AN EXPERIMENTAL TEST OF THE RELATIONSHIP OF ADVERTISING LANGUAGE TO THE STRENGTH OF INFERENCES DRAWN ABOUT PRODUCT CLAIMS

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Abstract

An experiment was performed on college students to study their memory for claims made about products mentioned in advertising slogans embedded in a story. The slogans either asserted a claim directly or merely implied that claim. The asserted version made a claim very directly and strongly (e.g., Eradicold cures the flu), while the implied version only suggested the stronger claim (e.g., Eradicold fights the flu). Subjects read the story, which contained one of the two versions of each ad. This story was a short scenario in which the protagonist finds him/herself in their vehicle driving through traffic while being exposed to advertisements on radio, park benches, billboards, etc. After subjects finished reading the story memory was tested using cloze (fill-in-the-blanks) and multiple-choice tests. Results from both measures showed that subjects frequently falsely remembered an implied claim as having been asserted, while the reversed seldom occurred. These findings have implications for the issue of consumers being misled by deceptive advertising.

Introduction

One problem in applied linguistics is how the language in advertising may mislead a consumer into believing some erroneous information about the performance of some product (Geis, 1982; Harris, Sturm, Klassen, & Bechtold, 1986). The issue of defining deceptive advertising has been hotly debated in the marketing literature (Armstrong, Gurol, & Russ, 1980; Ford & Calfee, 1986; Gardner, 1975; Preston & Richards, 1986; Russo, Metcalf, & Stevens, 1981). A more cognitive approach may define the problem in a more information processing sense, i.e., in terms of whether a person comes to understand and remember information which is in fact inaccurate (Harris,

Dubitsky, & Bruno, 1983; Reece & Ducoffe, 1987; Russo, Metcalf, & Stevens, 1981).

In the normal course of language comprehension, we frequently infer beyond the information explicitly given in a text. People do not remember text literally but rather reconstruct it based on inferences drawn from it, the specific context of its use, and their own knowledge (e.g., Bransford, Barclay, & Franks, 1972; Bransford & Johnson, 1972; Harris, 1981).

One specific application of such research has been in the study of how people draw inferences from advertisements. The memory for an advertising claim can undergo alterations from an original claim which is only implied to a remembered meaning which states the claim more directly (Bruno & Harris, 1980; Harris, 1977; Harris, 1981). Harris and his colleagues demonstrated that people go beyond what is stated in an advertisement to infer a stronger claim than what was presented (Harris, 1977; Harris, Dubitsky, & Bruno, 1983). In these studies, subjects were presented an advertisement which either directly asserted or strongly implied a certain claim about a product. In a sentence-judgment memory task, strongly implied claims were remembered as having been directly asserted. These studies have found this effect using both real-world and imaginary product names and with both a written text of the advertisement and an oral presentation.

The present studies had the major purpose of extending these previous findings to recall and forced-choice-recognition measures in the somewhat more ecologically valid situation of reading connected discourse. An additional variable of a orally-induced situational context was also included, where subjects were told to imagine themselves as the protagonist in a story about either going shopping or visiting a friend.

Experiment 1 examined both cloze cued recall of ad claims and a multiple-choice task. Experiments 2 and 3 were brief followups looking at just one of these two measures individually, with the purpose of testing for possible inter-measure confounding.

Experiment 1

Method

Subjects. The subjects were 103 undergraduate students at Kansas State University. They received General Psychology course credit for participation and were recruited for a study in "memory for a story containing advertisements".

Materials. Sixteen advertising slogans (5-20 words long) for real products were written and inserted into a brief story written by the experimenters. There were two versions of each slogan. One type stated a claim directly (assertion), e.g., Eradicold cures the flu. The other only implied the same claim (implication), e.g., Eradicold fights the flu). The slogans were inserted into two versions of the story, each containing eight asserted and eight implied claims. The finished story contained sixteen slogans, counterbalanced across the two versions and the two types of claims.

Procedure and Design. The subjects were given a page containing the story to read. This story was a short scenario in which the protagonist finds him/herself getting in a car and driving through traffic while being exposed to advertisements through radio, billboards, park benches, etc. Subjects were instructed to read the story and imagine that they were the protagonist in the story who was either (a) "going on a shopping trip" or (b) "visiting a friend." Upon receiving the story, subjects were to begin reading it at their own speed. The critical mention of going shopping or visiting a friend occurred three times in the instructions and comprised two levels of a between-subjects variable of context.

After subjects finished reading the story they performed an intervening task of filling out index cards for course credit. Following the intervening task, the subjects were administered three types of memory tasks: filler, cloze, and multiple choice, respectively, to determine if the different instructions about context or the different versions of the ad affected their memory.

As an initial filler task, the subjects were asked to recall all the product names (e.g, soap) and brand names (e.g., Safeguard) that they could remember from the slogans in the story. Following this filler task subjects were handed thirty cloze questions. The cloze questionnaire involved a duplication of the story but with several words of the ads deleted. The words deleted were key assertion and implication

phrases (e.g.,"GE light bulbs_____."), as well as some control questions on non-ad material in the story. The subjects were asked to fill in the blanks "as accurately as possible." They were told to try to remember the exact words, but, if they could not, to write in the meaning as closely as they could remember. All subjects received the same cloze task, regardless of which story they had read.

Finally, 28 multiple-choice questions (16 on the ads and 12 on non-ad material) were administered to the subjects. For the ad material, the four choices for each question included (1) correct assertion, (2) correct implication, (3) incorrect assertion, i.e., a different claim stated directly, and (4) incorrect implication, i.e., a different claim merely implied. The order of the four choices in each question were randomized. Whether (1) or (2) was the correct response for that question depended on whether the subject had read the asserted or implied version of that ad. Also included in the multiple-choice task were 12 questions on the non-ad content of the story.

Results

Only the results from the cloze and multiple-choice task were of interest here.

Cloze data. Each response, regardless of which version was read, was scored as either an assertion, an implication, an omission, or an other. Paraphrasing was accepted if the basic idea was present and/or key phrases were used. For example, some of the responses given to an Alka-Seltzer cold medicine ad were scored as follows. The correct assertion was "provides instant relief for" common aches and pains. An acceptable paraphrase was "relieves." A paraphrase of an assertion judged to be different enough from the stimulus claim and thus scored as an other was "goes to work fast on". The correct implication was "helps lessen" common aches and pains. An acceptable paraphrase was "helps provide relief for." A distant paraphrase of an implication that was scored as an other was "could rescue." If no answer was given or the subject wrote something such as "cannot remember," the answer was scored as an omission. Such responses representing interference from real ads, such as "takes a licking and keeps on ticking" for the Timex ad, were scored as an other; the correct assertion was "will last

forever." The nonads were scored as either correct, incorrect, or as an omission.

The group means for the cloze data appear in Table 1. Separate 2 x 2 analyses of variance were performed on each of the four types of responses. While there was no significant ($p<.05$) main effect in the number of asserted responses to the asserted and implied ads, there was a significant main effect in the number of implied responses to the two types of ads, $F(1,101)= 13.85$, $MSe=1.73$, $p<.001$. That is, if a subject read the asserted version of the ad, the implied response was seldom made. However, if the subject read the implied version of the ad, the implied and asserted responses were both more or less equally likely to occur. There was no significant ($p<.05$) main effect for the other responses or omitted responses. There was no significant ($p<.05$) main effect for the nonad items. No significant ($p<.05$) main effect or interaction involving context was found in any of the analyses.

Table 1
Cloze Task: Number of Responses

	Experiment 1 (Delay)				Experiment 2 (Immediate)			
	A	I	other	omit	A	I	other	omit
Read A	2.17	1.38	1.92	2.49	3.05	1.47	1.55	1.92
Read I	1.86	2.06	1.80	2.30	2.47	2.50	1.18	1.92

Multiple-choice data. The multiple-choice data were scored by counting the number of (1) correct responses, (2) "alternative" responses, i.e., the paraphrase of the correct response, or (3) Other, i.e., either of the two responses of the other type, e.g., either of the two asserted-claim responses if the actual claim read had been implied. A 2 x 2 analysis of variance was performed on the number of responses in each of these three response types, using the between-subjects factor of context (shopping or visiting a friend) and the within-subjects factor of type of ad read (asserted or implied claim). Mean number of responses in each category appear in Table 2.

The analysis of the number of correct responses showed a main effect of ad type, $F(1,101)=7.35$, $MSe=1.23$, $p<.01$, with more correct recognitions of the asserted than the implied ads (4.08 vs. 3.66). The analysis of the number of selections of the alternative response of the same type (i.e., the incorrect implied choice if the correct choice was

implied) showed the same main effect of ad type, $F(1,101)=13.34$, $MSe=.92$, $p<.001$, with more such false alarms made after reading asserted than implied claims (1.25 vs. .77). These two categories together may be considered as memory for the correct strength of the claim. Asserted claims were most often remembered as such, while implied claims were often falsely remembered as asserted.

Table 2
Multiple-choice Task: Number of Responses

	Expt. 1 (Delay)			Expt. 3 (Immediate)		
	Correct	Altern.	Other	Correct	Altern.	Other
Read A ads	4.08	1.25	2.67	4.26	1.46	2.31
Read I ads	3.66	.77	3.58	3.69	.89	3.43
Mean	3.87	1.01	3.12	3.97	1.17	2.87

The analysis of the number of false recognitions of the other type of claim (e.g., choosing an asserted alternative if an implied statement had been present) also showed a main effect of ad type, $F(1,101)=25.50$, $MSe=1.66$, $p<.001$, but here the difference was in the opposite direction, with more such responses made after reading implied than asserted ads (3.57 vs. 2.67). All of these results indicate that subjects reading an implied claim were frequently falsely recognizing a stronger (i.e., asserted) claim than what they had read, but that subjects reading an asserted claim were much less often falsely recognizing the weaker implied claim. In none of these analyses was any main effect or interaction involving context (shopping or visiting) significant.

A simple one-way analysis of variance was performed on the number of correct recognitions of the nonad material with the single variable of context (shopping or visiting a friend). As expected, no effect was found.

Discussion

Experiment 1 failed to produce an effect involving context. This could be because (1) The tasks are not sensitive to the context manipulation, or (2) Any potential effect of context was eliminated by the act of performing the preceding memory tasks and/or the fact that some time had passed. To explore this second possibility, two additional experiments were performed. Both used the same procedure and design as Experiment 1, except that, instead of three memory tasks, subjects performed only one, either the cloze task (Experiment 2) or the multiple-choice task (Experiment 3). If no effects of context are obtained in these experiments, then we know that the findings in Experiment 1 cannot be attributed to interference from the prior memory tasks or passage of time.

Experiment 2

Method

The method and procedure of Experiment 2 were identical to Experiment 1, except that subjects performed only the cloze task, with no filler recall or multiple-choice task. There were 39 subjects.

Results and Discussion

The group means for the cloze data appear at the right of Table 1. Data were analyzed exactly as in Experiment 1, with separate 2 x 2 analyses of variance performed on each of the four types of responses. Results exactly paralleled those from Experiment 1. While there was no significant ($p<.05$) main effect in the number of asserted responses to the asserted and implied ads, there was a significant main effect in the number of implied responses to the two types of ads, $F(1,36)=10.18$, $MSe=2.04$, $p<.005$. That is, if a subject read the asserted version of the ad, the implied response was seldom made. However, if the subject read the implied version of the ad, the implied and asserted responses were both likely to occur. There was no significant ($p<.05$) main effect for the other responses or omitted responses. There was no significant ($p<.05$) main effect for the nonad items. No significant ($p<.05$) main effect or interaction involving context was found in any of the analyses. Thus the results obtained in Experiment 1 were replicated, indicating that the intervening filler recall test had no substantial effect on responses to the cloze task, except for lowering the overall accuracy level of recall.

Experiment 3

Method

The method and procedure of Experiment 3 were identical to Experiment 1, except that subjects received only the multiple-choice task and no filler recall or cloze task. There were 35 subjects.

Results and Discussion

The multiple-choice data were scored and analyzed exactly as in Experiment 1, first by counting the number of (1) correct responses, (2) "alternative" responses, i.e., the paraphrase of the correct response, or (3) Other, i.e., either of the two responses of the other type, e.g., either of the two asserted-claim responses if the actual claim read had been implied. A 2 x 2 analysis of variance was performed on the number of responses in each of these three response types, using the between-subjects factor of context (shopping or visiting a friend) and the within-subjects factor of type of ad read (asserted claim or implied claim). Mean number of responses in each category appear at the right in Table 2.

The three analyses produced exactly the same significant effects as those obtained in Experiment 1. The analysis of the number of correct responses showed a main effect of ad type, $F(1,33)=4.24$, $MSe=1.39$, $p<.05$, with more correct recognitions of the asserted than the implied ads (4.26 vs. 3.69). The analysis of the number of selections of the alternative response of the same type (i.e., the incorrect implied choice if the correct choice was implied) showed the same main effect of ad type, $F(1,33)=6.05$, $MSe=.92$, $p<.001$, with more such false alarms made after reading asserted than implied claims (1.46 vs. .89).

The analysis of the number of false recognitions of the other type of claim (e.g., choosing an asserted alternative if an implied statement had been present) also showed a main effect of ad type, $F(1,33)=14.26$, $MSe=1.53$, $p<.001$, but the difference was in the opposite direction, with more such responses made after reading implied than asserted ads (3.43 vs. 2.31). Thus, subjects reading an implied claim were frequently falsely recognizing a stronger (i.e., asserted) claim as what they had read, but subjects reading an asserted claim were much less often falsely

recognizing the weaker implied claim. In none of these analyses was any main effect or interaction involving context significant.

A simple one-way analysis of variance was performed on the number of correct recognitions of the nonad material with the single variable of context (shopping or visiting a friend). As expected, no effect was found.

The fact that the results from the multiple-choice task in Experiment 3 were virtually identical to those obtained in Experiment 1 shows that neither the passage of time nor the interpolated activity of performing the filler and cloze tasks in Experiment 1 had any effect on memory. Neither can the lack of any context effects be attributed to the interference of these tasks or the passage of time.

General Discussion

These experiments have supported the previous findings of Harris, et al (1983) and extended them to the more realistic situation of reading connected discourse instead of single sentences. Also, the effect was observed with two different dependent measures, cloze and multiple choice. These findings thus argue that previously obtained effects are highly robust and generalizable. Very subtle linguistic changes thus can have a profound impact on memory. In making such memory "errors" subjects may be misled or deceived by ads which may imply a falsehood without stating it directly.

The fact that no effect involving the instructional context manipulation was significant suggests that either such a manipulation simply has no effect on what was being measured or that the manipulation used in the present study was just too weak to produce the effect. Which of these explanations is more accurate must await further research.

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