

See discussions, stats, and author profiles for this publication at:
<https://www.researchgate.net/publication/232546200>

Distraction Can Enhance or Reduce Yielding to Propaganda: Thought Disruption Versus Effort Justification

Article *in* Journal of Personality and Social Psychology · October 1976

Impact Factor: 5.08 · DOI: 10.1037/0022-3514.34.5.874

CITATIONS

355

READS

85

3 authors, including:



[Richard E Petty](#)

The Ohio State University

336 PUBLICATIONS 38,130 CITATIONS

SEE PROFILE



[Gary L. Wells](#)

Iowa State University

179 PUBLICATIONS 8,625 CITATIONS

SEE PROFILE

Distraction Can Enhance or Reduce Yielding to Propaganda: Thought Disruption Versus Effort Justification

Richard E. Petty, Gary L. Wells, and Timothy C. Brock
The Ohio State University

Two experiments were conducted to test competing accounts of the distraction-persuasion relationship, thought disruption and effort justification, and also to show that the relationship is not limited to counterattitudinal communication. Experiment 1 varied distraction and employed two discrepant messages differing in how easy they were to counterargue. In accord with the thought disruption account, increasing distraction enhanced persuasion for a message that was readily counterarguable, but reduced persuasion for a message that was difficult to counterargue. The effort notion implied no interaction with message counterarguability. Experiment 2 again varied distraction but the two messages took a *nondiscrepant* position. One message elicited primarily favorable thoughts and the effect of distraction was to reduce the number of favorable thoughts generated; the other, less convincing message elicited primarily counterarguments, and the effect of distraction was to reduce counterarguments. A Message \times Distraction interaction indicated that distraction tended to enhance persuasion for the counterarguable message but reduce persuasion for the message that elicited primarily favorable thoughts. The experiments together provided support for a principle having greater generality than the Festinger-Maccoby formulation: Distraction works by inhibiting the dominant cognitive response to persuasive communication and, therefore, it can result in either enhanced or reduced acceptance.

Festinger and Maccoby's (1964) well-known demonstration that distraction increases acceptance of propaganda assumed that a person tends to engage in active counterarguing when confronted with a persuasive message with which he disagrees, and that distraction could inhibit such counter-

arguing, thereby weakening resistance to the message.

The present study had two aims. The first aim was to examine a more general formulation than that proposed by Festinger and Maccoby (1964). We reasoned that if the dominant cognitive response to a communication was counterarguing, then distraction would lead to enhanced persuasion by interfering with the counterarguing process; but, if the dominant cognitive response to a communication was agreeing or favorable cognitive responses rather than counterarguments, distraction would inhibit these favorable thoughts and lead to lowered acceptance.¹

The second aim was to evaluate two competing explanations of distraction-acceptance effects, namely thought disruption versus effort justification. Numerous experiments em-

This article is based on a master's thesis submitted to the Graduate School of The Ohio State University by the first author. The experiments were carried out with the assistance of the second author under the supervision of the third author. The help of thesis committee members Eric Knowles and Thomas M. Ostrom is acknowledged with thanks. Thanks are also due Russ Dern, Marilyn Sosenko, and Lynn Oliver. Portions of Experiment 1 were presented at the annual meeting of the Midwestern Psychological Association, Chicago, May 1975; and Experiment 2 at M.P.A., Chicago, May 1976.

Donald F. Roberts, Robert S. Baron, Robert B. Cialdini and John T. Cacioppo made valuable comments on an earlier draft of this manuscript.

Requests for reprints should be sent to Richard E. Petty, Social Psychology Doctoral Program, The Ohio State University, 404C West 17th Avenue, Columbus, Ohio 43210.

¹Festinger and Maccoby (1964) included conditions in their experiment in which agreeing comments might be expected, but no significant effects due to distraction were obtained for these groups, and none were hypothesized.

ploying a wide variety of distractions and a diverse list of message topics have replicated the original Festinger and Maccoby result (e.g., Insko, Turnbull, & Yandell, 1975; Keating & Brock, 1974; Kiesler & Mathog, 1968; Osterhouse & Brock, 1970; Rosenblatt, 1966; Rule & Rehill, 1970; Silverman & Regula, 1968; Zimbardo & Ebbesen, 1970; Zimbardo, Snyder, Thomas, Gold, & Gurwitz, 1970). However, the nature of the mediating process is still disputed by some. Osterhouse and Brock (1970), Keating and Brock (1974), and Insko et al. (1975) have provided the strongest support for the thought disruption hypothesis; using a procedure developed by Brock (1967) and Greenwald (1968) for the direct measurement of cognitive responses, these studies showed that as the level of distraction increased, acceptance increased, while the number of counterarguments decreased.

Baron, Baron, and Miller (1973) recently reviewed many of the distraction-persuasion studies mentioned above as well as some unpublished data, and concluded that there was only one explanatory mechanism which could rival the counterargument disruption hypothesis. This alternative explanation stems from the theory of cognitive dissonance (Festinger, 1957). Baron et al. (1973) argued that in a typical distraction experiment, subjects perceive that they have chosen to participate in an experiment which requires that they exert effort in order to attend to a discrepant message. Subjects can justify this effort expenditure by adopting the attitude expressed in the communication (Cohen, 1959; Wicklund, Cooper, & Linder, 1967). Baron et al. (1973) contended that all of the distraction manipulations to date have been confounded with effort, and further that this confounding may be unavoidable. They then suggested that "the principal means of circumventing this sort of methodological problem is to devise an experiment for which the contending explanations make competing predictions" (p. 320).

To meet these two aims, two experiments were conducted. Experiment 1 employed discrepant messages and was primarily designed to deal with the effort challenge to the thought disruption hypothesis by devising a situation in which the two theories would

make competing predictions.² Experiment 2 was primarily designed to test the more general distraction formulation: that distraction works by disrupting the dominant cognitive response to propaganda, and thus could either enhance or reduce persuasion.

EXPERIMENT 1

Two discrepant messages were specifically constructed for Experiment 1. Both messages argued that the tuition at Ohio State University should be increased by 20%, from the then current \$266 per quarter to \$320 per quarter, but the messages differed in their presentation of five key arguments. One message was designed to contain points that were logically sound, easily defensible, and more compelling than previous tuition increase propaganda (e.g., Osterhouse & Brock, 1970) and thus be *difficult to counterargue*. Another, *easy-to-counterargue* message, was designed to be more open to refutation and skepticism, and be less compelling than previous messages.

Given that the messages differ predominantly in how easy or difficult they are to counterargue, it becomes possible to evaluate the two major explanations of the distraction-acceptance effect. The effort justification explanation, as derived from dissonance theory, states that with increasing levels of distraction (and thus effort), there is increased acceptance of both messages since for each message, subjects have to justify their effort expenditure. Besides this main effect prediction favored by Baron (Note 1), a different effort prediction is possible, if one considers the quality of the message arguments in conjunction with the effortful distraction. Since hearing good arguments advanced against one's position should be more dissonance arousing than hearing poor arguments (Klein-hesselink & Edwards, 1975; Lowin, 1967), it can be predicted that subjects hearing the difficult-to-counterargue communication will

² The "competing predictions" approach was taken earlier in an experiment by Kiesler and Mathog (1968), but see the Baron et al. (1973, p. 320) critique arguing that both theories could handle the obtained results.

experience more difficulty justifying their effort than those hearing the easy-to-counterargue message. This line of reasoning predicts that the slope of agreement as a function of distraction (effort) will be steeper for the difficult-to-counterargue message. In any case, effort hypotheses expect increased acceptance with increased distraction for *both* messages.

The counterargument disruption hypothesis, on the other hand, would expect an enhancing effect only for the easy-to-counterargue message, because presumably only for this message are counterarguments generated that can be disrupted by distraction. In an experiment designed to test an unrelated hypothesis, Regan and Cheng (1973) obtained data relevant to the current hypothesis. Regan and Cheng constructed two messages on each of two topics and found that distraction enhanced persuasion for "simple" (short, easily understood, but unconvincing) messages, but decreased persuasion for "complex" (long, difficult to understand, but convincing if understood) messages. However, due to the confounding of at least three variables (length of message, ease of understanding, and persuasiveness) the results offer only tentative support for the argument that distraction tended to enhance persuasiveness for the simple messages, because counterarguments were disrupted; and reduce persuasion for the complex messages, because favorable thoughts were disrupted.

The following predictions were made for Experiment 1. More counterarguments would be generated to the easy-to-counterargue message than to the difficult-to-counterargue message, distraction would inhibit counterargumentation only for the easy-to-counterargue message, and a significant Message \times Distraction interaction would be found on the attitude dependent variable indicating that distraction increased acceptance for the easy-to-counterargue message, but not for the difficult-to-counterargue message. Thus, the results were expected to support thought disruption rather than effort justification.

Method

Procedure

One hundred and thirty-two introductory psychology students at The Ohio State University (O.S.U.)

chose to participate in the experiment by selecting it from over 15 other possible experiments on a "sign-up" bulletin board. Students are informed in their introductory classes that they have the right to leave any experiment in progress and still receive credit that partially fulfills a course requirement. Additionally, subjects may fulfill the course requirement by writing a term paper rather than by experimental participation. Thus, the level of choice felt by experimental subjects was at least as high (or higher) than that for subjects participating in previous distraction-persuasion experiments.

The design was a $4 \times 2 \times 2$ factorial with four levels of distraction (no, low, medium, and high), two levels of message counterarguability (easy and difficult to counterargue), and two orders of the dependent variable booklet (list thoughts before expressing attitude, and express attitude before listing thoughts). Subjects were run in groups of 6 to 12 in cubicles constructed so that no subject could have visual contact with any other subject. During any one session, in which one level of distraction was run, half of the subjects heard the easy-to-counterargue message over headphones, while half of the subjects heard the difficult-to-counterargue message. After listening to the communication under the appropriate distraction condition and completing the dependent variable booklets, subjects were debriefed, thanked, and dismissed.

Independent Variables

Message counterarguability. In brief, the difficult-to-counterargue message stated that the tuition hike was recommended after an intensive 2-year investigation, that Ohio was 50th in state expenditures on education, that improvements were needed in the library system, that a mass transit system could be initiated, and studies had proven that if O.S.U. could upgrade its quality, the average salary of its graduates would increase substantially. The easy-to-counterargue message stated that the tuition increase was recommended after a 2-month study, that Ohio was 10th in expenditures on education, that more trees should be planted on campus, that the university should start a bus system, and that improved lighting was needed in classrooms to cut down on student headaches. Each message was approximately 3 minutes long. Subjects' ratings in a pretest indicated that the messages did not differ in the extent to which they were "difficult to understand," were "hard to follow," or possessed "complex structure."

Distraction and effort. On arrival, each subject was handed a "monitor recording form." The distraction task required subjects to monitor a large screen which hung from the ceiling in front of the room. The screen was from 2 to 5 m in front of the subjects, which required them to view it at an angle of approximately 45° . The subjects were informed via prerecorded instructions that the experiment concerned the ability to do two things at once. The subjects were told that while they listened to the message, an X would flash periodically in one of

the four quadrants of the screen. Their task was to record on "monitor recording forms" in which quadrant the X appeared. If the X appeared in the upper left-hand quadrant, they were to record the letters "UL" to signify upper left; if upper right, "UR"; if lower left, "LL"; and if lower right, "LR."

Twenty-five slides were prepared for each quadrant, and the slides were randomly ordered when placed in the projector. For subjects in the low-distraction conditions, the Xs flashed at 15-sec intervals throughout the message. For medium distraction, the Xs flashed at 5-sec intervals, and in the high-distraction conditions the Xs flashed at 3-sec intervals. Each slide remained viewable until the next slide appeared. Subjects in the no-distraction conditions were given instructions identical to those in other conditions, but were told that "For now, no Xs will flash while you are listening to the message." Subjects in the other distraction conditions were not told how many flashes to expect during the message. All subjects were instructed to try to pay close attention to the message.

It is important to note that the manipulation of distraction was also intended to be a manipulation of effort expenditure. Thus, the conditions might alternatively have been called no, low, medium, and high effort.

Order of the dependent variable booklets. For half of the booklets, subjects answered the communication acceptance ratings before they recorded their thoughts and ideas on the message; for the other half, this order was reversed. This was done to check on the possibility raised by Miller and Baron (1973) that the awareness of one's attitude, as made salient by the attitude scales, would influence subsequent counterargument production.

Dependent Variables

Measures of attitude. Two measures of attitude toward the proposed tuition increase were included. The first question was general and asked, "In general, to what extent did you agree with the speaker's recommendations?" Subjects were to respond on a 7-point scale where 7 indicated "completely agree." The second question was specific and asked, "The current tuition at O.S.U. is \$266. What do you think the appropriate level should be?" Subjects were to record a dollar figure in a blank beside the question. Subjects' responses to the two attitude questions were converted to standard scores and summed.

Measures of cognitive responses. Employing a procedure adapted from Brock (1967) and Osterhouse and Brock (1970), subjects were given 2½ minutes to write their thoughts on the topic of increasing tuition after they had listened to the message.³ After recording their thoughts, subjects were instructed to rate their ideas in a manner adapted from Cullen (1968) and Cialdini, Levy, Herman, Kozlowski, and Petty (in press). Subjects rated their ideas as either + (in favor of a tuition increase), - (opposed), or 0 (neutral). Each idea that a subject

wrote was submitted to 2 judges for scoring as either a counterargument or a favorable thought.⁴ The judges agreed on 92% of the statements. In cases of disagreement between judges, the subject's rating was employed. Thus, each subject was assigned a counterargument and a favorable thoughts score by the judges. Only the judge-assigned scores were analyzed.

Measures of recall. When subjects had completed both the attitude- and thought-listing sections of the booklet, they were given 2 minutes to attempt to record as many message arguments as they could remember. Each booklet was rated by two judges ($r = .86$). An argument had to correctly summarize one of the arguments that appeared in the appropriate message to be counted. Repetitions of the same argument were not counted. When judges disagreed in their independent ratings, ratings were obtained from two additional judges and a majority decision was reached among the four.

Unequal n and Missing Data

Unequal cell size resulted from subjects failing to keep appointments. Cell *ns* ranged from 5 to 11. Unexpectedly, 10 subjects failed to respond to one or more questions. Rather than eliminate these sub-

³ Roberts and Maccoby (1973) suggested that measures of counterarguing taken *during* presentation of a message "are more easily viewed as possible mediators" of attitude change "since they precede subjects' taking an opinion position" (p. 294). Since the current study involved distraction, and it was hypothesized that the distraction would interfere with subjects' processing of the message, it would have defeated the purpose of the distraction to have given subjects an opportunity to collect and record their thoughts *during* the presentation of the message. In any case, half of the subjects were given an opportunity to express their thoughts after the message, but *before* they responded to the attitude scales.

⁴ Counted as counterarguments were statements directed against a tuition increase which mentioned specific unfavorable consequences of raising the tuition, statements which suggested alternative methods of raising money instead of increasing tuition, statements which challenged the validity of arguments raised in the message, and statements of affect opposing the tuition increase. Counted as favorable thoughts were statements in favor of the increase which mentioned specific favorable consequences of raising the tuition, statements ruling out alternative ways of raising the money, statements which supported the validity of arguments raised in the message, and statements of affect supporting the tuition increase. Similar examples of the same statement were counted once. The correlation between judges' ratings of counterarguments and subjects' ratings was .79 ($p < .01$), and between judges' ratings of favorable thoughts and subjects' ratings, .82, ($p < .01$).

jects from all analyses, it was decided to eliminate a subject from an analysis only for those measures for which no response was recorded.

Results

Independent Variables

Order of the dependent variable booklet. It was not expected that the order of the booklets would make any difference in the pattern of results. A $4 \times 2 \times 2$ unweighted-means analysis of variance on each dependent variable generally confirmed this expectation. Main effects and interaction effects involving order were generally uninteresting and irrelevant for the purposes of this study (Petty, 1975). Therefore, on dependent variables for which order had no effects, the data were collapsed across order in subsequent analyses.

Message counterarguability. An average of 2.06 counterarguments was generated to the difficult-to-counterargue message, while an average of 2.89 counterarguments was generated to the easy-to-counterargue message, $F(1, 124) = 5.81, p < .02$. Furthermore, of the total number of written thoughts in the no distraction condition, 61% were coded as counterarguments in the easy message condition and 37% in the difficult message condition.

An average of 2.21 favorable thoughts were generated to the difficult-to-counterargue message, and 2.06 favorable thoughts were generated to the easy-to-counterargue message. There were no significant differences on this measure or on the total number of thoughts generated. No interactions on the cognitive response measures were significant. In sum, Experiment 1 conditions produced differential counterarguing, and in the easy message condition, the dominant cognitive response was counterarguing.

The manipulation of distraction and effort. The analysis of variance on the distraction manipulation check yielded a significant $F(3, 116) = 19.84, p < .001$ for the distraction factor. On a 7-point scale where 7 indicated that a subject was "completely distracted" from paying attention to the message, the mean responses for the no-, low-, medium-, and highly distracted subjects were 2.21, 3.30, 4.16, and 4.81, respectively.

Because of unequal cell frequencies, and unequal spacing of the levels of distraction measured in slides per minute, all linear trend tests in this report were conducted according to Gaito (1965). A significant linear trend was found for the ratings of distraction, $F(1, 116) = 52.80, p < .001$.

Responses to the question, "To what extent did you find the task effortful?" showed that the distraction manipulation was successful in varying perceived effort. On a 7-point scale where 1 indicated "completely effortful," the means for the no-, low-, medium-, and highly distracted subjects were 4.62, 4.80, 3.68, and 2.64, respectively. Again, an analysis of variance for the distraction factor yielded a significant F ratio, $F(3, 116) = 16.28, p < .001$, and a significant linear trend, $F(1, 116) = 42.67, p < .001$. In addition, a Message \times Distraction interaction, $F(3, 116) = 2.85, p < .05$, was obtained. Although the linear trend interaction was not significant, the pattern of means indicated that rated effort increased more sharply with distraction for the difficult-than for the easy-to-counterargue message. In any case, these results clearly indicate that the faster the Xs flashed on the screen, the more distracted subjects reported feeling and the more effortful they rated the task.

Dependent Variables

Communication acceptance. An unweighted-means ANOVA on the summed standard scores yielded two effects: a main effect for message, $F(1, 119) = 5.23, p < .02$, indicating that the difficult-to-counterargue message ($\bar{X} = .33$) produced more agreement than the easy-to-counterargue message ($\bar{X} = -.31$); and, the predicted Message \times Distraction interaction, $F(3, 119) = 2.97, p < .03$. The top panel of Figure 1 indicates that the easy-to-counterargue message shows the much replicated effect of increasing communication acceptance with increasing levels of distraction. A test of linear trend on the means ($-.84, -.46, -.17, \text{ and } .23$) proved significant, $F(1, 119) = 3.96, p < .05$. The difficult-to-counterargue message shows an opposite pattern—decreasing acceptance with distraction. A test of linear trend on the means ($.66, .95, -.19, \text{ and } -.11$) indicated a significant negative

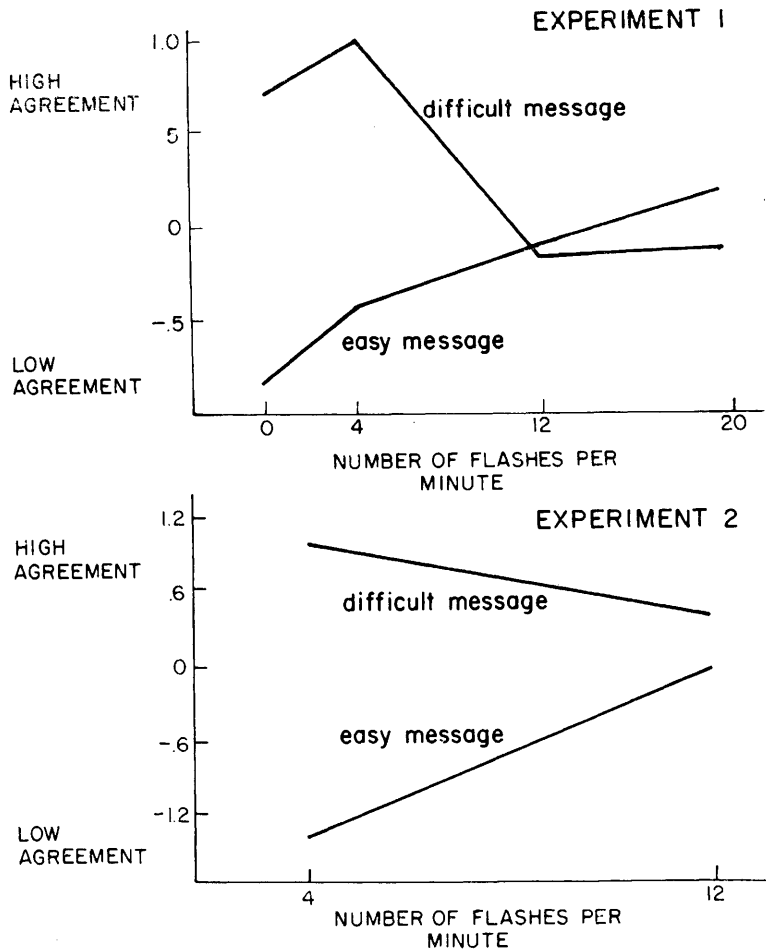


FIGURE 1. Top panel: mean attitude scores in relation to message and level of distraction for Experiment 1. Bottom panel: mean attitude scores in relation to message and level of distraction for Experiment 2.

slope, $F(1, 119) = 4.49$, $p < .05$. In addition the linear trend interaction was highly significant, $F(1, 119) = 8.39$, $p < .01$.

Distraction and thought production. In the easy-to-counterargue condition, the mean numbers of counterarguments for the no-, low-, medium-, and highly distracted groups were 3.75, 3.39, 2.65, and 1.72, respectively. The linear trend on these means was marginally significant $F(1, 124) = 3.49$, $p < .10$. In the difficult-to-counterargue condition, the corresponding means were 2.43, 2.22, 1.68, and 1.90. The linear trend on these means was not significant ($F < 1$). The main effect for distraction was reliable, $F(3, 124) = 2.95$, $p < .05$. Using the Dunn multiple comparison

procedure (Kirk, 1968, p. 79), the amount of counterarguments generated at no and high distraction was compared for both easy- and difficult-to-counterargue messages. The tests indicated that for the easy-to-counterargue message, the difference between no and high distraction was reliable ($p < .05$), but there was no significant difference for the difficult-to-counterargue message in number of counterarguments.

In the difficult-to-counterargue condition, the mean numbers of favorable thoughts for the no-, low-, medium-, and highly distracted groups were 2.56, 2.83, 2.47, and 1.00, respectively. The linear trend for these means only approached reliability $F(1, 124) = 2.46$,

$p < .15$. In the easy-to-counterargue condition, the corresponding means were 1.62, 2.22, 2.21, and 2.18. The linear trend on these means was not reliable ($p > .25$). Comparing the number of favorable thoughts generated at no and high distraction for both messages using the Dunn procedure indicated a near significant drop in favorable thoughts for the difficult message ($p < .10$), but not for the easy message. In sum, the number of counterarguments elicited by the easy-to-counterargue message and the number of favorable thoughts elicited by the difficult-to-counterargue message tended to be inhibited by the distraction manipulation as expected by the thought disruption hypothesis.

Recall of the persuasive message. The manipulation of distraction produced a significant effect on the number of message arguments recalled, $F(3, 124) = 9.07$, $p < .001$. The pattern of means for the no-, low-, medium-, and highly distracted groups was 3.8, 4.0, 3.7, and 2.5, respectively (a perfect score would be 5 arguments recalled). Testing all pairwise comparisons on these four means using the Dunn multiple comparison procedure indicated that the recall scores for the no, low, and medium groups did not differ from each other, but the high-distraction group had significantly less recall than any of the other groups (all $ps < .05$). There were no interactions on this measure.

Ancillary measures. There were no main effects nor interactions on the measures of speaker credibility, persuasive intent of the speaker, or enjoyment of the experiment.

Discussion

Distraction and Recall

The highest level of distraction unexpectedly led to a significant drop in the number of arguments that subjects could recall. Yet, for the easy-to-counterargue message, the amount of acceptance produced under the highest level of distraction was slightly greater than that produced under medium distraction, and clearly greater than that produced under no distraction. (See Insko et al., 1975, for a similar result.) Previous researchers (Festinger & Maccoby, 1964; Osterhouse & Brock, 1970; Vohs & Garret, 1968) suggested that

“distraction serves to facilitate acceptance of a counterattitudinal message only when the distraction is not so severe as to inhibit reception of the arguments contained in the message” (Osterhouse & Brock, 1970, p. 355). Certainly at some high level of distraction, reception of the message could be so severely impaired that the decrement in message learning would outweigh all other factors. However, Insko et al. (1975) suggest that there is a relatively flat slope relating recall and attitude change and, therefore, it takes a relatively large change in recall before there is any associated attitude change.

Distraction and Thought Production

The findings for the easy-to-counterargue message replicated the patterns found by Osterhouse and Brock (1970), Keating and Brock (1974), and Insko et al. (1975). There was more agreement with the message as the level of distraction increased, and additionally, there was a parallel drop in the number of counterarguments generated when the no- and high-distraction cells were compared.

Given a message which elicits predominantly counterarguments, the effect of distraction is to interfere with counterargument production. The logical parallel, as we suggested, is as follows: given a message which elicits predominantly favorable thoughts (here, the difficult-to-counterargue message), the effect of distraction might be to interfere with favorable thought production, and thus decrease message acceptance. In point of fact, under conditions of no distraction, the difficult message did elicit more favorable thoughts (38% of total thoughts) than counterarguments (36%). Of course, this difference was unreliable, but having favorable thoughts disrupted by distraction could have accounted for the observed decline in acceptance (see Figure 1).

EXPERIMENT 2

Since Experiment 2 was designed to more fully explore the possibility that for a difficult-to-counterargue message, distraction would interfere with favorable thought production, the difficult-to-counterargue message in Experiment 2 advocated a proattitudinal position and used arguments that were logically

sound, and easily defensible. The easy-to-counterargue message also advocated a proattitudinal position, but as in Experiment 1, used arguments that were open to refutation and skepticism. This is in line with Roberts and Maccoby's (1973, p. 303) suggestion that distracting a receiver from generating agreeing comments about a proattitudinal appeal should result in less acceptance of the appeal.

Although Experiment 2 was primarily designed to explore the more general distraction formulation, it might also be viewed as another test of "effort justification." Besides the need for a proattitudinal message to maximize favorable thought production, Baron et al. (1973) have argued that "Under certain circumstances, the effort hypothesis predicts distraction effects even on proattitudinal messages. If the effort involved is particularly high . . . and there are few other justifications . . . enough dissonance could remain to . . . make one more extreme in one's favorable views" (p. 317).

Briefly, two other changes were made in Experiment 2: (a) Only one order of the dependent variable booklet was used since order had minimal effects in Experiment 1, and (b) only two levels of distraction were used (low and medium) since these levels did not affect recall in Experiment 1.

The following predictions were made. More counterarguments would be generated to the easy-to-counterargue message than to the difficult-to-counterargue message, but more favorable thoughts would be generated to the difficult-to-counterargue message. There would be a significant Message \times Distraction interaction on the dependent variable measuring acceptance: Distraction was expected to increase acceptance for the easy-to-counterargue message, but reduce acceptance for the difficult-to-counterargue message. Distraction was expected to inhibit counterargument production for the easy-to-counterargue message, and inhibit favorable thoughts for the difficult-to-counterargue message.

Method

Procedure

Fifty-four introductory psychology students at The Ohio State University were run in a 2×2 factorial design with 2 levels of distraction (low and me-

dium) and 2 levels of message counterarguability (easy and difficult to counterargue). Thirteen subjects were run in each cell, and subjects were run in groups of from 4 to 9 members. The attitude questions preceded the thought listing section in the booklets. After completing the booklets, subjects were debriefed, thanked, and dismissed.

Message counterarguability. As in Experiment 1, two messages were constructed for this study. Both messages argued that the tuition at O.S.U. should be reduced by 50% from the then current \$270 per quarter to \$135 per quarter. The difficult-to-counterargue message was designed to minimize counterargumentation, and maximize favorable thoughts. The difficult message claimed that Ohio was 48th in per capita spending on higher education, and if Ohio could move to 30th place, fees could be cut in half. Other revenue sources discussed in the message were: a \$22 million surplus in the state budget, the state sales tax, and profits from the new state lottery. The message also argued that tuition needed to be reduced because the high price of an education in Ohio had led the state to be 49th in the percentage of high school graduates going on to college.

The easy-to-counterargue message was designed to minimize favorable thoughts and to maximize counterarguments, and thus took a different approach to the idea of reducing tuition. The message called for replacing high-prestige faculty with lower prestige, lower paid faculty; for cutting back on book and magazine purchases in the library; for instituting a 5¢ per ride charge on campus bus rides; for increasing class sizes; and for exerting more control over courses taken by students to insure maximally efficient use of instructors. Each message was approximately 3 minutes in length.

Distraction and effort. The distraction task was identical to that employed in Experiment 1. For the low-distraction group the Xs flashed at the rate of 1 every 15 sec, and for the medium distraction group, the rate was 1 every 5 sec. Again, this manipulation was also designed to vary effort.

Dependent Variables

Attitude and thought measures. The specific tuition attitude measure employed in Experiment 1 was used again in conjunction with a question which asked, "In general, to what extent did you agree with the speaker's recommendations about lowering the tuition?" As in Experiment 1, these two attitude measures were converted to standard scores and summed for each subject. The thought collection and thought scoring procedure paralleled that employed in Experiment 1. Manipulation checks and ratings of speaker credibility, persuasive intent, and enjoyment of the experiment were also taken. All questions except the specific tuition measure were responded to on 12-point Likert-type scales.

Measure of recall. The last question in the booklets asked subjects to try to recall as many arguments as they could from the message. The arguments recalled were scored in a manner identical to that in Experiment 1.

TABLE 1
MEAN NUMBER OF COUNTERARGUMENTS AND
FAVORABLE THOUGHTS IN RELATION TO
MESSAGE COUNTERARGUABILITY AND
LEVEL OF DISTRACTION

Measure	Easy to counterargue		Difficult to counterargue	
	Low distraction	Medium distraction	Low distraction	Medium distraction
	Counterarguments	3.92 _a	2.61 _b	.38 _c
Favorable thoughts	1.15 _a	1.77 _a	3.69 _b	2.31 _c

Note. Cells in any row having a common subscript are not significantly different at the .05 level by the Duncan multiple range test.

In the low-distraction condition, subjects received 4 flashes per minute.

In the medium-distraction condition, subjects received 12 flashes per minute.

Results

Independent Variables

Message counterarguability. Significantly more counterarguments (see Table 1) were generated to the easy message ($\bar{X} = 3.27$) than to the difficult message ($\bar{X} = .42$); $F(1, 48) = 52.49$, $p < .0001$.⁵ Sixty percent of the thoughts generated to the easy message were coded as counterarguments, while the corresponding figure for the difficult message was 8%.

Significantly more favorable thoughts were generated to the difficult-to-counterargue message ($\bar{X} = 3.00$) than to the easy-to-counterargue message ($\bar{X} = 1.46$); $F(1, 48) = 14.84$, $p < .001$ (cell means in Table 1). In addition, favorable thoughts predominated in response to the difficult-to-counterargue message: 62% of the total thoughts were coded as favorable. In the easy-to-counterargue message, which used weak arguments to support an agreeable position, the percentage of favorable thoughts was 27%. There were no significant differences between groups in total thoughts generated.

The manipulation of distraction and effort. Subjects in the medium distraction conditions reported feeling more distracted ($\bar{X} = 6.39$) than subjects in the low-distraction conditions ($\bar{X} = 3.93$); $F(1, 48) = 9.07$, $p < .005$. Also, subjects in the medium-distraction conditions perceived the task as more effortful ($\bar{X} =$

6.70) than subjects in the low-distraction conditions ($\bar{X} = 5.00$); $F(1, 48) = 3.91$, $p < .05$.

Dependent Variables

Communication acceptance. Subjects who heard the difficult-to-counterargue message expressed more agreement with the message ($\bar{X} = .68$) than subjects hearing the easy-to-counterargue message ($\bar{X} = -.72$); $F(1, 48) = 14.10$, $p < .001$. Also, the predicted Message \times Distraction interaction was significant; $F(1, 48) = 6.89$, $p < .02$ (see bottom panel of Figure 1). Pairwise comparisons employing the Duncan multiple range procedure indicated that for subjects hearing the easy-to-counterargue message, those under medium distraction ($\bar{X} = .01$) showed significantly more agreement with the speaker than subjects under low distraction ($\bar{X} = -1.45$), $p < .05$. Although not statistically significant, for subjects hearing the difficult-to-counterargue message, the pattern was reversed (for low-distraction subjects, $\bar{X} = .95$, for medium-distraction subjects, $\bar{X} = .42$).

Thought production. A marginally significant Message \times Distraction interaction $F(1, 48) = 3.10$, $p < .08$, was obtained on the number of counterarguments generated. Duncan's multiple range procedure (Table 1) indicated that, as predicted, the number of counterarguments generated under low distraction for the easy-to-counterargue message was significantly greater than the number generated under medium distraction. The number of counterarguments generated to the difficult message did not differ as a function of distraction. As in Experiment 1, increased distraction reduced counterargumentation for the easy message only.

A significant Message \times Distraction interaction was obtained on the number of favorable thoughts generated $F(1, 48) = 6.27$, $p < .05$. The Duncan multiple range procedure (Table 1) indicated that significantly more favorable thoughts were generated to the dif-

⁵ The reader may wonder why a message advocating a proattitudinal position would generate any counterarguments at all. Recall that the easy-to-counterargue message discussed specific consequences that would result if the tuition were reduced (e.g., initiation of bus fares, reduced books in the library, etc.) that most students viewed as undesirable.

difficult message under low distraction than under medium distraction. For the easy-to-counterargue message, there was no difference as a function of distraction. The patterns of differences on the thought measures are exactly congruent with the thought disruption hypothesis.

Recall. The manipulations produced no significant differences on the number of message arguments that could be recalled. The average number of arguments recalled across all cells was 3.77 out of 5 possible.

DISCUSSION

The pattern of means on attitude, counterargument, and favorable thought measures in both Experiments 1 and 2 supported the general thought disruption hypothesis over the effort justification notion. As the level of distraction went up, the number of counterarguments went down for the easy-to-counterargue message, but remained unchanged for the difficult-to-counterargue message. Likewise, as the level of distraction went up, the number of favorable thoughts generated went down for the difficult-to-counterargue message, and remained unchanged for the easy-to-counterargue message. The role of distraction appears to be selective. The present evidence suggests that distraction inhibits the dominant cognitive response to a persuasive appeal. If the dominant cognitive response is counterargumentation, then distraction will tend to inhibit this and result in increased persuasion; but if the dominant cognitive response is favorable thoughts, distraction will tend to inhibit this and result in decreased persuasion.

Following Osterhouse and Brock (1970) and Insko et al. (1975), several analyses of covariance were conducted using the standardized attitude index as the criterion in all cases. In Experiment 1 the crucial Message \times Distraction F of 2.97 is reduced to a nonsignificant 2.49 when counterarguments are the covariate, to a nonsignificant 2.51 when favorable thoughts are the covariate, and to a nonsignificant 2.28 when both are used as covariates. This same result occurs in Experiment 2 in that a significant Message \times Distraction F of 6.89 is reduced to a nonsignificant 3.85 when counterarguments are co-

varied, to 2.03 when favorable thoughts are covaried, and is reduced substantially to 1.48 when both are used as covariates. These results are consistent with the notion that the subjects' cognitive responses mediate the interaction.

CONCLUSIONS

Why not conclude that the distraction effect is mediated by both thought disruption and effort justification? Why insist on a monistic explanation? The answer lies in the predictive power of the competing explanations. The effort justification prediction is that the more effortful the distraction, the more successful it will be in producing acceptance. Yet the studies reported here indicate that the distraction effect appears to be dependent not upon the amount of effort produced, but on the message content and the nature of the thoughts elicited by the message. The thought disruption hypothesis allows the specific prediction that distraction is most likely to lead to *enhanced* persuasion when a message presents poor arguments (i.e., arguments that are open to refutation and counterargumentation) and to *reduced* persuasion when a message presents very good arguments (i.e., arguments that are likely to elicit favorable thoughts). The effort justification hypothesis fails because it is unable to make such differential predictions.

In sum, the results of the present experiments appear to have extended the role of distraction beyond the confines of counterattitudinal persuasion. Not all of the pertinent comparisons were statistically reliable, but the replicated patterns of differences make it likely that subsequent investigators will be able to determine the dominant cognitive response to a communication, estimate the cumulative effect of these responses on acceptance, and control much of the variance in acceptance by systematic manipulations of distraction. The current research suggests that distraction can enhance or reduce yielding to propaganda depending on the nature of the message (whether easy or difficult to counterargue) and the extent to which appropriate responses (favorable thoughts or counterarguments) are evoked.

REFERENCE NOTE

1. Baron, R. S. Personal communication, October 9, 1975.

REFERENCES

- Baron, R. S., Baron, P. H., & Miller, N. The relation between distraction and persuasion. *Psychological Bulletin*, 1973, *80*, 310-323.
- Brock, T. C. Communication discrepancy and intent to persuade as determinants of counterargument production. *Journal of Experimental Social Psychology*, 1967, *3*, 296-309.
- Cialdini, R. B., Levy, A., Herman, C. P., Kozlowski, L. T., & Petty, R. E. Elastic shifts of opinion: Determinants of direction and durability. *Journal of Personality and Social Psychology*, in press.
- Cohen, A. R. Communication discrepancy and attitude change: A dissonance theory approach. *Journal of Personality*, 1959, *27*, 386-396.
- Cullen, D. M. *Attitude measurement by cognitive sampling*. Unpublished doctoral dissertation, Ohio State University, 1968.
- Festinger, L. *A theory of cognitive dissonance*. Evanston, Ill.: Row, Peterson, 1957.
- Festinger, L., & Maccoby, N. On resistance to persuasive communications. *Journal of Abnormal and Social Psychology*, 1964, *68*, 359-366.
- Freedman, J. L., & Sears, D. O. Warning, distraction, and resistance to influence. *Journal of Personality and Social Psychology*, 1965, *1*, 262-266.
- Gaito, J. Unequal intervals and unequal n in trend analysis. *Psychological Bulletin*, 1965, *63*, 125-127.
- Greenwald, A. G. Cognitive learning, cognitive response to persuasion and attitude change. In A. G. Greenwald, T. C. Brock, & T. M. Ostrom (Eds.), *Psychological foundations of attitudes*. New York: Academic Press, 1968.
- Insko, C. A., Turnbull, W., & Yandell, B. Facilitating and inhibiting effects of distraction on attitude change. *Sociometry*, 1975, *4*, 508-528.
- Keating, J. P., & Brock, T. C. Acceptance of persuasion and the inhibition of counterargumentation under various distraction tasks. *Journal of Experimental Social Psychology*, 1974, *10*, 301-309.
- Kiesler, S., & Mathog, R. The distraction hypothesis in attitude change: Effects of effectiveness. *Psychological Reports*, 1968, *23*, 1123-1133.
- Kirk, R. E. *Experimental design: Procedures for the behavioral sciences*. Belmont, Calif.: Brooks/Cole, 1968.
- Kleinheselink, R. R., & Edwards, R. E. Seeking and avoiding belief-discrepant information as a function of its perceived refutability. *Journal of Personality and Social Psychology*, 1975, *31*, 787-790.
- Lowin, A. Approach and avoidance as alternate modes of selective exposure to information. *Journal of Personality and Social Psychology*, 1967, *6*, 1-9.
- Miller, N., & Baron, R. S. On measuring counterarguing. *Journal for the Theory of Social Behaviour*, 1973, *3*, 101-118.
- Osterhouse, R. A., & Brock, T. C. Distraction increases yielding to propaganda by inhibiting counterarguing. *Journal of Personality and Social Psychology*, 1970, *15*, 344-358.
- Petty, R. E. *Distraction can enhance or reduce yielding to propaganda by interfering with cognitive responses*. Unpublished master's thesis, Ohio State University, 1975.
- Regan, D. T., & Cheng, J. B. Distraction and attitude change: A resolution. *Journal of Experimental Social Psychology*, 1973, *9*, 138-147.
- Roberts, D. F., & Maccoby, N. Information processing and persuasion: Counterarguing behavior. In P. Clark (Ed.), *New models for mass communication research* (Vol. 2). Beverly Hills, Calif.: Sage, 1973.
- Rosenblatt, P. C. Persuasion as a function of varying amounts of distraction. *Psychonomic Science*, 1966, *5*, 85-86.
- Rule, B. G., & Rehill, D. Distraction and self-esteem effects on attitude change. *Journal of Personality and Social Psychology*, 1970, *15*, 359-365.
- Silverman, I., & Regula, C. Evaluation apprehension, demand characteristics, and the effects of distraction on persuasibility. *Journal of Social Psychology*, 1968, *75*, 273-281.
- Vohs, J. L., & Garrett, R. L. Resistance to persuasion: An integrative framework. *Public Opinion Quarterly*, 1968, *32*, 445-452.
- Wicklund, R. A., Cooper, J., & Linder, D. E. Effects of expected effort on attitude change prior to exposure. *Journal of Experimental Social Psychology*, 1967, *2*, 416-428.
- Zimbardo, P. G., & Ebbesen, E. B. The experimental modification of the relationship between effort, attitude and behavior. *Journal of Personality and Social Psychology*, 1970, *16*, 207-213.
- Zimbardo, P. G., Snyder, M., Thomas, J., Gold, A., & Gurwitz, S. Modifying the impact of persuasive communications with external distraction. *Journal of Personality and Social Psychology*, 1970, *16*, 669-680.

(Received February 12, 1976)