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Journal of Consumer Research, Inc. The Effects of Television Commercial Repetition on Cognitive Response and Message Acceptance Author(s): George E. Belch Reviewed work(s): Source: Journal of Consumer Research, Vol. 9, No. 1 (Jun. , 1982), pp. 56-65 Published by: The University of Chicago Press Stable URL: http://www. jstor. org/stable/2488937 . Accessed: 17/08/2012 06: 48 Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at . http://www. jstor. org/page/info/about/policies/terms. jsp .

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GEORGEE. BELCH\* The cognitiveeffects of advertisingrepetitionare examined by consideringthe impactof three levels of TV commercialexposure withina one-hour program. Attitudesand purchase intentionswere not affected by message repetition, although cognitive responses became more negative as exposure frequencyincreased. The relationship between cognitiveresponses and the message acceptance measures was relatively constantacross the three exposure levels. effects of repeated exposure to a persuasivecommunicationhave long been of interest to social psychologists and marketers.

However, research concerning the effects of persuasive message repetition on cognitive processes has been limited in both socialpsychologyand marketing. In social psychology, much of the repetition researchhas been performedin contexts thatdo not involve communication. For example, Zajonc's (1968) theory of mere exposure suggests that a person's attitude toward a stimulus is positively relatedto exposure frequency(an effect Zajonc attributedto the pleasantness associated with hearing an increasinglyfamiliar stimulus).

However, mere exposure theory may have limited relevance to the attitudinal effects of persuasivemessage repetition, as this model applies primarilyto simple nonassociative stimuli, such as nonsense syllables or Turkish alphabet characters. Persuasive messages tend to be more complex stimuli and, in the case of advertisingmessages, the focus is generally on objects or ideas presentedin the message ratherthan on the advertisementitself. With the exception of a study by Cacioppo and Petty (1979), the cognitive and affective effects of repeated exposure to persuasive communicationshave generatedsurprisinglylittle researchin social psychology.

Attemptsto determinethe effects of advertisingmessage repetitionhave appearedfrequentlyin the marketingliterature (Craig, Sternthal, and Leavitt 1976; Grass and Wal- The lace 1969; Mitchell and Olson 1977; Ray and Sawyer 1971; Sawyer 1973; Silk and Vavra 1974; Winter 1973). However, most researchinto the effects of advertisingrepetition has focused primarilyon outcome measuressuch as recall, attitude, and purchaseintention, ratherthanconsideringthe underlying processes that might shape and determine reaction to an advertisingmessage following multiple exposures.

While knowledge of the repetition function for a persuasivemessage withrespectto these outcome variables is important, the cognitive effects of message repetition must also be consideredif insight is to be gained in understandinga recipient'sreactionsto a message following multiple exposures. The purpose of this investigation is to study the effects of repeated exposure to a persuasive communication by examining the impact of television commercial repetition on cognitive processing.

Cognitive response measures (Greenwald 1968; Petty, Ostrom, and Brock 1981; Wright 1973) as well as traditionaloutcome measures such as recall, attitude, and purchase intention are used to examine the effects of multiple message exposures on recipients. This study also examines changes in the relationship of cognitive response mediators to measures of message acceptanceresultingfrom multipleexposuresto a commercial message. RELEVANT LITERATURE \*George E. Belch is AssistantProfessorof Marketing, College of Business Administration, San Diego State University, San Diego, CA 92182.

The author wishes to acknowledge the financial support provided by a doctoraldissertationgrant from the AmericanMarketingAssociation and by researchgrantsfrom the MarketingScience Instituteand the University of California, Los Angeles. Appreciationis also expressed to Rich Lutz and James Bettmanfor their comments on an earlierversion of this manuscript and to two anonymousreviewers for their insightful comments and recommendations. The effects of advertising repetition on outcome measures such as attitude and purchase intention have been examined in a numberof studies.

Winter(1973) found that exposure to the commercials decreased the distance between attitudes toward the advertisedbrand and the ideal brand. However, diminishingreturnswere found, since the greatestamountof attitudechange occurredduringthe first two exposures. Also, exposure had a significanteffect only on individualsinitially unfamiliarwith the advertisedbrand 56 ? JOURNAL OF CONSUMERRESEARCH\* Vol. 9 0 June 1982 EFFECTSOF TV COMMERCIAL REPETITION and it was positively related to brand familiarity for the relatively new brandonly. Ginter(1974) found that either overall attitude change nor brand choice was affected by the numberof message exposures. Null effects of advertising repetition were also found in a study by Mitchell and Olson (1977): repetition of two types of print ads had no effect on belief strength, attitude, or purchaseintention. Several studies have examined the effects of multiple exposure in conjunction with varied advertising appeals. Ray and Sawyer (1971) found that repetitionof six soft-sell " nongrabber" advertisementsproduced increases in purchase intention, while intention was not increasedby repetition of hard-sell " grabber" ads.

Similar results were found in-a study by Silk and Vavra (1974), who examined reactions to hard-sell and soft-sell radio commercials. Gorn and Goldberg (1980) examined the effects of repeated commercialexposure on eight- to ten-year-oldboys by varying the numberof commercials seen in the context of a half-hourprogram. Subjects viewed the commercials eitherone, three, or five times. However, some of the multiple-exposure condition subjects viewed the same commercialrepeatedly, while otherssaw a differentcommercial for the new brandeach time.

Gorn and Goldbergfound that moderateexposure (threerepetitions)resultedin the highest level of brandpreference, providedthat the same commercial was not seen each time. 57 Cacioppoand Petty (1980) tested the viability of the twostage cognitive response model in two other repetitionexperiments. In the first experiment, the cognitive response measureand a persistingmeasureof attitudechange (taken one week later) were affected in the curvilinear manner suggested by the two-factor model.

In the second experiment, they predicted-and found-an interactionbetween exposure frequency and the nature of the argumentsused on a persisting attitudechange measure. Strong argumentbased messages became more persuasive with repetition; weak argumentmessages became less persuasivewith repetition; and novel messages became more, then less persuasive with repeatedexposure. Calder and Sternthal (1980) measured cognitive responses after commercials for two products; one product and was unfamiliarto the participants one was well known.

They found that increased frequency of exposure led primarilyto more total thoughtsfor the unfamiliarproductand to an increasein negative thoughtsfor the well-knownproduct. TheoreticalAccounts of RepetitionEffects While several theoreticalexplanationshave been offered for repetitioneffects, the one that appearsto be most congenial for advertisingmessage repetition is some form of Berlyne's (1970) two-factor theory. Berlyne proposed a nonmonotonic inverted U-curve relationship between familiarity and liking.

According to Berlyne, two separate and opposing psychological processes, positive habituation and tedium, operatesimultaneously. Positive habituationis similar to a reduction in response competition: exposure results in a reductionin arousaldue to uncertaintyand conflict and thus increases liking. Tedium also increases with exposure and results in a less pleasurablefeeling toward the stimulus. Berlyne suggests that the relative strengthof each factorvaries as a functionof exposureto the stimulus, with the habituationprocess having the greaterimpact on affect initially, while tedium and disliking occur at higher exposure levels.

Stimulus complexity and sequence heterogeneity slow the positive habituationprocess; thus tedium occurs at higher exposurelevels for complex, variedstimuli and at a relatively low frequency for simple, nonvaried stimuli. An extension of Berlyne's two-factor theory was proposed by Stang (1973, 1975), who argued that repeated to exposureprovidesmore opportunity learnaboutthe stimulus and that because this learning is rewarding, positive affect results. However, continued repetition beyond that necessary for initial learningleads to boredomor satiation, and repeated exposure ultimately produces negative affect toward the stimulus.

A similar explanationfor repetitioneffects was proposed by Cacioppo and Petty's (1979) two-stage attitudemodification model. They argue that repetition of the message to providesrecipientswith more opportunity elaboratecognitively upon message content and to realize the favorable implicationsand cogency of the argumentsused in the mes- Repetition and Cognitive Response McCullough and Ostrom(1974) examined the effects of repeatedexposure by having subjects view five similar ads that used the same basic appeal, but differed in the order and phrasing of the message arguments.

Cognitive responses were measuredimmediatelyafter each exposure to the advertisements. They found that repetition resulted in a significantpositive effect on cognitive response activity, as subjectslisted more positive thoughtsand fewer negative thoughts with repeatedexposure. Cacioppo and Petty (1979) examined the effects of repeating messages that were either consistent with or contraryto recipients' initial attitudeon cognitive response activity. They found that agreementwith the message position increased and then decreased as exposure frequency increased.

The cognitive response patternfollowed a similar curvilinear relationship as favorable thoughts showed an increase followed by a decrease, while counterarguments showed a significant decrease followed by an increase. Analysis of the cognitive response measures also revealed that the counter-attitudinal message evoked a greaternumber of topic-relevantthoughts and fewer neutralor irrelevant thoughts than the proattitudinal message. Cacioppo and Petty interpretedthese results in terms of a two-stage attitudemodificationprocess.

Accordingto this model, repetitionof the message providesmore opportunity for cognitive elaborationupon the specific argumentsand realizationof theirfavorableimplications. At high exposure levels, however, tedium and/orreactancelead to an attack against the message by the receiver. 58 sage. However, in the high exposure conditions, it is very likely that tedium and/orreactancewill develop, leading to a decline in affect. Sawyer (1981) has suggested that Berlyne's two-factor theory is consistent with results concerning the repetition effects of advertising.

Sawyer suggests that advertisements and other persuasive messages in contexts of obvious manipulative intent may elicit a majority of defensive responses-such as counterarguments and source derogations-at the outset. Once expressed, these defensive responses may dissipate and allow other, more objective evaluations and associations to occur. However, high exposure levels would ultimately result in satiation and negative reactionsto the message.

The first question of interest is whetherthe inverted Ucurve predictions offered by Berlyne's two-factor theory and Cacioppo and Petty's two-stage attitude modification process model occur with multipleexposuresto a television commercial. Most of the studies extant have only examined outcome measures of effectiveness, providinglittle insight into the cognitive processing that underliesthese reactions. The studies that have utilized cognitive response measures have produceddivergent results, primarilybecause of the methodologicaland proceduraldifferences among them.

It will be difficult to arrive at any generalizationsconcerning the effects of persuasive message repetition on cognitive processing until more empiricalevidence is produced. The firsthypothesisto be tested in this studyconcernsthe effects of commercialmessage repetitionon cognitive responseand message acceptance: Hi: The favorabilityof message acceptanceand cognitive responses to a television commercial increases with moderate levels of exposure, then declines following high levels of exposure. THEJOURNAL CONSUMER OF RESEARCH curring during the first few exposures to it.

Krugman's (1972) notion of only three message exposures being sufficient to stimulatea buying decision is relevanthere. According to Krugman, the very first exposure (defined as actualattentionby the consumer)is dominatedby a " What is it? " type of response, whereby the message recipient attemptsto define and understandthe advertisingstimulus and to determine whether the message is of any use or interest. Krugmansuggests that much of the needed reduction in response competition occurs during this first exposure and that the second exposureevokes a more evaluative and personal " What of it? reaction, which determinesthe message's ultimate ability to persuade. If any meaningful response occurred earlier, the third exposure then acts mostly as a reminderto the recipient. The third exposure is also the beginning of disengagement or withdrawalof attentionfrom the task. Krugmansuggests that more than three exposures to a message essentially repeat earlier exposure effects. While no direct test of Krugman's conjecturehas been conducted, there is indirect evidence that is relevant.

A study by Krugman(1968) of eye movement explorationof print ads indicated that peak effectiveness occurred after two or three exposures, while Grass and Wallace's (1969) work with CONPADD response indicatedthat from two to 1 four exposures are optimal. Otherevidence consistentwith Krugman's notion comes from a study by Goldberg and Gorn (1974). Also, Cacioppo and Petty's (1979) finding that topic-irrelevant ideation increased as exposure frequency increasedsuggests that the importantprocessing of a message takes place during initial exposures. This review suggests that the strengthof the relationship between cognitive responses and message cceptancemeasuresshould increasefrom low to moderateexposurelevels, since more detailed and evaluativeprocessing will occur as message recipients become familiar with the commercial message. At higher exposure levels, however, the tedium and/or reactance associated with message satiation would inhibit and/or interfere with subsequent informationprocessing activity and resultin a weakeningof the relationship between cognitive response and message acceptance. Cognitive processing at higher levels of exposure may consist ideationmore thanof relevantprocessing of topic-irrelevant and evaluation of the message arguments.

The following predictionsconcerningthe effects of television commercial message repetition on the relevancy and mediatingrole of cognitive responses will be examined: H2: The frequency of topic-irrelevant ideation increases as exposure to a television commercial increases. 'CONPADD (ConjugatelyProgrammedAnalysis of Advertising)measures attentionto commercialsby using an operantconditioningprocedure whereby subjects operate either a foot or hand device in orderto receive the video and audio portionsof anadvertisement.

The subject'seffort thus becomes a measure of interest and attentionto the message in either the audio or video mode. Effects of Repetition on the MediatingRole of Cognitive Response Also of concern in this study are the effects of message repetitionon the mediating relationshipbetween cognitive responses and message acceptance. The issue of interest here is whethercognitive responseselicited afterhigh levels of message exposure mediate affective reactionto the message. Most studies of repetition effects have focused on dependentmeasures, such as recall, attitude, and purchase intention.

In these studies, the cumulativeeffects thatresult from repeatedexposure to the message may be capturedby using these " outcome" measures. However, this may not be the case for cognitive response measures. The detailed processingthat truly determinesthe message recipient'sreactionto the message may take place duringinitial exposure to the advertisement. Theorizingconsistent with this position has been offered by several researchers. For example, Leavitt (1974) has suggested a " strong effects" hypothesis, which suggests that the effectiveness of an ad depends on the events oc-

EFFECTSOF TV COMMERCIAL REPETITION H3: The strength of the relationshipbetween cognitive response and message acceptance measures increases with moderatelevels of exposure, then decreases at high levels of exposure. 59 thoughts. 3After completingthe cognitive responsetask, the subjectswere asked to complete a programevaluationform and a set of postmeasuresconcerning issues dealt with in the program. After completing these measures, subjectswere asked to respondto dependentmeasuresconcerningmessage acceptance and reception.

Two dependentmeasures of message acceptancewere used in this study: attitudestoward using the new brandof toothpasteand purchaseintentionsfor the new brand. Subjects' attitudeswere measuredon four semantic differentialscales (good-bad, wise-foolish, favorable-unfavorable, beneficial-harmful). Subjects' responses to the four scales were averaged to arrive at the attitude score used in the analyses. Intentionto try the new brand of toothpaste was measuredon three semantic differential scales (likely-unlikely, probable-improbable, possibleimpossible). The purchase intention measure used in the analyses was calculated by averagingthe three scales.

Two measuresof message receptionwere employed. An unaidedrecall measurewas takenby askingthe respondents to write down as much as they could rememberaboutwhat was said in the commercial. The recall score was then formed by counting the number of correct claims for the productlisted by the subject. The aided recall measureconsisted of six multiple-choicequestions aboutspecific points in the commercial. METHOD Overview The data for this study were collected as part of a laboratoryexperimentexaminingthe effects of advertisingmessage structure and repetition on cognitive response and message acceptance(Belch 1981). A 2 x 2 x 3 betweensubjectsdesign was used with type of message (comparative or noncomparative), message-sidedness (one- or twosided), and repetition(one, three, or five exposures) as the factors. Commercialsfor a new, fictitious brandof toothpaste were produced to serve as message stimuli for the study. The basic text for the four commercialsis shown in the Appendix. The data used to test the repetitionhypotheseswere compiled by combiningthe resultsfor the four treatment groups at each of the three exposure levels.

There were no significant interactionsbetween the message structure factorsand exposure frequencyfor the dependentvariablesof interest. Subjects and Procedure The sample consisted of 260 persons recruitedfrom two churchgroups in the Los Angeles area. Data collection was spread over 10 evenings during a two-week period. Upon arrival at the research setting, the subjects were given a brief statementconcerningthe reasonfor theirpresenceand were then randomly assigned to one of the three experimental treatments being used during that session.

One hundred subjects were assigned to both the one- and the three-exposureconditions, while 60 subjectswere assigned to the five-exposurecondition. The smaller cell size in the five-exposure condition was due to cost limitations in attaining additionalsubjects. were readto the subjectsinformingthem that Instructions they were participatingin a researchprojectevaluatingthe content of television programmingand that they would be asked to evaluate an episode of Quincy. The subjects were also told they would be asked questions about the commercials.

The subjects completed the set of premeasures, which included demographicquestions, a television viewing profile, and premeasuresconcerning issues dealt with in the program; the one-hourprogramcontainingthe stimulus commercial(s) was then shown. Immediatelyafter the program ended, the subjects were read the cognitive response instructionsand were given two minutesto list their Categorizationof Cognitive Responses The cognitive response classificationscheme used in this study included three categories of thoughts: product/mesevaluations, and sage-relatedevaluations, repetition-related evaluairrelevant thoughts.

The product/message-related tions included the cognitive response categories of counterargument, supportargument, source derogation, and curiosity thoughts as defined by Wright (1973), as well as the categories of simple dissaffirmationsand simple affirmations describedby Beaber (1975). An additionalcategory, source bolstering, was also used. This categorizationis the of positive counterpart source derogation. evaluations included any thought that Repetition-related addressedthe fact that the commercialwas seen more than one time in the program.

The use of the repetition-related categorizationmay be useful in analyzing message recipients' reactionto multiple message exposures duringa short time period, such as a one-hourprogram. Other studies of repetitionandcognitive response(CacioppoandPetty 1979; Calderand Sternthal1980; McCulloughand Ostrom 1974) have not distinguishedthoughts reflecting reactions to the message per se from thoughtsthat might be relatedto multiple exposures to the same message.

The final cognitive response category was the irrelevantcategory, which in3The cognitive response instructionsused in this study requested the subjects to list the thoughtsthat occurredto them while viewing the commercial about the product and their reactions during the commercial to what was said about the productby the advertiser. 2A complete descriptionof the method employed in this study is available elsewhere (Belch 1981). In the interest of brevity, only a summary will be presentedhere. 60 cluded those statements that did not reflect any relevant evaluation of the advertisingmessage or of the advertisement itself.

A three-judgepanel was used to code the cognitive response protocols. The judges were given operationaldefinitions of the three response categories and were trainedin the applicationof these definitions until each had a good of understanding the coding scheme and coding task. The basis for the final rating of each cognition was a modal ratingof the threejudges. Interjudge reliabilities, calculated for each response category separately, rangedfrom 0. 69 to 0. 95. THEJOURNAL CONSUMER OF RESEARCH FIGURE AND NEGATIVE MEANNUMBERS POSITIVE OF COGNITIVE RESPONSESFOR EACHLEVEL REPETITION OF 2 (1. 77) Total Negative 1. 5 (1. 32) (1. 04) Total Product/Message (1. 15) Related Negative 1 (. 96) Total Positive RESULTS The first hypothesis concerns the effects of commercial message repetitionon the message acceptancemeasuresof attitude and purchase intention and on the cognitive response measures. The mean attitudinal scores for the one-, three-, and five-exposureconditions were 3. 87, 4. 11, and 3. 77, while the mean purchaseintentionscores were 3. 24, 3. 60, and 3. 33. An analysis of variance performedon the message acceptancemeasures showed no significanteffect of repetition for either attitude or purchase intention, F (2, 257) = 1. 6 and 0. 89, respectively. The means for the numberof favorableand unfavorable thoughtsgeneratedby subjectsin each of the threeexposure conditions are graphedin the Figure. 4 An analysis of variance revealed that the increase in the numberof negative thoughts across the three levels of repetitionis significant, F (2, 257) = 9. 93, p < 0. 001. Pairwisecomparisons, using a Scheffe test, indicated that the difference in negative thoughts was not significant between the one- and threeexposureconditions, but was significantbetween the threeand five-exposure conditions (p < 0. 5). The Figure also shows that favorablethoughtsremainedrelatively constant across the three exposure levels. An analysis of variance for the favorable thoughts measure was nonsignificant, F (2, 257) = 0. 69. The resultspresentedabove are not supportiveof the first hypothesis. The message acceptancemeasures(attitudeand purchase intention) did not show the inverted U-curve relationshippredictedby Berlyne's (1970) two-factortheory and Cacioppo and Petty's two-stage attitude modification model.

The cognitive response results also fail to support the first hypothesis because negative thoughts increased across the three levels of exposure, while positive thoughts remainedrelatively constant. One possible explanationfor the increase in the number of negative thoughts across the three levels of repetitionis that multiple exposures to the message within the one-hour programmay have resultedin satiationandthe development 'The favorable and unfavorable thoughts measures were derived by combining those cognitive responses that were positive and negative in valence, respectively.

Thus, favorable thoughts representthe sum of all source bolstering, support arguments, and simple affirmations. Unfavorable thoughts representthe sum of all counterarguments, source derogations, simple disaffirmations, and repetition-related negative comments. l:; . v~~~~~~. 3 ( 53) (. 63) (. 63) I 0 I , I 1 5 NUMBER OF EXPOSURES 3 of reactanceby the subjects. This negative reactionto message repetition could be expressed through negative repecontition-related thoughtson the partof multiple-exposure dition subjects.

To determinewhether the increase in negative thoughts across the three levels of repetition was due to the repetition-relatedthoughts produced by the message recipients, these responses were omitted from the composite of unfavorableresponses and the effect of repetitionon the number of product/message-related negative thoughts was examined. The means for the numberof negative product/message-relatedthoughtsare graphedin the Figure. A one-way analysis of variancerevealed that these differences in negative product/message-related thoughts were not significant, F (2, 257) = 0. 5. Thus, the increase in negative thoughtsacross the three exposure levels was due primarily to the recipients' negative reactions to message repetition, ratherthan to negative evaluations of message content. Hypothesis two concerns the effect of multiple message exposure on the generation of topic-irrelevant thoughts. Topic-irrelevantthoughts were defined as those responses that do not represent an evaluation of the message arguments or of the advertisementitself. The mean numberof irrelevantthoughts for the one-, three-, and five-exposure levels was 0. 53, 0. 34 and 0. 3, respectively. The differences in irrelevantthoughtsacross the threeexposurelevels were not significant, F (2. 257) = 1. 99. Contraryto the second hypothesis, it appearsthat message recipientsin the conditions did remainactive in attending multiple-exposure to the commercials, ratherthan tuning them out and producing cognitions that were unrelatedto the message. Relationshipof Cognitive Response to Message Acceptance To examine the relationshipof the cognitive responses generatedby subjects at the various exposure levels to attitude and purchase intention, several compensatory

EFFECTS OF TV COMMERCIALREPETITION TABLEI RELATIONSHIPOF COGNITIVERESPONSE AND MESSAGE RETENTION MEASURES TO MESSAGE ACCEPTANCE BY EXPOSURE LEVEL Single exposure Attitude Model 1 Purchase intention Three exposure Attitude Purchase intention Five exposure Attitude 61 Purchase intention Y2(SA+SB+SAf) - Y. (CA SD + SDf) + Model 2 . 327b . 323b . 481 b , 345b . 491 b . 236c Y2(SA+SB+SAf+RRP) - Y. (CA. + + SDf+ RRN)8 SD Retention Aided recall Unaided recall . 327b . 323b . 468b , 339b . 522b . 258c . 021 . 086 . 065 . 129 . 014 . 010 . 028 . 159 . 001 . 121 . 009 . 081 SAf = Simple Affirmations; SDf = Simple Disaffirmations; RRP = Repetition Related Positive; RRN = Repetition Related Negative; SA = Support Arguments; CA = Counterarguments; SD = Source Derogation; SB = Source Bolsters. bp < 0. 01 Cp < 0. 05 weighting models (cf. Wright 1973) were developed from the cognitive responses. These models, which are shown in Table 1, are based on an underlying assumption that message recipientsprocess cognitive cues in a mannersuch that opposing cues linearly balance each other. These compensatory models yield a measure of " net directionalimpact" of the cognitive mediators.

Model 1 includes the product/message-related cognitive cues using the difference between the amountof positive ideation and negative ideation engaged in by the message recipients as the predictor of message acceptance. Model 2 adds the repetition-related thoughts to the model and incorporatesall of the relevant cognitions into the cognitive response index. The relationships between the message retentionmeasures(unaidedand aided recall) and attitudeand purchaseintentionwere also examined. Simple regressions were performedusing each model as a predictorof the message acceptancemeasures.

The results of these analyses, which were performedseparatelyfor each exposurelevel, are shown in Table 1. This table shows that the cognitive response models are significantly related to the message acceptancemeasuresacross all three exposure conditions. However, the aided and unaided recall scores are not relatedto either attitudeor purchaseintentionat any of the exposure levels. As can be seen in Table 1, the relationshipof the cognitive response models to the attitudinalmeasure of message acceptanceis strongerin the three-exposurecondition than in the single-exposurecondition, as predicated.

However, the differences in these correlationsfor the two exposure levels are not statistically significant (t = 1. 32, p < 0. 10). 5 Table 1 also reveals that the magnitudeof the relationshipbetween the cognitive response models and attitude does not show the hypothesizeddecline between the 5Comparison these correlationcoefficients was made using the folof lowing test statistic: three- and five-exposure conditions, but remainsrelatively constant. The relationshipbetween the cognitive response models and purchase intention across the three exposure levels is also shown in Table 1.

The correlationsdo not show the predicted increase between the one- and three-exposure conditions. There is an attenuationin the correlationsbetween the three- and five-exposure conditions; however, these differences are not significant(t < 1). These results fail to supportthe hypothesizedchanges in the relationshipbetween cognitive and message acceptance across the three exposure levels. Table 1 also indicatesthat differences exist in the relationshipsbetween cognitive response and the attitudinalmeasure of message acceptance and between cognitive response and the purchaseintention measure in the multiple-exposureconditions.

There is an attenuationin the correlationof cognitive response to message acceptance when purchase intention, ratherthan attitude, is the message acceptance criterion. Wright (1973) found a similar attenuationbetween cognitive response and a behavioralintentionversus an attitudinal measureof message acceptance. The attenuationfound in this study may be due to the fact thatbehavioralpatternsfor a productsuch as toothpasteare likely to be well developed. Thus, favorable or unfavorablecognitive reactionsto the message may be related to affective position toward the new brand, but would not necessarily impact on intentionto buy the new brand.

I + Vm 1 Vm I/ ~1 lNm-3 l/2 In - l/2 In 1 I + Vf 1- Vf 3 t= Nf- where Vm and Vf denote the correlationcoefficients for each group and Nm and Nf denote the size of each group. This statistic makes it possible to test the equalityof two correlationcoefficients using a t test (Kleinbaum and Kupper 1978). 62 THEJOURNAL CONSUMER OF RESEARCH sage argumentsand then developing an attitudetowardthe new brand, but ratherwere using the retainedargumentsto support a preformed affective position.

This explanation may be particularlyplausible in a low-involvement advertising situation(which one might argue was the case in this study) where global affect, rather than attribute specific information, providesthe basis for consumerevaluationand decision making (cf. Olshavskyand Granbois1979; Wright 1976; Zajonc 1980). The two perspectives regarding the mediating role of cognitive response suggest differentcausal patternsamong the message acceptance measures and cognitive responses following multiple exposure to a message.

The first explanation argues for the traditionalmediatingrole of cognitive responses, whereby the flow of causal effects originates with repetitionand moves throughcognitive responses that mediateattitude, which in turnmediatespurchaseintention. The competingexplanationsuggests that the flow of effects originates with repetition and moves successively through attitude and purchase intention, which in turn influences cognitive response. This causal flow suggests thatcognitive in responses, particularly the multiple-exposure conditions, are the result of preformedaffect towardthe new brand.

To examine the two competing explanationsof the relationships among the variables, a testing of alternative model forms was undertaken. The tenabilityof each causal model was tested by attemptingto reproducethe original correlationmatrix among the four relevant variables (repetition, cognitive responses, attitude, and purchase intention). Examination of the reproducibility of the original correlationmatrix provides evidence in supportof a proposed model configuration also allows for a comparison and of other alternativeflows.

A techniquedeveloped by Simon (1957) for testing simple linear flows of causation was used to examine the relationshipamong these variables. This techniquefor testing a proposed causal flow was used by Lutz (1978) in examining the relationshipsamong beliefs, attitude, and behavioral intention-a problem similar to the presentone. Simon developed a precise set of predictionsfor the magnitudeof correlationbetween nonadjacent pairsof variables in the hypothesized flow of causation, based on observed correlationsbetween adjacent pairs of variables.

Specifically, the predicted correlationbetween any two nonadjacent variables is equal to the product of all the pairwise correlations between adjacent intervening variables. For example, in the traditionalcognitive response causal sequence (repetition-- cognitive response-> attitude-> intention), Simon's model would predictthat the simple correlationbetween repetitionand intentionwould be equal to the simple correlationsof repetitionand cognitive response multiplied by the simple correlationof cognitive response and attitudemultipliedby the simple correlationof attitude and intention.

Comparisonof predicted and actual correlations provides a measure of " fit" for the theoreticalexplanations being applied to the data. While this mode of analysis cannot prove that a particularcausal sequence is correct, it is useful for testing competing explanations. Cognitive Responses: Mediatorsor Productsof Message Acceptance? A basic assumptionin using the cognitive response approachto studying communicationeffects is that the spontaneous thoughts generated by the message recipients causally mediate affective reactions to a persuasive message.

The assumptionthat cognitive responses precede and influencethe formationof attitudesand intentionshas been made in most cognitive response studies and has been directly tested in several investigations (Cacioppo and Petty 1979; Osterhouse and Brock 1970; Petty and Cacioppo 1977). This study assumed that cognitive response cues generated by the message recipients mediate the effect of repetition on message acceptance, since subjectsin the multipleexposure conditions had the opportunity to become acquainted with the message arguments and had plenty of time to elaborate cognitively upon them. Thus, the responses generatedby the multiple-exposurecondition subjects would be based on the cogency of the message arguments and their reactionsto these arguments, ratherthan on a general, overall impressionof the productand/orcommercial. Evidence in supportof this position is offered by the strong relationshipbetween cognitive response and attitude in the multiple-exposureconditions. There is, however, an alternativehypothesis to the argument that cognitive responses mediate the effect of repetition on message acceptance.

It may be that the thoughts producedby the message recipientsare not really mediating acceptanceof the message, but ratherare a reflectionof the recipient's affective position toward the product and/or commercial. Several studies (Tesser and Conlee 1975; Tesser and Cowan 1977) have shown that the opportunityfor thought leads to a polarizationof attitudeswhereby affective position becomes more extreme in the initial direction. onditionsmay Message recipientsin the multiple-exposure have formed an attitudetowardthe new brandafter one or two exposures, while further exposure to and reflection upon the message argumentsmay have led to attitudepolarization. Thus, the cognitive responsesproducedby these subjects may have been a reflection of a previously developed and polarized attitude; ratherthan mediatingmessage acceptance, the recipients'responses may thus have offered cognitive justification for their affective position.

This alternativeperspective suggests that the multipleexposure condition subjects were not processing the mes- 6Thereis evidence that the message argumentswere retainedmore in the multiple-exposureconditions than in the single-exposureconditions. The cell means for the unaidedrecall measurewere 1. 70, 2. 33, and 2. 48, while the means for the aided recall measure were 2. 22, 2. 74, and 3. 20. An analysis of varianceperformedon the receptionscores showed thatthe effect of repetitionwas significant for both measures, F (2. 257) = 7. 01 and 11. 25, respectively (p < 0. 1). Pairwise comparisons of the cell means, using the Scheffe test, indicatedthat both recall measuresshowed a significant increase between the one- and three-exposureconditions (p < 0. 05), but not between the three- and five-exposurelevels. REPETITION EFFECTSOF TV COMMERCIAL TABLE 2 INTERCORRELATIONSOF VARIABLES IN HYPOTHESIZED FLOW OF EFFECTS Cognitive response - 63 TABLE 3 PREDICTIONS AND DEGREES OF FIT FOR RELATIONSHIPS AMONG NONADJACENT CAUSAL VARIABLES Degrees of fit Actual Expected Variable Repetition - Attitude - . 013 . 429 Purchase intention . 31 R--CR-> Att-> PI' 1. Repetition 2. Cognitive response 3. Attitude 4. Purchase intention . 022 . 310 . 692 13 12r23 -. 013 rl2r23r,. r24= r23r, r14= . 031 . 310 R--Att-> PIl-CR -. 009 [(-. 022)(. 429)] - . 006 [(-. 022)(. 429)(. 692)] . 297 [(. 429)(. 692)] In performingthis analysis, the cognitive response variable was operationalizedby using the compensatoryindex derived from model 1 (Table 1). Repetition was assigned a value of 1, 3, or 5, dependingupon exposurelevel. Table 2 shows the observed simple correlationsamong the four variablesof interest.

Each variableis numberedto facilitate of interpretation Table 3, which shows the actual and expected correlations among nonadjacentpairs of variables for the two competing causal flows previously described. To compare the degrees of fit of the two models, a total discrepancy score was computed from the correlations shown in Table 3. Total discrepancy was operationalized as the sum of the absolute differences between predicted and actual correlations. Table 3 shows that the degree of fit was best for the traditional model, in which cognitive responses mediate message acceptance.

The total discrepancyfor this model was 0. 055, while the total discrepancy for the competing model was 0. 278. In additionto the two models previously considered, alternativeorderingsof the cognitive response and message acceptance measures following message repetition were also examined. However, none of these models performedas well as the basic cognitive-responses-as-mediatorsmodel. 13 r12r23 r14 = r2r23r34 r24 = r23r34 . 031 -. 022 . 429 -. 015 [(-. 022)(. 692)] -. 005 [(-. 022)(. 692)(. 310)] . 214 [(. 692)(. 310)] intention aRepetitionrCognitive response-Attitude-oPurchase

DISCUSSION The results of this study are not supportiveof Berlyne's (1970) two-factor theoretical account of repetition effects nor of Cacioppo and Petty's (1979) two-stage attitudemodification process model. Neither attitudesnor purchaseintentions were affected by the level of advertisingexposure. This is consistent with the results of otherrepetitionstudies that have failed to find a significant main effect for repetition on these outcome measures. The patternof results found for the cognitive response measures was also inconsistent with theoretical expectations.

The number of negative product/message-related thoughtsdid not decline between the one- and three-exposure conditions, as had been predicted. The negative thoughtsvariablealso failed to parallelthe resultsfound for the attitude and purchase intention measures for the oneand three-exposureconditions. This inconsistency, which was also found by Calder and Sternthal(1980) and, to a lesser degree, by-Cacioppoand Petty (1980), suggests that there is not always a direct correspondencebetween cognitive response and outcome evaluations.

The second stage of two-factortheory and the two-stage attitudemodificationprocess, which predicts a decrease in affect and an increase in negative thoughts due to tedium and reactance, was partially supported. Neither attitudes nor purchase intentions showed a significant decline between the three- and five-exposure conditions. However, the significant increase in negative repetition-related thoughts between the three- and five-exposure conditions suggests that reactance to the multiple message exposures did become more pronouncedin the high exposure condition.

The significant increase in repetition-related thoughts across the three exposure levels is not surprising, but it is noteworthy. Past studies of repetition and cognitive response have not directlyrecognized the possibility thatrepetition-relatedcognitions might occur as a result of excessive exposure to a message; instead, they have assumed that the recipient's reaction to message repetition impacts on more traditionalcognitive response variables, such as or counterarguments favorablemessage-relatedthoughts. From a strategicperspective, these findings have implications for the scheduling of adverising messages, particularly over short time periods. While the exposure levels used in this study were high for a one-hour time period, they are not totally inconsistent with actual media schedvalue uling practices. The results suggest that no short-term is gained from addedexposures. Media schedulesthatresult in high levels of message exposure in a limited time period run the risk of alienatingthe viewer and may not represent Althoughcognitive response measures were not taken in the study by Gom and Goldberg (1980), they did find negative repetition-related reactions to be commonplace: " Observationof the children suggested that when exposed to the same commercial three or five times, they became annoyedby the repetitions. Remarkssuch as " Oh no, not again" or " not anotherone" were common ...... . . . (p. 424). " 64 the most effective expenditureof media budgets.

However, ratherthan focusing only on immediate postexposure reactions, it would be helpful to consider the effects of multiple message exposure over longer time periods, in order to determine the persistence of positive or negative responses. Crandall, Harrison, and Zajonc (1975) found that the negative effects of tediumfrom repeatedexposuresmay be only transitory, whereasthe positive effect is permanent. Stang (1974) also found satiationeffects to be short-lived: a small measurementdelay was more likely to show positive effects of exposure than an immediate measurement.

Research similar to that of Cacioppo and Petty (1980), which uses delayed measures of cognitive response and the attitudechange, is needed to fully understand effects of message repetition. The use of delayed response measures in examining repetition effects is discussed in detail by Sawyer and Ward (1977). The results of this study are supportiveof other investigations suggesting that cognitive responses mediate postmessage attitudesand purchase intentions. Moreover, this studyoffers furthersupportfor the viabilityof using thought verbalization data in studying communication effects.

While the cognitive response models were capable of explaining a significantamountof the variancein attitudeand purchase intention, the aided and unaided recall measures did not show a significant relationshipto message acceptance despite the increase in recall scores across the three levels of exposure. These findingsare consistentwith other studies which have found that stimulus learningis not necessarily related to affective reactions (Cacioppo and Petty 1979; Greenwald1968; Wright19, 73).

These resultssupport the argumentthat cognitive cues generatedby the message recipient, ratherthan message arguments, are the primary mediatorsof message acceptance. [ReceivedMay 1981. Revised November 1981. ]

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APPENDIX Sample Text of CommercialMessages Announcingan importantadvance in thescienceof dental hygiene, new Shield toothpaste with fluorigard. Fluorigard is a new stannous fluoride substance developed by a biodental team at a leading university. Clinical tests by the American Dental Association have found new Shield to be more effective than Crest, the leading fluoride toothpaste, in reducing cavities. These tests showed that Shield, with its patented fluorigardformula, has significantly higher levels of fluoride activity than Crest.

This means that Shield spreads faster while you brush, actually penetratingand cleaning in between your teeth, where most cavities occur. And Shield's fluorigard formulawas also preferredin taste tests. Remember, see your dentist regularly and brush often with new Shield, the only toothpastethat gives your teeth the protectionof fluorigard. REPETITION EFFECTSOF TV COMMERCIAL (1972), " Why Three ExposuresMay Be Enough," Journal of AdvertisingResearch, 12: 11-14. Leavitt, Clark (1974), " Strong Versus Weak Effects of Mass Communications: Two Alternative Hypotheses," in Buyerl ConsumerInformationProcessing, eds.

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