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Inoculation techniques from social psychological theory were applied to a controversial issue in a marketing context. Experimental factors were type of defense, time interval between defense and attack, and credibility of the attacker. In general, predictions from inoculation theory were confirmed: all defenses conferred resistance to attack; the refutational defense was superior to the direct supportive defense.

Resistance to Persuasion: Inoculation Theory in a Marketing Context

INTRODUCTION

With advertising and marketing claims being attacked by competitors, government, and advertising agencies themselves (i.e., corrective advertisements), it is surprising to note the lack of research on advertising strategy designed to confer resistance to persuasive attack. Little empirical research is available to answer even basic questions [1, 10, 11]. For example, if an advertiser knows he is to be attacked and has an idea of what arguments the attacker will use, which of many advertising strategies will best neutralize the attack? Should the advertiser reaffirm his claims, or should he try to refute the attack's arguments? If refuting the arguments proves to be a greater neutralizing strategy than reaffirming previous claims, will the advertiser gain similar benefit by refuting arguments which are not used in the attack? Does refuting attack confer greater resistance to persuasion over time than reaffirming and supporting previous claims? Is there a greater benefit for the advertiser if he issues his advertisement just prior to the attack rather than several days before the attack? Finally, are some attack sources more effective than others? This study attempts to answer these questions in a laboratory setting.

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THEORETICAL FRAMEWORK

Social psychological literature suggests numerous methods of inducing resistance to persuasion [6]. One of the most comprehensive approaches to inducing resistance to persuasion has been inoculation theory as formulated by McGuire [6]. While having some roots in the selective exposure hypothesis, inoculation theory can be treated independently of this premise [12]. Defense by avoidance, although highly effective for belief maintenance, has the disadvantage of leaving the individual poorly prepared to resist counterarguments should he be involuntarily exposed to them.

The research of McGuire and Papageorgis focused on how different inoculation or defensive techniques conferred resistance to attack for cultural truisms. As other researchers have noted "since consumers' opinions about products vary from extremely favorable to extremely unfavorable and almost never reach the level of a culturally held truism, research conducted with cultural truism requires modification and additional testing for marketing applications" [1, p. 56]. This study extends the research of McGuire and Papageorgis by applying defensive techniques to a belief which is not universally held in this society.

According to McGuire [6] an effective defense should have: (1) a threatening component which produces realization of the vulnerability of the belief and which supplies motivation to acquire belief-bolstering arguments, and (2) an information component which provides the required arguments. He reasoned that a prior defense which merely offers support (i.e., information component only) for a belief fails to induce resistance to subsequent attack since it belabors the obvious. McGuire

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proposed that a prior defensive treatment, such as a refutation of the attack, would serve as a threat to the belief by alerting the individual to the possibility of attack. This threat would motivate the individual to assimilate the information in the message and seek out new support for his position.

McGuire and Papageorgis have completed a series of experiments which marshal considerable support for such a theoretical position. In this series of experiments, McGuire and Papageorgis [7] found that both refutational and supportive defenses were superior to a no-defense condition in making cultural truisms resistant to attack. Further, the refutational defense conferred greater resistance to persuasion than did the supportive defense. Could similar results be expected if the defenses were applied to belief that was not a cultural truism?

Papageorgis and McGuire [9] have also investigated the generality of the immunity produced by the refutational defense. The results indicated that the refutational defense conferred resistance to attack even when refuted arguments in the defense were different from those used in the attack. However, resistance developed against the same counterarguments (refutational–same defense) was slightly higher than that developed against the different counterarguments (refutational–different defense). Papageorgis and McGuire [9] interpreted these results as demonstrating that the efficacy of the refutational defense derived not only from weakening the opposing counterarguments but also from threat induced to bolster defenses. Other theorists [12] have interpreted these results by attributing the efficacy of the refutational defense to a decrease in the perceived bias of the defense or a decrease in the credibility of the attack. Regardless of theoretical approach, there would appear to be a generalization effect.

McGuire [5] found that the refutational–different defense conferred only slightly more resistance to persuasion than the supportive defense. But when the refutational–same defense was combined with the refutational–different defense, the combination conferred significantly more resistance to persuasion than did the supportive defense ($p < .01$). Thus, when *some* of the attack arguments can be anticipated, an advertiser may gain greater advantage by using a refutational defense rather than a supportive defense.

McGuire [5] hypothesized that the supportive defense would not only be initially inferior to the refutational defenses but, in addition, the resistance that it did confer would decay more rapidly than that conferred by the refutational defenses. The prediction followed from the interpretation that the immunizing efficacy of the supportive defense derived solely from the acquaintance with the positive arguments which it contained and which tended to be forgotten over time. The efficacy of the refutational defense, on the other hand, derived from both the information in the message and the threat induced to assimilate it to bolster defenses. Results indicated that refutational defenses conferred greater resistance to persuasion over time than did supportive defenses. If this finding can be applied to advertising, it would indicate that refutational defenses provide greater resistance to persuasion over time than do supportive defenses.

Finally, Tannenbaum, Macaulay, and Norris [13] found an attack from a credible source was more effective in reducing belief level than an attack from a less credible source. Can similar results be obtained with beliefs other than cultural truisms?

CULTURAL TRUISMS AND CONTROVERSIAL BELIEFS

McGuire defines cultural truisms as "beliefs that are so widely shared within the person's social milieu that he would not have heard them attacked, and indeed would doubt that an attack was possible" [6, p. 201]. Explanations of why McGuire and his associates chose cultural truisms (i.e., health truisms) rather than controversial beliefs to test hypotheses from inoculation theory would include:

1. they best met the criterion of having been raised in an aseptic ideological environment where attack was unthinkable,
2. the hypothesized defense effects would be optimal with this type of belief,
3. the beliefs have heuristic value since they lend themselves to the medical analogy of inoculation or immunization, and
4. this type of belief facilitates the continuity of research paradigm without concern for the intrusion of external events.

The theory is an excellent and thorough investigation of a delimited problem where overlapping studies both replicate previous work and extend to new questions [4]. It is a delimited problem because what individual or group would, in reality, attack such a proposition as "The effects of penicillin have been, almost without exception, of great benefit to mankind." Kiesler, Collins, and Miller [4] note that empirical work has not been done to establish just how "true" a cultural truism must be before an individual feels it is unassailable. Must inoculation theory be limited to cultural truisms or can it encompass controversial beliefs?

Bither, Dolich, and Nell [1] have published a study investigating resistance to persuasion for a controversial belief. The belief chosen was: "There should be little or no censorship of movies." The subjects were college students. The experimental design was a $2 \times 2 \times 2$ factorial, with two levels of immunization (immunization vs. no immunization), two levels of attack (attack vs. no attack), and two levels of source of immunization (high prestige vs. medium prestige).

The results indicate that immunization (refuting the attack's arguments before the attack was given) increased the positive level of the attitude, and attack

lowered belief level for both immunized and nonimmunized subjects. The immunization × attack interaction was not significant. This led the authors to conclude that they failed to reject the null hypothesis. However, the data would appear to indicate that subjects in the attack conditions not prepared with immunization showed greater negative attitude change than those subjects prepared with immunization.

For inoculation theory to be effectively applied to a controversial issue, it may be necessary to have an issue which is relatively new and for which the subject population has not been called upon to refute explicit arguments against the belief. However, in order to move away from artificiality, the belief should not be as strongly held as a cultural truism. Given the previous review, the hypotheses of this study follow. All hypotheses refer to *inducing resistance to an attack advertisement.*

Hypothesis One: Both supportive and refutational defenses will be superior to a no-defense treatment.

Hypothesis Two: The refutational–same defense will be superior to the supportive defense.

Hypothesis Three: Refutational defense (i.e., both refutational–same and refutational–different defenses combined) will be superior to supportive defense.

Hypothesis Four: Refutational defenses will be superior to the supportive defense *over time.*

Hypothesis Five: Attack from a low credibility source will be less effective in reducing belief level than that from a high credibility source.

METHOD

Subjects

The subjects for this research were 272 students at Purdue University during the fall semester, 1972. Approximately 65% of the subjects were females.

Criteria for Belief Selection and Method of Belief Measurement

Given the task—to determine if inoculation theory applies to a marketing context—the criteria for selecting the belief included the following: (1) the belief should have generated some controversy, (2) the subject population should not have been called upon to refute explicit arguments against the belief, and (3) the belief should not be as strongly held as health-oriented cultural truisms. A belief which satisfied these criteria was: "Inflatable air bags should be installed as passive safety devices in all new cars." A pretest conducted with introductory psychology students indicated that the belief was not as strongly held as cultural truisms (i.e., mean = 11.62 on a 15-point scale). Cultural truisms, using the same scale, have stronger belief acceptance; means range from 13.50 to 14.50.

Further, in the debriefing session, pretest subjects indicated that they had been rarely asked to refute counterarguments to the belief. Finally, the belief is of topical nature and has created some controversy (e.g., witness the advertisements of Ford and Allstate Insurance for 1971, the advertisements of the American Automobile Association for 1972, and the editorials of consumer magazines for both 1971 and 1972).

The statements used to represent the belief were: "All things considered, getting air bags installed as a safety device in new cars would be a wise decision" and "Inflatable air bags should be installed as passive safety devices in all new cars." The scale used to measure the subject's belief level was the same as that used by McGuire and his associates in prior inoculation research [5, 6]. An example of the 15-point bipolar scale is presented in Figure 1.

Figure 1

BELIEF STATEMENT AND MEASUREMENT SCALE

Inflatable air bags should be installed as passive safety devices in all new cars.

1 | 2 | 3	4 | 5 | 6	7 | 8 | 9	10 | 11 | 12	13 | 14 | 15
Definitely False	Probably False	Uncertain	Probably True	Definitely True

Experimental Design

The experimental design was a 4 × 2 × 2 × 2 factorial, consisting of four levels of defense (supportive, refutational–same, refutational–different, and no defense), two levels of time to attack (immediate attack and three days to attack), two levels of source attack (high credibility and low credibility), and two levels of trials (pre- and postbelief measurement). The first three factors were between-subject factors. The last factor was a within-subject factor, repeated measures taken as pre- and postbelief level [11]. Seventeen subjects were assigned to each of the experimental conditions.

Independent Variables

Defense. Each of the defensive advertisements was four paragraphs long and contained approximately 350 words. The *supportive* advertisement had an introductory paragraph mentioning that the belief in question was obviously valid, but that it was wise to consider some of the arguments why it was indeed valid. Three arguments in support of the belief were then mentioned. Each of the three subsequent paragraphs developed one of these supporting arguments. The supportive advertisement avoided any mention of possible counterarguments against the belief.

The *refutational–same* advertisement began with a similar introductory paragraph mentioning that the belief was obviously valid, but since occasionally one heard misguided counterarguments attacking it, it was wise to consider some of these counterarguments and show wherein they had erred. Three counterarguments were then mentioned. Each of the three following paragraphs developed a refutation for one of these counterargu-

ments. The refutational advertisement avoided mention of arguments directly supporting the belief, refuting only counterarguments against it. The arguments against the belief which were refuted in this advertisement were the same arguments which subsequently appeared in the attack advertisement, hence the description refutational–*same*.

The *refutational–different* advertisement followed the same development as that of the refutational–same advertisement with one exception. The refuted arguments against the belief were not the same as those which subsequently appeared in the attack advertisement, hence the description refutational-*different*. The attributed source for all defensive advertisements was Consumer's Union. The source's name appeared at the top of every defensive advertisement. The *no-defense* condition was presented to subjects by inserting another four paragraph advertisement in their experimental booklets in place of a defensive advertisement.

Time to Attack. The time to attack variable was manipulated by varying the time period between the defensive advertisement and the attack advertisement. Half of the subjects received the attack advertisement 30 minutes after they received the defensive advertisement. The other subjects received the attack advertisement three days after they received the defensive advertisement.

Source of Attack. Sources of high and low credibility were chosen on the basis of a pretest, where subjects ranked sources according to credibility. *Consumer Reports* was selected to represent a high credibility source for messages associated with automobiles. The American Automobile Manufacturers Association was selected as a medium to low credibility source for messages associated with installation of air bags in automobiles. The source's name appeared at the top of every attack advertisement.

Trials. Each subject indicated his belief level prior to the experiment. This measurement acted as the subject's prescore in the analysis. The subject's belief level score after the experimental manipulations acted as the postscore in the analysis.

Attack Advertisement

The attack advertisement was four paragraphs long and contained 350 words. The introductory paragraph questioned whether accepting the belief was tenable and proceeded to issue three arguments against the belief. Each of the three paragraphs that followed developed one of these arguments against the belief.

Procedure

In an attempt to reduce the demand characteristics of the experimental setting (i.e., cues indicating what the experimenter expected the subjects to do [8]), subjects were led to believe they were involved in two separate research projects. The instructions for the first session stated: "This project is concerned with how the length and technical aspects of an advertisement affect comprehension." The instructions for the second session stated: "This project is concerned with how the sense modality (reading or hearing) through which a consumer encounters an advertisement affects comprehension."

Before beginning the first session, each student completed a 17-item questionnaire which included the two questions about air bag installation. Each subject then received a booklet containing four editorial advertisements. One of the four advertisements contained the defensive treatment (supportive, refutational–same, refutational–different, or no defense) which was randomly positioned in each booklet. The other three were selected from popular magazines.

Subjects were given four minutes to read each advertisement and underline those phrases which they considered to be most important. This underlining task was introduced to encourage thoughtful reading and to lend credibility to the comprehension guise. Before leaving the experimental session subjects completed a postexperimental questionnaire.

The second session came either 30 minutes or 3 days later. The instructions were read to the subjects and each received a booklet containing four editorial advertisements. One of the four contained the attack against the use of air bags; position was randomly assigned in each booklet. The other three were popular advertisements other than those used in the first session.

Subjects were given four minutes to read each advertisement and underline those phrases which they considered to be important. After completing this task, the subjects completed a second 17-item questionnaire. Fifteen of the items were different from the first questionnaire. Two of the items were identical to those on the air bag belief in the first questionnaire. Before leaving the experiment, subjects filled out a second postexperimental questionnaire and were debriefed as to the purpose of both experimental sessions. Other techniques employed to reduce the demand characteristics of the setting included different labeled subject sign-up sheets, different experimenters, and different room assignments for the two sessions.

Additional Control Groups

External Events Control Group. To determine whether external events (e.g., a new advertisement campaign or prominent news story on air bags) during the experimental time period might have influenced the results, one group of 16 subjects participated in both the first experimental session (first day) and the second experimental session (third day). This group received neither defensive nor attack advertisements in their two experimental booklets. Effects of possible external influences on subjects' responses were assessed by a trials-by-subjects analysis of variance [14, p. 261].

No Pretest Control Group. On the third day of the experiment another group of 16 subjects received only the procedure appropriate for the second experimental

session. However, this group did not receive an attack advertisement in their experimental booklets. The postscores of this no pretest control group and the postscores of the external events control group were compared in a groups-by-subjects analysis of variance [14, p. 149] to determine whether or not completing the first questionnaire had an effect on completing the second.

RESULTS

From the postexperimental questionnaires it was determined that 14 subjects had perceived the purpose of each experimental session to be a test of an advertisement's influence. However, neither these subjects nor the rest of the subjects perceived that both sessions were connected in purpose nor did they identify which advertisements were critical to the experimental manipulations. The precautions taken to reduce demand characteristics were considered effective.

No significant difference was found between the prescore belief level and the postscore belief level of the external events control group indicating that external events did not cause change in the subjects' responses. Furthermore, there was no significant difference between the postscore belief level of the external events control group and the belief level of the no pretest control group indicating that completing both questionnaires did not present a confounding influence on subjects' responses.

The total number of subjects for the overall analysis was reduced from 272 to 240 due to subject attrition and subject misperception of the message sources. Twenty-three subjects failed to appear at the second testing session and nine subjects failed to correctly identify the defense source and/or the attack source. The analysis reported here is based on the responses of the 240 subjects who attended both testing sessions and correctly identified both the defense source and the attack source

Table 1

MEAN BELIEF VALUES, STANDARD DEVIATIONS, AND APPROPRIATE N FOR OVERALL ANALYSIS

Condition	*Consumer agency attack*		*Automobile manufacturers' attack*	
	Predefense score	*Postattack score*	*Predefense score*	*Postattack score*
Supportive				
Time-immediate				
$\bar{X}$	19.75	12.81	19.13	12.53
N	(16)		(15)	
σ	5.67	7.70	6.21	6.62
Time-3 days				
$\bar{X}$	18.50	11.86	19.87	13.54
N	(14)		(15)	
σ	6.47	5.64	5.71	4.77
Refutational-same				
Time-immediate				
$\bar{X}$	18.29	16.14	19.06	17.50
N	(14)		(16)	
σ	6.08	6.29	8.07	7.86
Time-3 days				
$\bar{X}$	21.08	13.92	20.71	15.47
N	(13)		(17)	
σ	6.06	3.97	6.07	7.05
Refutational-different				
Time-immediate				
$\bar{X}$	20.13	15.80	18.67	14.33
N	(15)		(15)	
σ	5.64	5.36	5.75	6.48
Time-3 days				
$\bar{X}$	20.80	13.80	18.56	13.75
N	(15)		(16)	
σ	6.91	5.76	4.90	5.32
No-defense				
Time-immediate				
$\bar{X}$	19.44	10.38	19.07	12.06
N	(16)		(15)	
σ	6.5	4.53	5.09	6.99
Time-3 days				
$\bar{X}$	20.50	11.00	18.50	8.38
N	(14)		(14)	
σ	5.16	6.58	6.07	4.89

for their experimental condition. The number of subjects in each experimental cell ranged from 13 to 17.

The similarity of the belief items is reflected by the high intrasubject correlation (.86) between the two items on the premeasure. Analyses were performed on each belief item and the combination of both items. All three analyses showed similar effects. The analysis presented here is based on the combination of the belief items.

Table 1 presents the mean belief values, standard deviations, and number of subjects for the cells in the experimental design. Table 2 presents the results of a four-way ANOVA, based on the data presented in Table 1. Significant main effects indicated that defenses differed in resistance conferred ($F = 3.82$, d.f. = 3, 224, $p < .01$) and postscores were lower than prescores ($F = 171.19$, d.f. = 1, 224, $p < .0001$). However, these effects, especially the defense effect, should be interpreted with regard to the significant Defense × Trials interaction in the overall analysis ($F = 5.06$, d.f. = 3, 224, $p < .01$). The Defense × Trials interaction is presented in Figure 2.

Table 3 presents the mean belief values and standard deviations for the Defense × Trials interaction. Analysis of the simple main effect of the Trials factor at each level of the Defense factor indicated significant ($p < .01$) pre/post difference in belief level for all levels of the Defense factor; regardless of the defense treatment, the attack significantly reduced belief level.

Analysis of the simple main effect of the Defense factor at the prelevel of the Trials factor indicated no significant differences among the pretreatment means. Analysis of the simple main effect of the Defense factor at the postlevel of the Trials factor indicated significant differences among the posttreatment means ($F = 8.52$, d.f. = 3, 448, $p < .01$). A Newman-Keuls analysis of these posttreatment means indicated that the refutational means (refutational–same = 15.83, refutational–different = 14.41) were significantly greater ($p < .01$) than the no-defense mean (10.47). Further, the supportive mean (12.70) was significantly greater ($p < .05$) than the no-defense mean. These results confirm the first hypothesis: *Both supportive and refutational defenses*

Table 2

ANALYSIS OF VARIANCE OF BELIEF VALUES FOR COMPLETE DESIGN

Source	*d.f.*	*MS*	*F*
Between Ss			
Defense (D)	3	182.73	3.82[a]
Time to Attack (TA)	1	11.19	<1
Source of Attack (SA)	1	4.44	<1
D × TA	3	3.14	<1
D × SA	3	32.03	<1
TA × SA	1	2.55	<1
D × TA × SA	3	31.76	<1
Error (between)	224	47.84	
Within Ss			
Trials (Tr)	1	4554.53	171.19[b]
D × Tr	3	134.57	5.06[a]
TA × Tr	1	102.89	3.87[c]
SA × Tr	1	21.28	<1
D × TA × Tr	3	26.95	1.01
D × SA × Tr	3	1.28	<1
TA × SA × Tr	1	.29	<1
D × TA × SA × Tr	3	8.55	<1
Error (within)	224	26.60	

[a] $p < .01$
[b] $p < .0001$
[c] $p < .05$

Figure 2

DEFENSE BY TRIALS INTERACTION FOR ATTITUDE TOWARD USE OF AIR BAGS

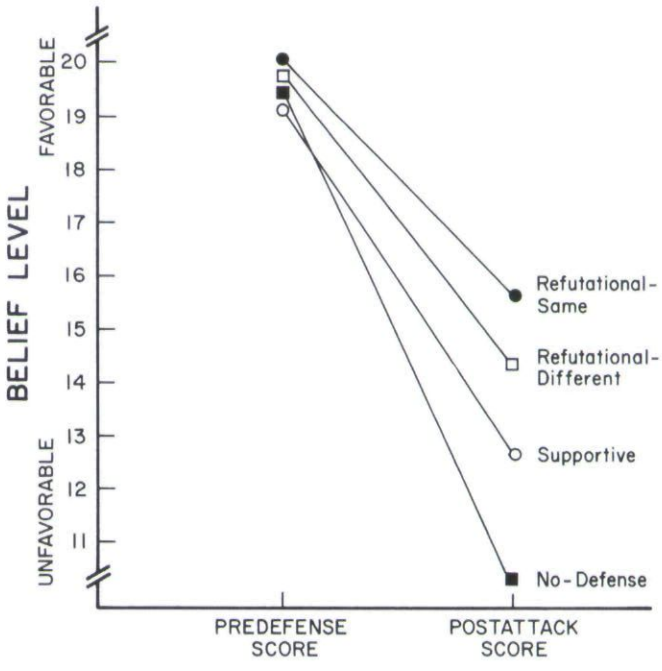


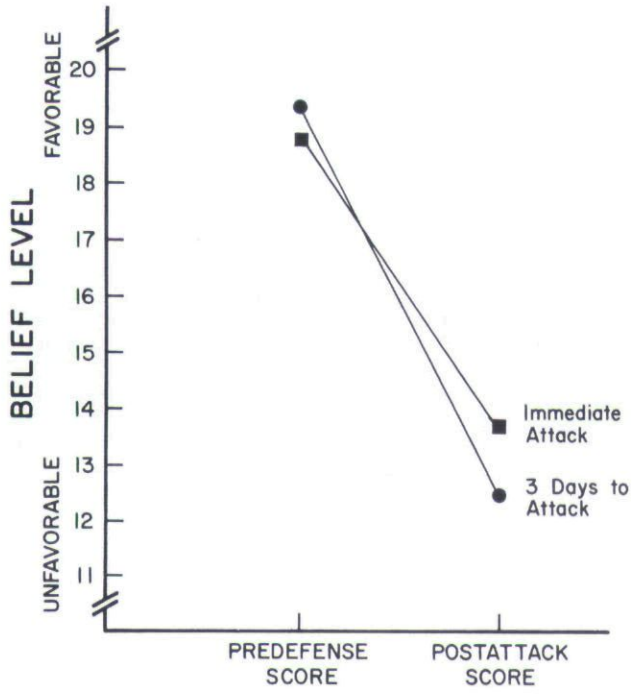
Table 3

DEFENSE BY TRIALS INTERACTION FOR ATTITUDE TOWARD USE OF AIR BAGS

Defense	*Trials*	
	Predefense score	*Postattack score*
Refutational-same		
$\bar{X}$	19.78	15.83
σ	6.59	6.54
Refutational-different		
$\bar{X}$	19.52	14.40
σ	5.76	5.66
Supportive		
$\bar{X}$	19.33	12.70
σ	5.88	6.18
No defense		
$\bar{X}$	19.37	10.47
σ	5.65	5.83

Figure 3

TIME TO ATTACK BY TRIALS INTERACTION FOR ATTITUDE TOWARD USE OF AIR BAGS



were superior to the no-defense treatment in making the belief resistant to attack.

The second hypothesis stated: *The refutational–same defense would be superior to the supportive defense in conferring resistance to attack.* The previous Newman-Keuls analysis of posttreatment means indicated that the refutational–same mean (15.83) was significantly greater ($p < .05$) than the supportive mean (12.70). The results confirm the second hypothesis.

The third hypothesis stated: *The refutational defense (i.e., refutational–same and refutational–different defenses combined) would confer more resistance to attack than the supportive defense.* The combined refutational posttreatment mean (15.11) was significantly greater ($F = 6.201$, d.f. $= 1, 179$, $p < .01$) than the supportive posttreatment mean (12.70). The results confirm the third hypothesis, but it should be noted that in this study, as in previous studies involved with inoculation theory, the refutational–different posttreatment mean was not significantly greater than the supportive posttreatment mean.

The fourth hypothesis stated: *Refutational defenses will be superior to the supportive defense over time.* The Defense × Time to Attack × Trials interaction was not significant in the overall analysis. The hypothesis did not receive empirical support. However the Time to Attack × Trials interaction was significant.

The Time to Attack × Trials interaction is presented in Figure 3. Table 4 presents the mean belief values, and standard deviation for the Time to Attack × Trials interaction. Analyses of the simple main effect of Trials at the levels of Time to Attack indicated significant ($p < .01$) pre/post difference for both the immediate attack and the attack three days later; regardless of the level of the Time to Attack, belief was significantly reduced on the posttreatment scores. Analysis of the simple main effect of the Time to Attack at both levels of the Trials factor did not indicate significant differences between means. However, it would appear from the slope of the "three days to attack" line in Figure 3 that the farther the attack is removed for the defensive treatment, the more effective is the attack.

Hypothesis five stated: *Attack from a source of low credibility (i.e., American Auto Manufacturers Association) would not be as effective as an attack from a source of high credibility (i.e., Consumer Reports).* The Source of Attack × Trials interaction was not significant in the overall analysis. The hypothesis did not receive empirical support.

DISCUSSION

It would appear that inoculation theory may prove to be a useful conceptual framework to the advertiser or marketing specialist formulating advertising strategy. All the defensive techniques taken from inoculation theory were found to confer greater resistance to persuasion than a no-defense treatment. In accord with theoretical predictions, the refutational–same defense conferred greater resistance to persuasion than did the supportive defense. This would imply that if an advertiser knew the explicit arguments his opponent was to use in the attack, he would derive greater resistance to the attack by issuing a refutational advertisement rather than a supportive advertisement.

Further, as obtained in prior inoculation studies dealing with cultural truisms, the refutational–different defense alone did not confer greater resistance to persuasion than did the supportive defense. So it is not just threat, but threat in connection with relevant refuting

Table 4

TIME TO ATTACK BY TRIALS INTERACTION FOR ATTITUDE TOWARD USE OF AIR BAGS

Time to attack	*Trials*	
	Predefense score	*Postattack score*
Immediate attack		
$\bar{X}$	19.20	13.92
σ	6.05	6.78
3 days to attack		
$\bar{X}$	19.81	12.80
σ	5.85	5.84

arguments that is important in providing resistance to attack. However, when the refutational–different defense was combined with the refutational–same defense, the resulting combination proved to be more effective than the supportive defense in maintaining belief level. This would imply that an advertiser with partial knowledge of his opponents arguments may derive greater benefit through a refutational rather than a supportive format.

The fourth hypothesis of the study predicted that the refutational defenses would confer more resistance to attack over time than the supportive defense (i.e., the efficacy of the supportive defense would decay at a faster rate than that of the refutational defenses). This prediction did not receive empirical support. The stated interrelationships between the defenses occurred regardless of whether the attack came on the same day as the defensive treatment or three days later. Failure to confirm hypothesis four may be because experimental design lacked a longer time interval (i.e., seven days) to attack. The hypothesis merits further research.

Credibility of the source of attack was found to have no effect on the subjects' belief level. Considering the explicit nature of the messages, subjects may have discounted the trust component of source credibility and assumed equivalent technical expertise. Further, just presenting the names of the sponsors may not have been a powerful manipulation of the source factor. A brief description of the sponsor's past positions on automotive issues (i.e., pollution) may have been a more effective manipulation.

The conclusions of this study should not be taken as general prescriptions. Let us take the case when an attack is not likely. It has been found that supportive defenses increase belief level more than refutational defenses when not followed by an attack [7]. It could be argued that refutational defenses could *lower* belief level in comparison to a no-defense control when not followed by an attack or followed by a weak attack [12].[1]

Further research should be pursued to determine the extent to which social psychological theory can be used to develop advertising strategy. Do defensive treatments have differential effects on intention to purchase or purchase behavior [11]? Could defensive treatments help maintain brand loyal behavior and repeat purchase behavior [3]? Also, given that an advertiser is to be attacked, is there any greater benefit derived from issuing defensive messages before the attack rather than after the attack? Do defensive formats vary in their "wear out" rate over time? Do combinations of defense strategies (refutation and supportive) confer more resistance to persuasion over time with repetition than either defense alone? Further research should investigate how the nature of the audience (e.g., college students vs. general public) and communications (e.g., length and mode of presentation) effect resistance to persuasion [2]. This research should be pursued through both laboratory and field experimentation.

In summary, the findings of this study indicate the general superiority of issuing a defense in comparison to issuing no defense, and refutation of an attack's arguments conferred more resistance to persuasion than supportive claims. These results were obtained with a contemporary issue of relevance to advertisers rather than the cultural truisms used in past inoculation research.

[1] The possibility that defenses affected the attitude prior to the attack was checked in this study by using four no-attack groups: supportive defense, refutational-same defense, refutational-different defense, and no defense. There were no significant differences among the four no-attack defense groups.

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