severely.

First, the crucial contrast comparing the unwarned actual-thoughts cell against the others (excluding control) was computed using counterarguments as the covariate and the attitude measure as the criterion. When this was done, the originally significant F of 5.30 was reduced to a nonsignificant .26. When favorable thoughts are used as the covariate, however, the original F is not reduced, and in fact increases to 12.60. When the contrast comparing the unwarned actual-thoughts cell against the others (excluding control) was computed using *attitude* as the covariate and *counterarguments* as the criterion, the originally significant F of 19.03 remains highly significant at 12.66. Interpretation of these analyses should be cautious because it is unclear whether the extreme departure from the ANCOVA assumptions can be tolerated. In any case, the results are consistent with the notion that counterargumentation mediates the attitude effect.

by the warned actual-thoughts group were neutral ($M = 2.87$) rather than topic-relevant ($M = 2.47$), making unlikely the notion that there were demands to record only topic-relevant thoughts.

For two groups of subjects, however (the topic-thoughts conditions), demands were made to record only topic-relevant thoughts. It is important to note that even for these groups, warned subjects generated more topic-relevant thoughts than unwarned subjects. The most plausible explanation for this finding is that warned subjects had been thinking about the topic during the premessage delay period, and thus had a head start on the unwarned group in generating relevant thoughts.

Besides the cognitive-response data, a second major finding of Experiment 2 provides strong support for the counterargument hypothesis. The fact that resistance to persuasion was produced in an unwarned group simply by instructing them to list their thoughts on the topic indicates that warnings about impending communications on involving topics produce attitudinal effects, because they trigger anticipatory cognitive responses. When these anticipatory responses are predominantly counterarguments, resistance to persuasion is conveyed.

Conclusions

In summary, two experiments were conducted to investigate the psychological process responsible for the resistance to persuasion found when persons are forewarned of impending discrepant communications on involving topics. Our results indicated that the warnings motivated persons to consider more fully their own positions, generating cognitive defenses for the impending attack. When anticipating a discrepant communication on a highly involving topic, a person forewarned is forearmed!

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