

## The Effectiveness of Different Types of Pragmatic Implications found in Commercials to Mislead Subjects

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### SUMMARY

Statements concerning the truthfulness of claims made in 16 tape-recorded commercials about fictitious products were judged by 40 college students. In half of the commercials a claim was directly asserted while in the other half the claims were pragmatically implied. Pragmatic implications are statements that lead a person to believe something that is neither explicitly stated nor necessarily implied. As expected based upon previous research, subjects often responded to implied claims as if they had been directly asserted (particularly by subjects in the short delay group). In addition, differences were found in the effectiveness of four different types of pragmatic implications for misleading subjects.

Considerable research has shown that making inferences, whether they are correct or incorrect, plays an important role in language comprehension (Clark and Clark, 1977; Grice, 1967; Howard, 1983). This is because much of the underlying message is often not explicitly stated but must be inferred. Our propensity to make such inferences about what we hear or read, while usually quite beneficial, can under certain circumstances lead us to draw unwarranted conclusions (e.g. Bartlett, 1932; Bransford, Barclay and Franks, 1972; Bransford and Johnson, 1973). One method for examining how people fall prey to making false inferences has been to use sentences involving pragmatic implications.

Pragmatic implications are statements that lead a person to believe something that is neither explicitly asserted nor necessarily implied (Brewer, 1977; Harris, 1974, 1977; Harris and Monaco, 1978). This presumably occurs because of an interaction between the actual input of the message and the person's knowledge of the world. For example, the statement 'The karate champion hit the cinder block' pragmatically implies that the block was broken (Brewer, 1977). However, this unwarranted inference would not have happened if the word 'swimming' was substituted for the word 'karate'. This is in contrast to a logical implication in which information is *necessarily* implied. An example of a logical implication is 'John forced Bill to rob the bank', which necessarily implies that Bill robbed the bank (Harris and Monaco, 1978).

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*A copy of the complete text of each commercial and the accompanying test statements can be obtained from the first author. A shorter version of this paper was presented as a poster at the 55th Annual Meeting of the Eastern Psychological Association, Baltimore, 1984. Reprint requests should be sent to Dr. Alan Searleman, Dept. of Psychology, St. Lawrence University, Canton, NY 13617, U.S.A.*

In a study designed to examine the effectiveness of pragmatic implications in advertising, Harris (1977) tape-recorded 20 fictitious commercials which he then presented to college students. In one half of the commercials a critical claim about a product was directly asserted while in the remaining commercials the same claim was pragmatically implied. The subjects were then asked to evaluate statements about the advertised products as being either true, false, or of indeterminate truth value. The general findings of the study were that subjects tended to process and remember the pragmatic implications as if they were direct assertions, and that this was most evident when they were required to make their evaluations after a short delay period rather than immediately after the commercial's presentation.

The present study sought to determine if there were individual differences in the effectiveness of different types of pragmatic implications for causing subjects to make false inferences about fictitious products, and if this effectiveness would vary as a function of the amount of time elapsed between the initial presentation of the information and the judging of its truthfulness. Since there are numerous ways to pragmatically imply a false claim, it was necessary to limit the number of different types of pragmatic implications investigated. We decided to select four different types of pragmatic implications that are commonly found in real commercial advertising. The four pragmatic implications studied were as follows:

1. Juxtaposing imperative statements (e.g. 'Get a good night's sleep. Buy Dreamon Sleeping Pills.'). The juxtaposition of the two imperative statements can erroneously imply that the sleeping pills were responsible for the good night's sleep.
2. Using comparative adjectives without stating the qualifier (e.g. 'Lackluster Floor Polish gives a floor a *brighter* shine.'). This may lead to the false implication that this floor polish produces brighter shines than do other floor polishes. Instead, the floor polish may only give a brighter shine 'than using only water'.
3. Using hedge words (e.g. 'Ty-One-On pain reliever *may* help get rid of those morning-after headaches'). The use of the hedge word *may* should weaken the assertion but still can leave a strong implication that the product will in fact relieve headaches.
4. Reporting of piecemeal survey results (e.g. 'John Doe Jeans are available in more colors than Gloria Vanderbilt's, are more sleekly styled than Sergio Valenti's, and are less expensive than Cheryl Tiegs'). In this case an unwarranted general conclusion could be reached that John Doe Jeans are better in all ways than the other jeans.

## METHOD

### Subjects

The subjects were 40 undergraduate volunteers from St. Lawrence University who were all native speakers of English. They were tested in small groups ranging from five to eight people.

## Materials

There were 32 commercials written about fictitious products. The commercials were tape-recorded (using a male voice) and ranged from 30 to 67 words in length ( $M = 44$ ). There were two versions prepared for each commercial: one that explicitly asserted a claim about a product and one that only pragmatically implied the same claim. Two tape-recordings were made such that each tape contained 16 randomly ordered commercials, half of which were assertion commercials and half that were implication commercials. If a commercial asserted a claim on one tape, it implied the claim on the second tape. The eight implication commercials on each tape were divided into four groups: two commercials used juxtaposed imperative statements, two used comparative adjectives without a qualifier, two used hedge words, and two used piecemeal survey results.

Following the methodology used by Harris (1977), there were two test statements written for each commercial. One statement was a paraphrase of the implied or asserted claim heard in the commercial, and one was either a clearly false statement or a statement indeterminate in truth value based upon the information presented in the commercial. Therefore, for each tape there were 32 test statements to be judged: 16 were restatements of the implied or asserted claim, 8 were clearly false statements, and 8 were statements of indeterminate truth value. Examples of each of the four types of pragmatic implication commercials examined in the study and their corresponding assertion versions are shown in Table 1 (along with the accompanying test statements).

## PROCEDURE

The subjects were randomly divided into two groups of 20, an immediate group and a short-delay group. The subjects were told that the purpose of the study was to investigate how information in commercials was understood. They were instructed to accept the fact that the commercials would be making accurate statements with respect to their products. Directly after listening to each tape-recorded commercial (each of which lasted 15 to 20 seconds), the subjects in the immediate group judged the two test statements for that commercial as being either true, false or of indeterminate truth value. This was accomplished by marking either a 'T', an 'F', or an 'I', respectively, on the blank line in front of each statement. The two test statements for each commercial were on the same page of a 16-page test booklet. The subjects were instructed not to turn the page until the next commercial had been presented. Subjects in the short-delay group listened to all 16 commercials before they judged any of the test statements. For these subjects the test statements were presented on a single page in the order in which the commercials were presented on the tape. Although there was no set time limit for responding, subjects typically answered each test statement very quickly (on the order of 5 to 10 seconds).

Half of the subjects in each group heard the first tape and half heard the second tape, so that one half of each group heard the assertion version of the commercial and the other half heard the pragmatic implication version. All subjects were given explicit instructions and examples on how to differentiate between false and

Table 1. Examples of each commercial type and the accompanying test statements

*Juxtaposed imperative*

*Assertion version* Tossing and turning again? Having trouble getting to sleep? Take Dreamon Sleeping Pills to get a good night's sleep and feel refreshed in the morning. Dreamon Sleeping Pills, the ones in the purple package.

*Implication version* Tossing and turning again? Having trouble getting to sleep? Get a good night's sleep and feel refreshed in the morning. Buy Dreamon Sleeping Pills. The ones in the purple package.

*Critical test statement* Dreamon Sleeping Pills will make you get a good night's sleep and feel refreshed in the morning.

*False test statement* Dreamon Sleeping Pills are sold in a blue package.

*Comparative adjective without a qualifier*

*Assertion version* Kitchen floors can pick up a lot of dirt. Just plain damp mopping doesn't give a floor shine, and waxing takes too much effort. So I use Lackluster No-Wax Floor Polish. Lackluster gives the floor a brighter shine than any other no-wax floor polish. I recommend Lackluster No-Wax Floor Polish.

*Implication version* Kitchen floors can pick up a lot of dirt. Just plain damp mopping doesn't give a floor shine, and waxing takes too much effort. So I use Lackluster No-Wax Floor Polish. Lackluster gives the floor a brighter shine. I recommend Lackluster No-Wax Floor Polish.

*Critical test statement* Lackluster Floor Polish gives a floor a brighter shine than any other no-wax floor polish.

*False test statement* Damp mopping floors gives them a terrific shine.

*Hedge words*

*Assertion version* Did you have a hard night last night? Facing a long day today? Ty-one-on Pain Reliever will get rid of those morning-after headaches. Take Ty-one-on Pain Reliever, sold in drugstores everywhere.

*Implication version* Did you have a hard night last night? Facing a long day today? Ty-one-on Pain Reliever may help get rid of those morning-after headaches. Take Ty-one-on Pain Reliever, sold in drugstores everywhere.

*Critical test statement* Ty-one-on Pain Reliever will cure morning after headaches.

*Indeterminate test statement* Ty-one-on Pain Reliever is aspirin-free.

*Piecemeal survey results*

*Assertion version* There's something new in the world of fashion—John Doe Jeans! These jeans are available in more colors, are more sleekly styled, and are less expensive than Gloria Vanderbilt's, Sergio Valenti's, or even Cheryl Tiegs'. John Doe Jeans are the latest.

*Implication version* There's something new in the world of fashion—John Doe Jeans! These jeans are available in more colors than Gloria Vanderbilt's, more sleekly styled than Sergio Valenti's, and are less expensive than Cheryl Tiegs'. John Doe Jeans are the latest.

*Critical test statement* John Doe Jeans are available in more colors, are more sleekly styled, and are less expensive than Gloria Vanderbilt's, Sergio Valenti's, or Cheryl Tiegs'.

*Indeterminate test statement* John Doe Jeans are available at K-Mart, Ames, and Caldor Stores.

indeterminate statements. None of the four types of pragmatic implications examined in the present study were used in the instructions or examples.

## RESULTS

The mean number of 'true' responses to the 16 critical test statements (i.e. restatements of the implied or asserted claim) was used as the dependent variable. If a subject correctly recognized the probabilistic nature of an implied claim, the correct response would be to judge the critical test statement as being indeterminate in truth value. Similar to Harris (1977), the vast majority of non-true responses were indeterminate, and we agree with Harris that the few false responses made were presumably due to random error. However, if the subject processed the implied claim as if it had been asserted, he or she would have incorrectly judged the critical test statement as being true. The correct response to the critical test statements for commercials that made explicitly asserted claims would, of course, be to judge them as being true.

A  $2 \times 2$  ANOVA (time of testing  $\times$  commercial type) using the mean number of 'true' responses to critical test statements was performed. As expected (Harris, 1977), a significant main effect was found for commercial type ( $F(1,38) = 29.11, p < .001$ ), showing that there was a higher percentage of true responses for assertion commercials (85.0 per cent) than for implication commercials (62.5 per cent). There was also a significant main effect for time of testing ( $F(1,38) = 6.51, p < .01$ ). A greater percentage of true responses was made by subjects in the short-delay group (79.7 per cent) than by their counterparts in the immediate group (67.8 per cent). A significant interaction between time of testing and commercial type ( $F(1,38) = 6.89, p < .01$ ) indicated that this increase was for implication commercials only. Simple main effect analyses (Newman-Keuls) indicated that there was a significantly higher percentage ( $p < .01$ ) of true responses for the assertion commercials than for the implication commercials for the immediate group (85.0 vs. 50.6 per cent, respectively) but no significant difference for the short-delay group (85.0 vs. 74.4 per cent, respectively).

To determine the individual effectiveness of each of the four types of pragmatic implications for misleading the subjects, a  $2 \times 4$  ANOVA (time of testing  $\times$  implication type) was performed. A significant main effect for time of testing ( $F(1,38) = 9.81, p < .01$ ) indicated that a higher percentage of true responses was made by subjects in the short-delay group. As seen in Table 2, each of the implication types was associated with a higher percentage of true responses when the subjects had to rely upon long-term memory.

Table 2. The percentage of 'true' responses as a function of commercial type and time of testing

	Juxtaposed imperatives	Comparative adjectives	Hedge words	Piecemeal survey	Asserted claims
Immediate group	62.50	22.50	62.50	55.00	85.00
Short-delay group	87.50	55.00	75.00	80.00	85.00
All subjects	75.00	38.75	68.75	67.50	85.00

Of greater interest, however, was the finding of a significant main effect for type of pragmatic implication ( $F(3,114) = 10.72, p < .001$ ). For both the immediate and short-delay groups, the comparative adjective without a qualifier was the least successful implication type for misleading subjects. A post-hoc test (Newman-Keuls), collapsed over the time of testing, confirmed the fact that using the comparative adjective without a qualifier was significantly less effective ( $p < .01$ ) than the other three types of pragmatic implications in misleading subjects to accept the implied claim as being true. Additional tests indicated that, for the short-delay group, only the comparative adjective without a qualifier implication type had a significantly lower percentage of true responses ( $p < .01$ ) when compared with the assertion commercials. There was no significant interaction between time of testing and implication type ( $F(3,114) = .67, n.s.$ ).

### DISCUSSION

The present results support and extend earlier research showing that the use of pragmatic implications in commercial advertising is an effective way in which to mislead a person without having actually to assert a false claim (Bruno and Harris, 1980; Harris, 1977; Harris, Dubitsky and Bruno, 1983; Harris, Dubitsky, Perch, Ellerman and Larson, 1980). For instance, similar to what Harris (1977) reported, the current results showed that even though there was a significantly smaller percentage of 'true' responses made to implication commercials than to assertion commercials, more than 50 per cent of the implied claims were still accepted as being true *immediately* after hearing the commercial.

Perhaps even more remarkable is that after only about a 5-minute delay (for subjects in the short-delay group), there was no significant difference in the percentage of true responses made to implied and asserted claims. We agree with Harris (1977) that this probably indicates that only if subjects still have available the verbatim representation or surface structure of the original statements will they be able to differentiate (to some extent) between pragmatic implications and direct assertions.

The major focus of the study was to determine if there were differences in the effectiveness of different types of pragmatic implications for causing false inferences to be made. There was clear evidence that such differences did exist. For instance, it was observed that comparative adjectives without qualifiers were significantly less likely to cause subjects to regard an implied claim as being true than were the use of juxtaposed imperatives, hedge words, or piecemeal survey results. These latter three pragmatic implications were not significantly different from each other in their effectiveness to mislead subjects. One reason why the comparative adjective without a qualifier may be the least effective type of pragmatic implication is that it may cause the subject to immediately speculate about the nature of the missing qualifier. For example, the sentence 'Lackluster gives the floor a brighter shine' may beg the question 'Brighter than what?' This may lead the subject to scrutinize this particular type of pragmatic implication to a greater extent than is usual for other types of pragmatic implications and therefore subjects are less likely to fall prey to drawing an unwarranted conclusion.

For subjects in the short-delay group it was also found that, except for the comparative adjective without a qualifier, each of the other three types of pragmatic implications was statistically indistinguishable from assertion commercials in the percentage of true responses made to critical test statements. It should be remembered, however, that this is only a *relative* decrease in effectiveness to mislead subjects, since 55 per cent of the critical test statements for commercials with comparative adjectives without qualifiers were still considered as true by the subjects in the short-delay group.

Monaco and Kaiser (1983) have shown that individual differences in preferences can affect the type of inferences drawn from commercials. It would be interesting to determine if there are subject variables (e.g. cognitive style or sex differences) which interact with the effectiveness of different types of pragmatic implications to mislead people.

The study of pragmatic implications and their ability to cause people to draw faulty inferences has important practical consequences for the field of commercial advertising (as well as in other applied areas such as courtroom testimony (Harris, 1978; Harris, Teske and Ginns, 1975)). Harris (1977) found that when subjects were asked to make hypothetical purchase decisions concerning fictitious products, there was no difference in the likelihood of making such a purchase as a function of whether or not the claims about the product had been directly asserted or pragmatically implied. It has also been demonstrated in more naturalistic settings (e.g. using real products in real commercials embedded into real television programs) that subjects judge the truthfulness of implied claims no differently than if they were directly asserted (Harris *et al.*, 1980). The Federal Trade Commission (FTC) does not allow advertisers to make false claims or to use *deceptive* advertising. With regard to deceptive advertising, the FTC bases its legal decisions primarily upon whether or not the advertisement has the 'capacity to deceive' (Preston, 1977, 1983; Rotfeld and Preston, 1981). Research showing that the use of pragmatic implications in commercial advertising often leads to misconceptions should be valuable ammunition for regulators to distinguish between 'fair' and 'unfair' advertisements.

## REFERENCES

- Bartlett, F. C. (1932). *Remembering: A study in experimental and social psychology*. London: Cambridge University Press.
- Bransford, J. D., Barclay, J. R. and Franks, J. J. (1972). Sentence memory: A constructive versus interpretive approach. *Cognitive Psychology*, 3, 193-209.
- Bransford, J. D. and Johnson, M. K. (1973). Considerations of some problems of comprehension. In W. Chase (Ed.), *Visual information processing*. New York: Academic Press.
- Brewer, W. F. (1977). Memory for the pragmatic implications of sentences. *Memory and Cognition*, 5, 673-678.
- Bruno, K. J. and Harris, R. J. (1980). The effect of repetition on the discrimination of asserted and implied claims in advertising. *Applied Psycholinguistics*, 1, 307-321.
- Clark, H. H. and Clark, E. V. (1977). *Psychology and language*. New York: Harcourt, Brace, Jovanovich.

- Grice, H. P. (1967). *Logic and conversation*. The William James Lectures, Harvard University (cited in Howard, 1983).
- Harris, R. J. (1974). Memory and comprehension of implications and inferences of complex sentences. *Journal of Verbal Learning and Verbal Behavior*, **13**, 626-637.
- Harris, R. J. (1977). Comprehension of pragmatic implications in advertising. *Journal of Applied Psychology*, **62**, 603-608.
- Harris, R. J. (1978). The effect of jury size and judge's instructions on memory for pragmatic implications from courtroom testimony. *Bulletin of the Psychonomic Society*, **11**, 129-132.
- Harris, R. J., Dubitsky, T. M. and Bruno, K. J. (1983). Psycholinguistic studies of misleading advertising. In R. J. Harris (Ed.), *Information processing research in advertising*, Hillsdale, NJ: Erlbaum.
- Harris, R. J., Dubitsky, T. M., Perch, K. L., Ellerman, C. S. and Larson, M. W. (1980). Remembering implied advertising claims as facts: Extensions to the 'real world'. *Bulletin of the Psychonomic Society*, **16**, 317-320.
- Harris, R. J. and Monaco, G. E. (1978). Psychology of pragmatic implications: Information processing between the lines. *Journal of Experimental Psychology: General*, **107**, 1-22.
- Harris, R. J., Teske, R. R. and Ginns, M. J. (1975). Memory for pragmatic implications from courtroom testimony. *Bulletin of the Psychonomic Society*, **6**, 494-496.
- Howard, D. V. (1983). *Cognitive psychology: Memory, language, and thought*, New York: Macmillan.
- Monaco, G. E. and Kaiser, D. (1983). Effects of prior preference, inferences, and believability in consumer advertising. In R. J. Harris (Ed.), *Information processing research in advertising*. Hillsdale, NJ: Erlbaum.
- Preston, I. L. (1977) The FTC's handling of puffery and other selling claims made 'by implication'. *Journal of Business Research*, **5**, 155-181.
- Preston, I. L. (1983). Research on deceptive advertising: Commentary. In R. J. Harris (Ed.), *Information processing research in advertising*. Hillsdale, NJ: Erlbaum.
- Rotfeld, H. J. and Preston, I. L. (1981). The potential impact of research on advertising law. *Journal of Advertising Research*, **21**, 9-17.



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