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# Persuasiveness of Communications Is Affected by Exposure Frequency and Message Quality: A Theoretical and Empirical Analysis of Persisting Attitude Change

John T. Cacioppo and Richard E. Petty

Repeated presentations of commercials save production costs and increase their persuasive effectiveness. This observation holds empirically up to a point; however, there is now ample proof that excessive presentations of a commercial decrease persuasive effectiveness, which may lower or reverse the benefits realized from the earlier advertising expenditures. This survey reports several social-psychological analyses of the manner and means by which message repetition might influence persuasion. Two experiments that were designed to select from among these accounts are reported. We conclude our survey by focusing on the cognitive-response formulation, because it provided the most parsimonious account of the data.

## Introduction

The overuse of an advertisement may enhance *brand awareness*, but brand preference, or favorable attitudes toward the product, may suffer [6]. Given the social implications of advertising and the large sums of money spent each year to promote favorable attitudes towards a product or concept, it is surprising that one can think of few influences on persuasion that are currently more confusing than the effects of message repetition (cf. [49]). Much research has been devoted to determining the effects of exposure frequency (e.g., [16, 39]; for recent reviews, see [30, 50]), but parsimonious accounts of the underlying processes and accurate predictions of the effects of repetition have been elusive.

Several factors have contributed to this theoretical deficit. Over the years, research has focused largely on persuasion processes that were stimulated

either by the context of the message (e.g., source credibility) or by the content of the persuasive appeal (e.g., message-argument comprehensibility). Non-content-based persuasion is thought to occur because of motives to maintain one's self-esteem [37] or to promote positive self-presentations [17], whereas content-based persuasion is thought to occur because of motives to obtain an accurate view of the issue. The accumulated literature on persuasion suggests that both processes are operative, though little is known about their relative contributions to persuasion. Content factors, in contrast to context factors, appear to produce a persisting change in attitudes [43, 47], but this notion has not been tested in the area of message repetition.

Second, much of the research that has established exposure frequency as an important variable in persuasion has been designed for specific applications, and the experimental controls and statistical analyses necessary for the development of a more general understanding of the effects of message repetition on consumer attitudes have been less in evidence (cf. [3, 24]). Third, the measure of commercial effectiveness has been operationalized a number of different ways, including the audience's attitude toward the product, recall of the commercial's context, brand recognition, and evaluation of the commercial per se. These differences across studies have contributed to some of the confusion in the area since: (a) typically, only one of these measures appears in any single study, and inconsistent results across studies have been attributed to procedural differences; but (b) evidence from studies that have examined the effects of exposure frequency on two or more of these measures indicates that these variables can be affected differently by the same procedures [6, 14, 40].

Our aim in this paper is to develop a general understanding, on both practical and conceptual levels, of the factors that contribute to wearout. By "wearout" we refer specifically to the reduction with repetition of the commercial's power to *persuade*, or to engender favorable attitudes toward the product (i.e., brand preference, in contrast to brand awareness). In this paper we discuss the utility of a cognitive-response formulation for the study of message repetition and persuasion. We should note from the outset that much of the research we review here draws upon social-psychological rather than advertisement research, and the actual utility of this approach for practice must be determined in future research. Nevertheless, we report the results of field as well as laboratory research, both of which were designed to maximize internal validity. Moreover, the studies involved a number of different topics and messages, a variety of subjects (community residents as well as university students), and various attitude-measurement instruments. These procedures afford the results of this research some generalizability, although, as we have noted, our purpose here is to explicate what we see as a potentially useful approach for advertising pretesting rather than to argue that the implications we draw from this survey are tested and proven in a

truly applied domain. We begin by reviewing briefly several analyses of the psychological processes underlying exposure effects.

### Major Approaches to Exposure Effects

Carl Hovland and his colleagues stated that "opinions, like other habits, will tend to persist unless the individual undergoes some new learning experiences" [32, p. 10]. This description is accepted widely: attitudes are thought to be *learned* predispositions to respond favorably or unfavorably toward some object or issue. The more important issue is that of identifying the mechanism by which a person comes to accept the advocated attitude. Hovland et al. postulated that "exposure to a persuasive communication which successfully induces the individual to accept a new opinion constitutes a learning experience in which a new verbal habit is acquired" [32, p. 10 (italics added)]. According to Hovland and his associates, changing an attitude simply involves changing a verbal habit. Repetition of a persuasive communication, which enhances the likelihood and extent a person attends to, comprehends, and retains the communicative material (i.e., advocacy), should increase the likelihood or amount of attitude change.

Evidence consistent with this analysis was provided by McCullough and Ostrom [35], who presented several different pictorial advertisements to individuals. The presentations of these different advertisements led to more positive evaluations of the product than a single presentation of any one of the advertisements. This study, however, does not address whether (a) the repeated exposures or (b) the varied advertisements are instrumental in enhancing the regard for a product. Nevertheless, their findings are compatible with Hovland's notion of message learning and attitude change.

Contrary to Hovland et al.'s message-learning formulation is the research showing that repeated presentations of a persuasive message maintain message retention at a high level but reduce its persuasive impact (e.g., [3, 12]). In other words, Hovland's learning model does not accommodate the phenomenon of wearout. Nor can it account for the research showing that repetition can induce *less* rather than more favorable attitudes toward stimuli, even at very low exposure levels [26].

A second major formulation that would appear applicable to the study of exposure frequency is Zajonc's theory of mere exposure [57]. Zajonc reported that a person's attitude toward a stimulus was related positively to its exposure frequency, an effect he attributed to the pleasantness associated with viewing or hearing an increasingly familiar stimulus. Reinterpreting Zajonc's findings, Stang [52] suggested that these attitudinal effects were mediated by the individual's satisfaction in having learned the attributes of the stimulus. Moreland and Zajonc [40] responded by arguing that exposure

frequency independently alters both the subjective familiarity and the recognizability of the stimulus, but their work has been questioned by Birnbaum and Mellers [5], who asserted that a learning reinterpretation of mere exposure research remains viable (cf. [4, 40, 55]).

Regardless of the outcome of this debate, Zajonc's mere exposure theory may have little relevance to the attitudinal effects of repeated presentations of persuasive communications. This limitation was emphasized originally by Zajonc [57] after he reviewed evidence which indicated that his model applied only to *nonassociative* stimuli (e.g., nonsense syllables, Japanese ideographs). Furthermore, Stang's [52] learning perspective of mere exposure, when applied to persuasive communications, is indistinguishable from the formulation of Hovland et al. in terms of predictions for attitude change. Moreover, the research that is inconsistent with Hovland's model is similarly inconsistent with the learning-leads-to-liking and mere exposure hypotheses.

Research employing communicative stimuli has demonstrated in both laboratory [12] and field [38] settings that repeated presentations lead first to increasing, then to decreasing, favorableness toward the advocacy. These observations suggest that individuals change the way they *think about* the advocacy and its arguments as exposure frequency increases. *It seems entirely possible that, up to a moderate number of presentations, the attitudinal effects of an advertisement are affected largely by limitations in the extent to which the content of the message is processed.* This suggests a cognitive response approach.

The cognitive-response formulation for message repetition and attitude change begins as follows: (a) Yielding to or resisting a persuasive advocacy is determined in part by the nature of the idiosyncratic cognitive responses produced by the recipient. (b) The cogency (i.e., convincingness) of the message arguments is an important determinant of attitude formation, attitude change, and wearout, because it affects the type of cognitive responses that are produced. (c) A recipient allocates an amount of processing effort to a communicative stimulus (e.g., message) that is concomitant with both motivation and ability to process the stimulus. (d) Exposure to a persuasive communication provides new opportunities for the recipient to attend to, comprehend, encode, and elaborate upon the message arguments. (e) The total processing effort that is devoted to the message arguments, issue, and advocacy, therefore, tends to increase as repetition increases. Thus, limitations of people's information-processing tendencies or capabilities can be partially overcome by presenting the message repeatedly. The motivational aspect of this formulation is presented in a subsequent section of this paper. First, however, we would like to elaborate upon the notion that the effects of exposure frequency on persuasion are dependent upon *content-based* idiosyncratic thoughts about the advocacy.

## Experiment I: Content-Based Exposure Effects: Determinants of Cognitive Response

A popular counterpoint to the notion that exposure frequency alters topic-relevant thinking and thereby alters one's susceptibility or resistance to persuasion is the idea that the attitudinal effects of exposure frequency result from a variety of *content-irrelevant* cognitive reactions (cf. [50]). For instance, past research on message repetition has confounded the number of presentations and the amount of time given to think about the specific position advocated in the message. Since the work of Tesser and his colleagues (e.g., [53, 54]) indicates that the amount of time given to think about an advocacy per se can alter a person's attitude toward the advocacy, we desired a method of correcting for these attitudinal effects. One possible method would be to increase speed of speech while increasing repetition (and thereby holding time to think constant); however, we sought to develop a method that would avoid confoundings (i.e., that would maintain high internal validity) and that, in addition, would partition out of the attitude and cognitive-response scores the effects of content-irrelevant factors. Attitudes toward the advocacy might also be affected, for example, by satiation with the experimental setting or experimenter. Though such satiation is unlikely, it might affect persisting attitudes. We sought also a means to eliminate from our measures the direct affective consequences of the repeated exposure to an advocacy and to advocacy-related information (e.g., message arguments). What remained could clearly be regarded as content-based persuasion as a function of message repetition.

We decided upon the following method. Three communications for each of two issues were developed. Two of each set of three communications consisted of persuasive arguments supporting an advocated counterattitudinal position, and the remaining communication consisted of neutral information about the topic of the advocacy. (This neutral material neither supported nor refuted the advocated position.) Each subject heard one of these six communications either one, three, five, or ten times in succession. In order to partial out the content-irrelevant cognitive and noncognitive processes discussed above, a corrected score was calculated from the measures of attitude and cognitive response. Specifically, we subtracted from the score of each subject who heard one of the persuasive communications the mean score of the subjects who heard the neutral communication regarding the same issue an equal number of times. Thus, the cognitive and attitudinal responses to the neutral information—which were associated with the advocacy and were affected by exposure frequency, the experimental context, the mere time to think about the advocacy, and so forth—served as the baseline from which the cognitive and attitudinal responses to repeated presentations of a *persuasive message* could be determined. In other words,

we examined the effects of exposure frequency to persuasive arguments that were left after elimination of those effects attributable to repeated presentations of the advocacy and neutral advocacy-related information. What remains is message-content-based exposure effects.

### The two-factor cognitive response model of message repetition

The corrected-score procedure outlined above allows us to examine motivational as well as ability factors in content-based persuasion. The curvilinear relationship between message repetition and attitude change, when addressed previously, has been explained by use of two-factor theories (cf. [30]). Each of the two-factor theories used to describe this relationship posits that the initial increase is caused by factors *unrelated* to the message content (e.g., increased familiarity *per se*). According to these two-factor theories, then, a similar pattern (though differing levels) of persuasion should obtain across exposure frequency for the neutral and persuasive messages. This means that the corrected scores should evince a flat rather than an increasing, then decreasing, effect across exposure levels. This flat effect is expected only if the effects of repetition and persuasive argumentation are additive, as these theories suggest.

The operation of two factors, however, need not imply that cognitive response processes are inoperative. The data from Cacioppo and Petty [12] suggest that moderate exposure frequencies can operate upon an ability factor (e.g., limitations of processing capacity) to influence cognitive response processes and attitude change. In addition, we suspect that motivational factors play a role in this process, particularly at high exposure frequencies (or at somewhat lower exposure frequencies when massed rather than distributed commercial presentations are used). *Motivational forces* have long been implicated in persuasion (e.g., [1, 7, 20, 31]), and they have recently been shown to *guide cognitive response processes in persuasion* [45, 47]. This possibility with respect to message repetition was outlined by Cacioppo and Petty [12], but that study did not provide a strong test of the effects of motivational forces on content-based message elaborations and persuasion.

According to our two-factor cognitive-response formulation for message repetition: (1) repeated exposures to the same message through moderate levels should act primarily to provide additional opportunities for attending to, thinking about, and elaborating upon the message arguments (i.e., primarily ability factors). (2) At high levels of message repetition, however, reactance and/or tedium should begin guiding and *biasing* message elaborations and thereby alter persuasion—in other words, motivational factors

may directly affect cognitive response processes, which then modulate persisting attitude change. Hence, we expected that the relationship between message repetition and persisting attitude change would be curvilinear (increasing then decreasing) across exposure frequencies when very convincing message arguments were used. Moreover, this relationship should emerge even when the non-content-related effects are parialed out—namely, by using the corrected-score procedure. The aim of our first study was to test this hypothesis.

We found in pilot testing that ten successive presentations of a commercial were enough to arouse tedium and boredom even with the best of commercials. Hence, we used exposure frequencies of one, three, five, and ten in our study. Note that any artifactual processes invoked by this massed presentation should occur equally for all messages (e.g., the persuasive or neutral versions). Thus, the corrected score should retain only the content-related cognitive and attitudinal effects of repeated exposure to a *persuasive* message, and the internal validity of this study, as well as its usefulness in selecting from among the possible theoretical accounts of message repetition and attitudes, remains high. In a later section of this paper, a second study using commercials and local residents is reported, the results of which are also suggestive of good external validity for this research.<sup>1</sup>

## Method

### Subjects and procedure

One hundred fifty-nine introductory psychology students were assigned randomly to the cells of a 4 (Exposure Frequency) x 2 (Issue) x 3 (Communication within Issue) between-subjects hierarchical design. All students heard a taped communication over headphones either one, three, five, or ten times without interruption while sitting in the separate cubicles of a language laboratory. The students were told that they were participating in a study on "audio volume and sound quality." Half of the students heard an advocacy that all alcoholic beverages on or near the campus be banned, and the other half heard an advocacy that the driving age be increased to twenty-one years of age. These issues were selected on the basis of pretests, which indicated they were highly involving and counterattitudinal. For each issue, a third of the students heard one of two communications that consisted of five persuasive arguments supporting the advocacy (e.g., "85 percent of the campus violence and crime involves persons under the influence of alcohol"), a third heard the other of two communications that consisted of five different persuasive arguments supporting the advocacy (e.g., "alcohol results in a large number of student parties that are unmanageable for campus security"), and a third heard neutral information regarding the advocacy (baseline

conditions—e.g., “90 percent of the student parties in which alcohol is consumed occur on Friday or Saturday night”).<sup>2</sup>

### Dependent measures

After the final presentation of a message, students anonymously completed a postexperimental questionnaire containing (a) the instruction to list everything about which they were thinking during the presentation(s); (b) four 6-point semantic differential scales used by subjects to evaluate the advocacy (evaluations were determined by summing their responses to the scales, which were anchored by the terms “good-bad,” “pleasant-unpleasant,” “wise-foolish,” “beneficial-harmful”); and (c) the instruction to list all of the arguments or items contained in the communication (see [14]).

Students returned individually to a second laboratory approximately one week later. There they were greeted by a different experimenter and asked to complete a “preexperimental questionnaire” prior to participating in an unrelated experiment. Embedded in this questionnaire were four 11-point Likert-type scales related to the advocacy they had heard the preceding week. Each student’s agreement with the advocacy was determined by summing the responses to the four scales. (The students did not know that their responses were relevant to their earlier participation.) Likert-type scales rather than semantic differentials were used to measure persisting attitudes in order to reduce the students’ suspicion that there was any association between these studies. These scales are correlated and highly reliable (cf. [10]).

### Data reduction

Each of the listed thoughts (cognitive responses) was classified as a counterargument, a favorable thought, or a neutral/irrelevant thought by two judges blind to the experimental conditions and hypotheses. Judged as counterarguments were statements directed against the advocated position, statements that mentioned specific unfavorable consequences, statements of alternative methods, challenges to the validity of the arguments in the message, and statements of affect opposing the advocated position. Counted as favorable thoughts were statements in favor of the advocated position, statements that mentioned specific favorable consequences, statements ruling out alternatives, statements that supported the validity of the message arguments, and statements of affect supporting the advocated position. All other items were rated as neutral/irrelevant thoughts. Similar items were counted as one thought. Judges agreed on more than 91 percent of the ratings; disagreements were resolved through discussion. A third judge, also blind to the experimental hypotheses, scored recall. Items counted as re-

called were those that correctly summarized one of the message arguments (or neutral information items in the case of the neutral messages).

Analyses were planned for the corrected scores for cognitive and attitudinal responses. To summarize, the score of each individual who heard one of the persuasive communications regarding an issue was corrected by subtracting out the mean score of those individuals who heard the neutral message on the same issue the same number of times. This correction seemed appropriate for the measures of attitude and cognitive response, since they referred to the “advocacy,” which did not differ across conditions for any single issue. On the other hand, questions about recall were specific to the content of the different communications. Hence, analyses were planned for the uncorrected (i.e., raw) scores for these measures.<sup>3</sup> All analyses employed the procedure suggested by Winer [56] for hierarchical designs.

## Results

### Effects of exposure frequency on content-based persuasion

We hypothesized that message repetition would lead to increasing, then decreasing, persuasive effectiveness, even though these corrected measures reflected only the cognitive and attitudinal effects of content-related persuasion processes.

### Immediate and persisting attitude change

Analyses of variance were conducted separately for the corrected immediate and persisting measures of attitude. The results were in accord with our hypothesis (see Figure 1). Exposure Frequency affected the measure of persisting attitude change,  $F(3, 91) = 2.93, p < .04$ . Surprisingly, Exposure Frequency had no statistically significant effect on the immediate posttest measure of attitudes ( $F < 1.0$ ), though the general trend is similar to that which was found at the one-week posttest (see Figure 1), and these measures were correlated ( $r = .49, p < .05$ ).

Trend analyses were conducted using Gaito’s [22] procedure for unequal spacing and unequal  $n$ . The analyses revealed one significant trend: as expected, the measure of persisting content-based attitude change was affected quadratically by Exposure Frequency,  $F(1, 91) = 7.02, p < .01$ .

### Cognitive-response and recall measures

We reasoned that these attitudinal effects are attributable to the idiosyncratic cognitive elaborations of the message arguments. Especially com-

elling evidence for this notion would be obtained if parallel effects were observed for the scores of topic-relevant cognitive responses and a dissimilar pattern was observed for message learning. The results yielded this evidence. Exposure Frequency affected the corrected scores of counterargumentation  $F(3, 91) = 6.10, p < .001$  (see Figure 1). Trend tests indicated that counterargumentation was affected both linearly ( $p < .05$ ) and quadratically ( $p < .05$ ) by Exposure Frequency. Overall, counterargumentation decreased as Exposure Frequency increased but, as expected, ten repetitions of the same persuasive communication stimulated counterargumentation.

Learning was also affected by Exposure Frequency,  $F(3, 135) = 20.57, p < .001$ . This main effect, however, was qualified by an Exposure Frequency x Information Type interaction,  $F(12, 135) = 3.45, p < .01$ . This interaction indicated that the message arguments were remembered better than the neutral information after one exposure, but after three repetitions and every repetition thereafter all items were equally and highly memorable. This effect replicated earlier findings that counterattitudinal information on involving topics is processed more extensively than proattitudinal or neutral information [11, 12, 14].

### Exposure frequency affects persuasion by changing motivations as well as abilities to generate message elaborations

In sum, we hypothesized that the attitudinal effects of repeated presentations of a persuasive communication are attributable, at least in part, to the cognitive responses elicited by the message content. Consistent with this notion, we found that repetition led to increasing, then decreasing, acceptance of the advocacy, and that attitudes were related to topic-relevant (but not to neutral/irrelevant) cognitive elaborations. These results replicate the attitudinal effects of message repetition predicted by two-factor theories (e.g., [38, 52]; cf. [30, 50]), but here were obtained after removal of non-content-based effects such as repeated exposure to the advocacy per se, time allowed for thinking about the advocacy, experimental demands of the setting, satiation with the experiment, and so forth. Of special interest is the similarity of the pattern obtained here to Miller's [38] finding in a natural setting of a curvilinear effect for exposure frequency and attitudes. Furthermore, our results were obtained using two different issues and two argument samples within each issue, thus attesting to their generalizability to issues in general. Effects similar to those obtained for persuasion were observed for the measures of cognitive response.

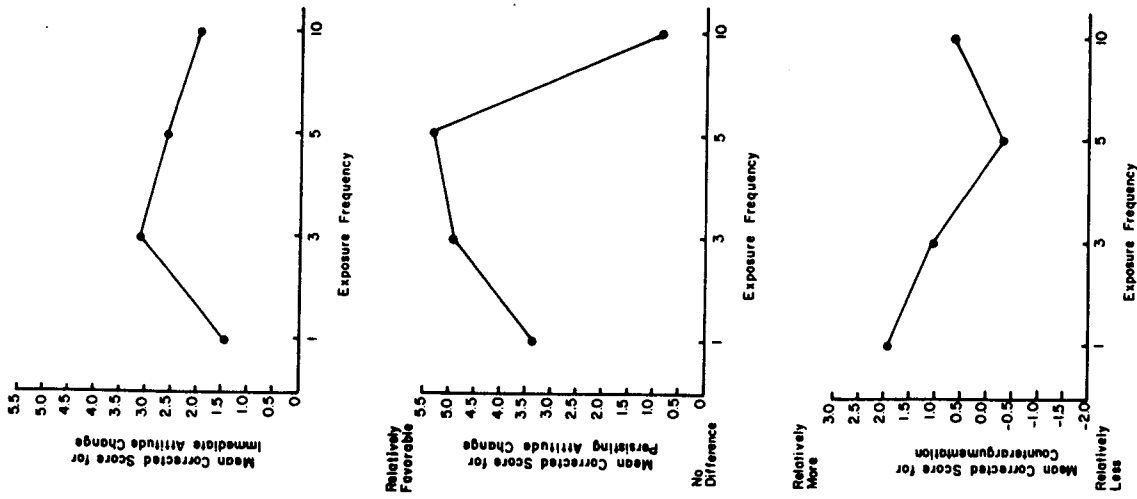


Fig. 1. Effects of exposure frequency on mean corrected scores for cognitive and attitudinal responses.

## Experiment 2: Content-Based Exposure Effects: The Subtle and Varied Effects of Message Content

The first experiment suggested that message repetition operates upon cognitive-response processes and persisting attitudes primarily by its effects on ability (at low to moderate exposure levels) and motivational factors (at high exposure levels). Even the best of advertisements can lose persuasive effectiveness when overexposed. The interesting point of Experiment 1 is that this loss is modulated by the change in the way in which people think about and elaborate upon the advertisement's implicit and explicit message. Nevertheless, there are instances in which *low to moderate* repetition may begin to erode the persuasive effectiveness of an advertisement. Indeed, if overexposure were the only component of repetition that induced resistance to persuasive appeals, the topic would be much simpler. The fact is that repetition sometimes increases, sometimes decreases, and sometimes increases, then decreases the persuasive impact of a commercial, even before motivational factors such as reactance or tedium begin to bias cognitive-response processes (e.g., [49, 50]).

The major purpose of our second study, then, was to examine how exposure frequency operates upon ability factors to produce these effects. Recall that only the cognitive-response model underscores the importance for attitudes of the subtleties of the implicit and explicit message of a persuasive appeal. Strong (i.e., cogent) message arguments should elicit predominantly favorable thoughts, and hence should increase attitude change through moderate levels of exposure. This effect is predicted because the additional processing opportunities provided by moderate exposure frequencies should enhance the positive associations and elaborations generated and thereby increase stable, content-related attitude change. Conversely, weak message arguments should stimulate counterarguments; more opportunities to think about these weak arguments should provide insight into additional counterarguable aspects of the message. Overall, then, repetition of the weak message should engender less rather than more favorable attitudes toward the advocacy. This latter effect is not explicable by either of the learning hypotheses we reviewed above or by the mere-exposure model.

In addition, we hypothesized that the effects of repetition on people's ability to elaborate upon a message can produce quick wearout for particular types of messages. We included a commercial that was constituted of novel but weak message arguments in an effort to demonstrate a wearout effect with moderate exposure frequencies. We reasoned that the novelty of the arguments would initially elicit favorable responses (cf. [9]), but that additional opportunities for thinking about the implications and internal

logic of these arguments would soon lead to rejection of these arguments and of the advocacy.

In sum, wearout may be attributable in part to the interaction between the limitation on a person's information-processing capacity and the nature of the message arguments used to support the advocacy. Thus, (1) repetition of cogent message arguments should sustain a commercial's persuasiveness for a considerable time; (2) repetition of weak message arguments should lead to almost immediate wearout; and (3) repetition of novel arguments that, in fact, don't fit together very well should first increase, then decrease, the persuasiveness of the commercial.

Finally, a number of artifactual explanations have been proposed to account for exposure effects. The most compelling are the demand-characteristics and context-effects models. To avoid the interpretive dilemma these artifacts can cause if they are presented differentially across conditions, we developed commercials and presented them to local residents, and we obtained a delayed measure of the commercials' persuasive effectiveness in what appeared to be a separate survey in a different setting using a second experimenter who did not know what conditions subjects had been exposed to.

## Method

### Subjects and design

One hundred thirty-three men and women between the ages of eighteen and twenty-three from a small community voluntarily participated in a study on the "sound quality" of commercials. The individuals were assigned randomly to the cells of a 3 (exposure frequency: one, three, or five presentations) x 3 (argument type: strong, weak, or novel) between-subjects factorial.

### Materials

The advocated position in each of the communications was that the subscription price of the local newspaper be increased. This price increase was imminent, though it was not public knowledge at the time the study was conducted. Earlier polling of community members showed clearly that such a price increase was unpopular.

Three commercials, each giving the appearance of a telephone interview with a female resident, were developed. Each message consisted of seven questions by the interviewer and responses by the "resident." These question-answer pairings served as the message arguments. The *strong message* consisted of factual information about the benefits subscribers would

receive from the price increase and about the good community service record of the newspaper. The *weak message* consisted of descriptive information about the current newspaper and suggested possible benefits to management that might result from the price increase; new benefits for the consumer were not mentioned. Finally, the *novel message* consisted of questions and answers about a number of new but weak benefits, some of which were subtly contradictory.<sup>4</sup>

### Procedure

Individuals were tested in the separate cubicles of a university language laboratory. Each person was told that he or she would hear a telephone interview regarding proposals for changing certain local business practices and products. The individuals were instructed to listen carefully to a taped interview about one such proposal, and they were told that they would be asked afterwards to evaluate the sound quality of the recording and the performance of the interviewer. Hence, they believed they were aiding us in the production of quality commercials rather than in the study of the persuasive effectiveness of the commercials.

Each individual then heard one of the three messages either one, three, or five times successively.<sup>5</sup> This procedure of successive presentations, though not common in most applications, was considered perfectly natural in the present setting, since successive presentations allowed further scrutiny of the interviewer and tape quality. The individuals appeared interested in the content of the message as well, since it contained information that, though not of apparent concern to the experimenter, was of concern to the residents. Afterwards, subjects completed a questionnaire, which contained the following:

(a) Thought-listing forms. Residents were given 2.5 minutes to list the thoughts that occurred to them during the message(s). Residents then went back through their listed thoughts and placed a plus (+) next to each that supported the advocacy, a minus (-) next to each that attacked the advocacy, and a zero (0) next to each that was neutral or irrelevant toward the advocacy (see [46] for the verbatim instructions and [15] for a thorough rationale and review of the thought-listing procedure).

(b) Message recall. Residents listed all of the message arguments they could recall. A message argument was scored as recalled correctly if the item listed by the resident paraphrased or summarized one of the seven arguments that he or she had heard. All scoring and transcription were performed by persons unaware of the experimental hypotheses.

(c) Sound quality. Residents rated on 6-point semantic differential scales (good-bad; harmful-beneficial) the voice quality and enthusiasm of the interviewer and the sound quality of the tape.

From eight to fourteen days later, individuals were contacted by a second experimenter who appeared to be unrelated to the first experimenter. The second experimenter, who did not know the conditions to which individuals had been assigned, asked a number of questions of each individual as part of a survey. Among the questions individuals responded to was an 11-point rating scale regarding their attitude toward increasing the price of the local newspaper. This measure, which was obtained in an environment free of experimental demands, served as an index of the persisting attitudinal effects of the commercials they had heard the previous week.

### Results

Analyses of variance were first conducted on the delayed posttest for attitudes, in order to test the major hypotheses of the present study. Afterwards, univariate analyses of variance were calculated for each of the measures which had been obtained immediately following the message presentations in the language laboratory.

#### Effects of communication cogency and exposure frequency on persuasion

The major hypotheses of the present study concerned the effects of communication cogency and exposure frequency on persuasion. From the cognitive-response model we derived the unique predictions that strong messages should become more persuasive, weak messages should become less persuasive, and novel (but weak) messages should become more, then less, persuasive with repetition. The analyses supported these predictions; we obtained a highly significant Exposure Frequency x Argument Type interaction on our disguised posttest of attitudes,  $F(4, 124) = 3.21, p < .02$ . We found also a main effect for Argument Type,  $F(2, 124) = 8.99, p < .001$ , which indicated that the cogency of the three commercials had indeed been varied in the intended manner (see Figure 2).

#### Effects of communication cogency and exposure frequency on recall and cognitive response

We next conducted analyses for message recall and cognitive response to assess the effects of the treatments on learning and information processing. *Message-argument recall*

The analysis of variance for recall revealed a main effect for Exposure Frequency,  $F(2, 124) = 13.10, p < .001$ , and an interaction of Exposure Frequency x Argument Type,  $F(4, 124) = 3.24, p < .01$  (see Table 1). Not

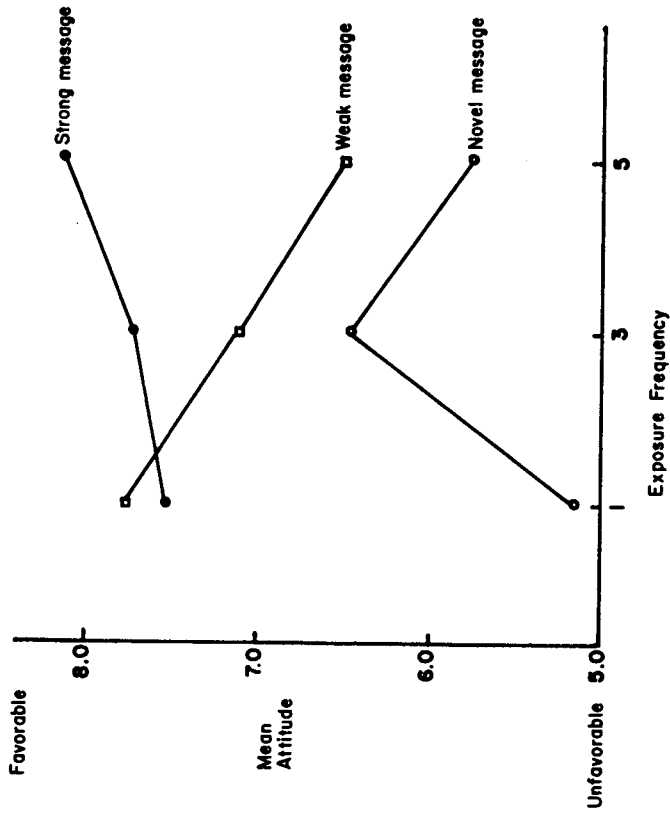


Fig. 2. Effects on persisting attitudes of exposure frequency to strong, weak, and novel (but weak) audiocommercials.

surprisingly, message repetition increased retention of the specific arguments contained in the message. Importantly, however, the retention of the arguments and attitudes toward the advocacy were affected differently by the experimental treatments (see Figure 2 and Table 1). Thus, as we observed in Experiment 1, learning or stimulus recognizability per se does not appear to be sufficient to increase susceptibility to a persuasive communication. This conclusion is in accord with a growing body of evidence that questions the utility of trying to persuade by focusing on making a commercial more memorable (e.g., [12, 25, 33, 43, 47]).

#### Cognitive response

Analyses of cognitive response data indicated that the type of message arguments influenced the nature of the cognitive response generated during the taped presentations as expected: Argument Type affected the number of both counterarguments,  $F(2, 124) = 8.88, p < .001$ , and favorable thoughts,  $F(2, 124) = 5.99, p < .01$ , regarding the advocacy. The generation of neutral/

TABLE 1  
Mean Recall as a Function of Argument Type and Exposure Frequency

	Argument Type and Exposure Frequency											
	Strong					Weak					Novel	
	1	3	5	5.62	3.29	5.32	5.71	4.69	4.94	4.92		
Message-argument recall*	4.50	5.35	5.62	5.62	3.29	5.32	5.71	4.69	4.94	4.92		

\*Each message contained seven message arguments.

irrelevant thoughts was unaffected,  $F < 1$ . The means for these measures are presented in Table 2.<sup>6</sup> Though the attitudes and cognitive responses were not perfectly parallel in some cells, this is likely due to the fact that the cognitive response measure was taken one week prior to the attitude measure. If these measures had been taken closer in time, the pattern of results would likely have been more similar. In any event, these data clearly show that the cogency of the various persuasive messages differed in the manner intended (see the means in parentheses in Table 2).

TABLE 2  
Mean Cognitive Response\*

Argument Type/ Exposure Frequency	Counter-arguments	Favorable Thoughts	Neutral/Irrelevant Thoughts
1	1.29	1.29	2.86
3	1.18	1.94	2.71
5	1.54	1.15	3.69
M	(1.34)	(1.46)	(3.09)
Weak			
1	1.00	0.71	3.14
3	2.00	0.63	2.26
5	1.42	0.64	3.14
M	(1.48)	(0.66)	(2.85)
Novel			
1	2.77	0.54	1.54
3	2.81	0.38	2.94
5	2.23	1.15	2.62
M	(2.60)	(0.69)	(2.37)

\*Entries indicate the mean frequency of that category of cognitive response provided in the thought-listing. Entries in parentheses are the means collapsed across the repetition factor.

### Exposure frequency in advertising: message elaborations matter

Seldom can we consider the person, product, or position that is being promoted in a persuasive communication to be a nonassociative or non-meaningful stimulus to the public. Perhaps for this reason, practical experience (in contrast to several theories) dictates moderate rather than high exposure frequencies to maximize the persuasive effectiveness of each commercial in a promotion. By repeating the same persuasive messages a moderate number of times in a spaced, heterogeneous sequence—particularly messages that are composed with some care so that each elicits favorable thoughts about the advocacy—persuasive impact can be enhanced while saving new production costs. At some point, of course, the rule of “too much of a good thing” operates: the messages lose their persuasive power and further use begins to reverse the gains made in brand preference.

The data from Experiment 2 bespeak a complex but very plausible relationship between exposure frequency and persisting attitude change. We observed different temporal patterns and distinctive overall levels of persuasive effectiveness for the three commercials, even though they (*a*) were supporting the same advocacy, (*b*) were presented under identical conditions, and (*c*) were followed by a one- to two-week delay before attitudes were measured in what appeared to be a separate survey. When strong arguments were employed, repeated presentations produced increasing attitude change. When novel but weak arguments were repeated, the more common increasing, then decreasing, wearout effect on attitudes was evinced. When weak arguments were presented repeatedly, resistance to the commercial message began to develop almost immediately. Wearout, in the sense of declining persuasive impact with each additional exposure, was evident by the third presentation.

### Mediating Explanations for the Attitudinal Effects of Message Repetition

Theoretical models of exposure phenomena in advertising are important because they provide general guidelines for practice. Admittedly, the guidelines at this point are far from exact. What, for example, does it mean to present an advertisement a “moderate” or “excessive” number of times? No model that exists today can assign absolute numbers in place of these descriptive terms. We determined numerical values for these labels by doing preliminary testing and interviewing. Nevertheless, in the hands of knowledgeable individuals who know the products and audience they are working with, qualitative labels such as these can be of great assistance. The knowl-

edge that repeated exposure works well in enhancing attitudes toward nonassociative or nonmeaningful stimuli has important implications for many specific advertising goals (cf. [28]). Similarly, the knowledge that this rule does not hold for familiar or associative stimuli can also help map promotional strategies.

In this section, then, we review a number of mediating explanations for exposure phenomena. Our aim here is to evaluate the parsimony of each model. We critique each in light of past and present research on exposure effects using *communicative* stimuli.

### Message learning

“According to the verbal learning hypothesis, ideas, attitudes, and impressions are based directly on the verbal material that is learned. This hypothesis was dominant in the work of the Yale group with Hovland” [2, p. 33]. A great deal of effort has been devoted to developing memorable commercial messages, in part for the purpose of developing brand preference. This approach has had theoretical underpinnings since Hovland et al. [32] discussed attitudes as if they were simple verbal habits, and it was formalized and elaborated by McGuire [36]. Stang’s [52] notion of learning-leads-to-liking was also based upon a learning analysis of exposure effects. Though Stang’s analysis differs substantially from Hovland’s, its predictions for communicative stimuli are similar. As we noted, the mediating processes predicted to occur by these learning models have generally failed to receive empirical support in the area of message repetition (e.g., [12, 38]; cf. [36]). Furthermore, these formulations cannot account for the empirical results observed in Experiments 1 and 2 where we found that message learning and attitudes were affected quite differently.

This learning approach has been refined recently with the realization that learning that something is said does not mean that what was said is believed (e.g., [19, 21]). The cognitive response analysis, of course, contends that the extent to which counterarguments or favorable thoughts are elicited *determines* the extent to which arguments are accepted or believed. In addition, the cognitive response approach notes the importance of changes in thoughts and beliefs that are not addressed directly in the message. Thus, our analysis contends that message arguments have no direct effects on agreement but rather indirectly affect persuasion by their effects on cognitive responses.

### Mere exposure

Zajonc’s [57] formulation of mere exposure and affect, like the learning models, postulates liking to be a direct function of repetition. Though Zajonc

has not applied his model to associative or meaningful stimuli, our application of it here has found it unable to account for the inverse and curvilinear effects of message repetition on attitudes. Nor can it account for the cognitive and attitudinal effects of exposure frequency observed in Experiment 1 that existed after partialling out non-content-related processes.

### **Demand characteristics**

According to the demand characteristics explanation, the subjects in a study guess the experimenter's hypothesis and then act in a manner that confirms this hypothesis. There are a number of reasons why this explanation fails the test of parsimony, particularly in the present studies. First, the results we obtained were complex; it would be surprising if enough subjects could have intuited the expected findings to obtain these results. Second, the attitude measures, which were the most important measures in the present studies, were dissociated from the first experimenter and experimental setting. Hence, even if subjects had somehow intuited the hypothesis, there would be no reason for them to distort their true attitudes in a delayed, disguised, and separate posttest. Third, between-subjects designs were employed, making it even less likely that subjects could intuit the hypotheses. Fourth, the contextual factors were identical for all subjects (i.e., all subjects heard the same advocacy in the same environmental setting). The only differences between groups were the exposure frequency and the type of materials supporting the advocacy. The obtained interaction of these factors in Experiment 2 provides evidence that the attitudinal effects of message repetition are, at least in part, mediated by content-related processes. Fifth, although these and similar artifactual effects were eliminated from the corrected scores in Experiment 1, the predicted effects remained, thus providing further evidence for the influence of content-based persuasion processes. Finally, the demand characteristics model has been unable to account for a number of previous studies on exposure phenomena [26, 51], and thus lacks parsimony.

### **Context effects**

The context effects explanation questions the external validity of laboratory studies on exposure phenomena. It suggests that people developed attitudes toward the experimenter and setting, which are then transferred to the experimental stimuli (cf. [27]). This model is open to the same criticisms as the demand characteristics explanation. Perhaps the most important of these is that our measures of attitude toward the advocacy in Experiments 1 and 2 were obtained in a separate setting one to two weeks later, as part of a longer survey which was conducted by a different experimenter.

### **Response competition**

Would repeated presentations of a brand name improve consumers' preference for that brand over its competitors? Harrison [29] proposed that *nonassociative* stimuli initially elicit incompatible responses, which arouse tension (negative affect) in a person. With repeated presentations of the stimuli, a dominant response to each emerges and the tension which had arisen from the incompatibility of the previous responses subsides. This resolution of response competition produces increasingly positive regard for the stimulus. Thus, according to the response competition model, there is a direct relationship between exposure frequency and affect. Though this model has generated impetus for considerable research and supportive evidence using nonassociative stimuli (e.g., [34]), it cannot account for curvilinear or negative relationships between exposure frequency and attitudes, which were observed in Experiments 1 and 2. Moreover, several studies using associative stimuli have produced results which are incompatible with the predictions of the response competition model [8, 26]; cf. [27].

### **Cognitive response**

According to our cognitive-response formulation, the *initial* processes mediating the observed attitudinal effects of message repetition are due primarily to ability factors. Through moderate repetitions of a message, each additional exposure provides another opportunity to attend to, comprehend, encode, and elaborate upon the message arguments, their implications, and their associations. Susceptibility or resistance to persuasion is a function of the type and number of cognitive responses produced in response to the message. Thus, the notion is that message repetition through moderate exposure levels affects attitude change by aiding recipients in overcoming the limited human desire and capacity for processing information. When message repetition becomes excessive, and as unbiased analyses cease, motivational factors operate upon these message elaborations, and recipients focus their cognitive energies on countering the now obnoxious appeal.

This model, though perhaps not applicable to nonassociative stimuli, accounts parsimoniously for the effects observed in the present study and in previous research using meaningful stimuli [12, 26]. In Experiment 1, we observed motivational as well as ability forces at work: (a) message repetition influenced the profiles of cognitive and attitudinal responses even when they were corrected for the effects of various non-content-related factors, and (b) at moderate exposure frequencies these cognitive response processes were guided by insights and associations developed by further analyses of the message, whereas they were guided at high exposure frequencies by the

less objective motive of attacking the advocacy. The resulting content-based effects were clearly evident in the corrected measure of cognitive response and *persisting* attitude change.<sup>7</sup>

In Experiment 2, we investigated how repetition and the subtleties of the message content interact to influence cognitive-response processes and *persisting* attitude change, even before motivational forces become dominant. We observed that, with moderate repetition, strong messages, which elicited predominantly favorable thoughts, evoke more positive attitudes toward the advocated price increase. Moderate repetition of weak messages, on the other hand, elicited primarily counterargumentation and resistance to the advocated price increase. It appears that as the residents listened to and thought about these weak arguments more with each repetition, they became more convinced that a price increase was unjustified.

Research on group discussions indicates that novel arguments are often the most convincing to a group [9]. Of course, if a novel argument can be counterargued, the group, given the opportunity, usually does so and rejects it. We observed a similar process operating in the case of the novel message presented a moderate number of times. Residents faced with a commercial consisting of novel but, as a whole, unconvincing arguments responded more favorably toward the advocacy only for the first few exposures. Additional examinations of these arguments following repeated exposures to them provided insight into their counterarguability: accordingly, there followed a sharp decline in the persuasive effectiveness of the commercial.

Before concluding, we should note that the attitudinal and memorial effects we reported here have been replicated in a recent study examining the effects on children of their exposure to repeated commercials for a product [23]. Gorn and Goldberg found, as we did, that recognition of the product and supporting information reached an asymptote after three exposures. In addition, measures of brand preference revealed the same curvilinear pattern as the one we observed: the product (a particular brand of ice cream) was preferred most after a moderate number of exposures to the commercials. This effect was obtained even though the subjects were children and the commercials were interspersed throughout a Flintstone television program. Further, as we have suggested here, frequent exposures to the commercials reduced their persuasive effectiveness, apparently because of the development of tedium or reactance:

Observations of the children suggested that those exposed to the same commercial three or five times became annoyed by the repetitions. Remarks such as "Oh no, not again" or "not another one" were common . . . [23].

The results of the Gorn and Goldberg naturalistic study speak in favor of the external validity of the present research and the utility of the cognitive response formulation.

In sum, these data collectively support the notion that the *persisting* attitudinal effects of message repetition are mediated by the nature and number of *topic-relevant* idiosyncratic cognitive responses that people are *motivated* and *able* to produce spontaneously when confronted by advertisements. These data also underscore the subtle but important effects of advertising copy (message content) on people's thoughts and attitudes about the promoted person, product, or position.

## NOTES

1. The procedure employed here (successive presentations to examine the effects of multiple communicative presentations within a short time span) was based upon a past program of research examining methodological issues in persuasion research. For instance, eight experiments reported by Ronis, Baumgardner, Leippe, Cacioppo, and Greenwald [48] demonstrated that mass presentations of commercial-like messages served a catalytic function for normal persuasion processes and decay. Cacioppo and Petty [12] also found that successive presentations of persuasive messages initiated within a short period processes that normally take much longer to develop. The same procedure was employed here, not because we feel it characterizes the real world, but rather because it affords a practical procedure for testing theoretical hypotheses without sacrificing generalizability. Of course, the final test will come when the hypotheses established here are tested in advertising settings. Early work toward this end is encouraging (cf. [23]).
2. The development of "neutral" messages was important if the present corrections for changes in baseline were to be meaningful. Hence, during pilot testing we developed for each issue a neutral message consisting of items providing information about the issue that were judged consistently by pilot subjects to be neither favorable nor unfavorable toward the advocacy. Additionally, the neutral and persuasive messages for each issue were equated for length and comprehensibility.
3. The issue factor did not alter the effects of either measure of attitude or of any measure of cognitive response, and therefore this factor will not be discussed further. A series of 2 x 3 x 4 analyses of variance on the "uncorrected" cognitive and additional responses revealed a pattern of results similar to that which is reported in the text for the corrected scores.
4. A few examples of the materials we used might be informative. Two "strong message arguments" are: the (paper) plans to use the money to increase news coverage—for instance, by installing a Washington correspondent that would provide up-to-the-minute news coverage of events in our nation's capital; and the management has recently won an award for being the most efficient newspaper organization for its size in the state. Two examples of weak message arguments are: the (paper) plans to use the money in ways similar to those used when they last increased the price; and the newspaper has given a lot of jobs to children as newspaperboys. Two examples from the novel-but-weak message are: the (paper) plans to use the money to increase the advertising space in the paper while at the same time cutting down on excess news coverage; and more advertisements would

be a community service in helping to inform residents about current prices at different stores.

5. The results of Experiment 1 (see Figure 1), pilot testing, and interviewing all suggested that one, three, and five repetitions primarily alter the ability rather than the motivation of people to think about the materials and issues used in the second experiment. Thus, we used these exposure levels in our actual study.
6. Interestingly, there was no difference between the persuasiveness of the strong and weak message at one repetition. This impotency of message content has been observed to hold initially for low to moderately involving topics or issues (cf. [47]), but is overcome by factors, such as repetition, that enable or behoove the person to think about the message and issue.
7. We hasten to add that while counterargumentation may *attenuate* the effects of a set of persuasive arguments, it need not make an individual *totally* resistant to the appeal. For instance, the evaluations of the (counterattitudinal) advocacies in Experiment 1 were more positive when the individuals heard the persuasive rather than the neutral items, even though counterargumentation was greater in the former situation than in the latter. Nevertheless, for any given message, as counterarguing decreased at moderate exposure frequencies the evaluations of the advocacy became more positive; as counterarguing increased at high exposure frequencies the evaluations became more negative.

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## Effects of Product Puffery on Response to Print Advertisements

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A comparative treatments experiment designed to test the relative effects of product puffery in a print advertisement against the effects of accurate and understated print advertisements in a product trial situation was executed. The results indicate that the use of puffery leads to several negative effects. The use of puffery was found to produce a negative change in (1) evaluations of the particular advertisement and sponsoring company; (2) message credibility; and (3) intent to purchase the advertised product. Understatement of product value, however, was found to produce a positive effect on these variables once subjects had used the product.

### Introduction

Research interest in advertising puffery has grown recently in an attempt to reconcile contrary opinions held by the federal government, the courts, advertisers, and scholars concerning its effects and legal status. Generally, the law has permitted puffery on the grounds that such claims are perceived as sellers' opinions and not as factual statements. It is assumed that reasonable consumers do not rely on puffery when they make purchase decisions and that therefore they are not deceived [12, p. 136; 16, pp. 1-2; 19, p. 26]. Some researchers, however, feel that consumers do rely on puffery and are deceived. Oliver and McAdams claim that although puffery does not necessarily involve factual statements, it does imply the existence of facts. It is argued that this "allusion to fact" in puffery has the same effect as deception [16, p. 6].

An experiment conducted by Shimp provided indirect support for the argument that puffery is potentially deceptive. Shimp found that audience members draw inferences beyond the manifest content of an incomplete claim and therefore might be misled by puffery [24]. Rotfeld found that