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DECEPTIVE ADVERTISING: A PRACTICAL APPROACH
TO MEASUREMENT

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Tennessee

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Summary

A simple methodology for detecting and measuring deception is presented. Actual impressions of subjects exposed to advertising rather than the opinions of "experts" are used. Actual newspaper advertising is used as a stimulus and substantial evidence of deception regarding price is found. Further, the results indicate that simple "one price" advertising themes may cause greater deception than complicated pricing structures.

The marketing literature in recent years has contained a number of articles that have attempted to broaden and increase the understanding of deception in advertising, especially from a behavioral perspective (Armstrong, Gurol, Russ, 1979; Preston 1979). While there have been several attempts to define deception in advertising (Aaker, 1974; Armstrong and Russ, 1975; Gardner, 1975, 1976; Haefner, 1972a, 1972b; Howard and Hulbert, 1973; Jacoby and Small, 1975; Olson and Dover, 1978) research on the topic has been hindered due to the lack of a generally agreed upon operational definition of deception in advertising. The definitional problem is compounded by the closely related one of a lack of generally acceptable methods for measuring deception. While a number of attempts have been made to measure deception in advertising, (Armstrong, Gurol and Russ, 1979; Armstrong, Kendall and Russ, 1975; Armstrong and Russ, 1975; Ford, Kuehl and Reksten, 1975; Gardner, 1975, 1976; Haefner, 1972a, 1972b; Kuehl and Dyer, 1976, 1977; Olson and Dover, 1978) it is not clear that we have yet devised a method (or methods) that is both acceptable and useful to both the academic and legal/regulatory communities.

The research reported here is an attempt to clarify the issues not by presenting another theory, but by demonstrating a very practical method that relies on well known techniques to determine the existence or lack of existence of deception for a given set of advertisements. The results of this particular study will not only be useful in their own right, but also should make a meaningful contribution toward the more complete understanding of deception in advertising.

Ideally, a standard procedure to detect advertising deception is desirable. While we join others in this desire (Armstrong and Russ 1975), it is our contention that this desire is admirable, but presently unrealistic. The measurement and understanding of deception is not yet well enough understood to permit a standard test. Therefore, to enable us to understand the process that results in deceptive impressions and/or behaviors based on deceptive advertising, we need to develop a series of measurements that can be proved useful. As commonalities develop, our understanding of both the process and measurement will lead us to a more comprehensive definition and measurement approach.

It is not the purpose of this paper to give an extensive review and critique of the literature on deceptive advertising. However, it is appropriate to point out that research in this area has generally been in two primary categories. The first is based on the premise that deception can be identified by experts (Haefner 1972a, b; Harris, Dubitsky and Thompson, 1979; Roberts, 1975). While the use of experts is important in the total process of identifying deception, use of experts is not appropriate as the sole determinant (Gardner 1975). The use of experts relies on the expert's interpretation of consumer response, not the actual consumer response which has the potential to be very different than even the best informed expert might perceive.

Therefore, research that attempts to identify deception by dealing with the interaction of the advertisement and the cognitive evaluation of the viewer of that advertisement has been advocated as the more appropriate approach (Armstrong and Russ, 1975; Gardner, 1975, 1976). This second category of research with its focus on the consumer seems to

offer much potential for not only detecting deception in advertising, but or improving our understanding of effective advertising. How the consumer actually uses information transmitted by an advertisement, rather than an "expert" opinion about consumer usage, is an important piece of knowledge in both detection of deception and understanding advertising in general.

Throughout much of its existence, the Federal Trade Commission's concern with advertising was limited to false advertising. The FTC acted in instances where advertised items were not available, sale prices were not lower than normal prices and other clear cases of factual misrepresentation (Kinter, 1971). However, in recent years, the FTC has increased the scope of its concerns. For example, the desire of the advertiser to sell the product featured in the advertisement has been questioned in a series of bait and switch decisions (303 FTC 87; 64 FTC 90; 1114 FTC 91). Failure to disclose various charges and costs in advertisements has also resulted in FTC action (933 FTC 88; 706 FTC 91; 954, FTC 92). In general, it appears that the Federal Trade Commission is now moving toward curtailment of deception as well as falsehoods in advertising.

Deception is a more complex and subtle phenomenon than false advertising. As Gardner has suggested (Gardner, 1975), falsehoods can be detected by comparing the claims in the advertisement against the actual features of the product and terms of sale. However, compared to falsehoods, the detection of deception usually involves comparing the impressions of the person exposed to the advertisement to the actual product features and terms of sale. Despite these difficulties, there is evidence that

the FTC is now willing to consider consumer impressions and not just advertising copy in regulating advertising (Brandt and Preston 1977a, 1977b). In one recent decision, the FTC ruled that the use of square feet rather than square yards as a basis for carpet price misled consumers (303 FTC 87). In another, the commission ruled that picturing various models of television sets together with the featured sale set led to the false impression that all of the sets were available at the advertised price (438 FTC 89). These two decisions appear to illustrate the two subtler forms of deception described by Gardner (1975), as "claim-fact discrepancy" and "claim-belief interaction" and also the approach of Armstrong and Russ (1975).

In the case of the television sets, the mistaken belief that the other brands were also available at the advertised price would appear to be an example of a "claim-fact discrepancy". That is, without additional information, the advertisement is misleading. The carpeting decision concerned a more insidious form of deception which Gardner termed "claim-belief interaction". Certainly carpeting can be accurately priced in either square yards or square feet. However, if the square yard measure is so commonplace that the person exposed to the advertisement subconsciously perceives the unit of measurement as square yards when it is expressed in square feet, then deception exists. The advertisement interacts with strongly held beliefs to produce a distorted impression.

It is apparent that concern over advertising deception is no longer a matter of theoretical speculation (Cohen, 1972). The Federal Trade Commission decisions cited above underscore the interest of the FTC in correcting deception as well as false advertising.

The Study

The study reported here is an attempt to demonstrate a practical approach to detecting deceptive advertising. In addition, this study also illustrates how standard research approaches and tools can be used almost totally independent of behavioral theory to detect the potential deceptive advertisement.

Print advertising for automobile tires was chosen as the topic of interest. There were several reasons for this. Tire advertisements are ubiquitous. Most people are tire users, if not buyers. Also, there is considerable variability in the information different advertisements furnish prospective purchasers.

Four different advertisements were selected for use as treatments in the study (See Table 1). Actual newspaper advertisements were used with minor modifications to disguise the name of the manufacturer or retailer. These particular advertisements seemed to contain two distinct features that could foster deception. First, following industry practices, all of the advertisements featured a small tire at a relatively low price. The featured tire would fit a small proportion of cars and most people would find that they would have to purchase a larger, and therefore, more expensive size. The mistaken belief that the highlighted tire could be used would be an example of "claim-fact discrepancy."

INSERT TABLE 1 ABOUT HERE

The second possibility for deception existed in the pricing perceptions of consumers. Typically, the buyer would need mounting, balancing

and the replacement of valve stems along with new tires. However, the four advertisements vary considerably in mentioning the additional charges that would be incurred for these services. In some cases the charges are in very small print and in others they are entirely omitted. To the extent that the prospective customer would believe that the advertised price included all of the charges required to use the product, it would also seem to indicate claim-belief interaction type of deception. Therefore, a measure of the difference between consumers perception of the price to purchase and install four new tires and the actual total price seems to offer a measure of deception.

Design

The study used interviewers to personally present the advertisements and questionnaires to a convenience sample of 111 adults in a medium-sized midwestern city. No attempt was made to control for demographic variables and people representing a wide range of values on demographic variables are included. Each person was contacted at home and randomly given one of the four advertisements to consider and evaluate. After reading the advertisement, each person was asked to estimate the cost of new tires for his(her) automobile. Care was taken to have the estimate relate to their own automobile - not some hypothetical vehicle. Each advertisement was selected from a newspaper in a city other than the one in which the study was conducted. Furthermore, format and type style of the advertisements were clearly different than those commonly found in the newspapers of the city used for the study which reduced or eliminated demand bias. After recording the estimate, each person was given a previously computed estimate of the actual total cost of install-

ing the tires on an automobile similar to theirs. This cost included mounting, balancing and new stems.

Subjects were then asked to estimate the likelihood that each of the services and charges (mounting, balancing, stems) was included in the advertised price without looking back at the advertisement. The extent to which a need was perceived for each service was also recorded along with several questions concerning likely sources of deception in tire advertising. Finally, a set of questions concerning prior familiarity and experience with tire purchase and demographic data was used to conclude the interview.

The characteristics of the advertisements used in the study are presented in Table 1. There are several ways in which the reader could be deceived regarding the true cost of the tires. For example, highlighting the price of an extremely small tire in type five to ten times as large as the type used for larger-sized tires could be misleading. Advertisements A, B, and C all followed this practice with A being the worst offender. Advertisement D featured only one price for all tire sizes.*

Other areas for price confusion, and hence deception, involve charges for whitewalls, mounting, balancing, federal excise taxes, and replacing valve stems. Table 1 reveals considerable variation in the amount of information furnished on these charges. Assessing the data in Table 1, it would appear that advertisement B furnishes the most informa-

* These advertisements appear to be a very typical set of tire advertisements. Review of tire advertising in several newspapers in different city sizes did not turn up advertising that contained more useful information than these.

tion and consequently should result in the least deception, followed by advertisements, C, D and A.

The above description of the advertisements suggests several areas where deception concerning actual price might occur. The effect of highlighting the price of the small sized tire could again result in a "claim-fact" discrepancy due to the deemphasis of the prices for larger sizes. Also, the variability cited in the advertisements regarding additional charges could result in mistaken beliefs concerning the amount of the total charge.

Hypotheses

The primary measure of deception used in this study was the difference between the subject's estimate of the price and the actual price for the subjects own automobile.* All of the advertisements highlighted the price of a small tire (except advertisement D which featured a single price for all tires). Referring to Table 1, it appears that advertisements A and D were particularly deficient in providing information on additional charges. However, since advertisement D did feature a constant price for all tire sizes, it was judged less deceptive than A. Both advertisements B and C provide more information than A and D and should result in less deception. Since advertisement B provides slightly more information than C, it should be judged less deceptive. Therefore, the a priori ordering of the four advertisements in terms of decreasing deception was thus hypothesized to be A, D, B, C.

* Actual price was computed by identifying the manufacturers original equipment tire size as published in The Professional's Tire Handbook, Modern Tire Dealer, Akron, Ohio.

Analysis and Results

Eight subjects were unable to estimate the price and were deleted from the analysis. Of the 103 remaining cases, 95 subjects underestimated the true cost of the advertised tires for their car. The mean error was an underestimate of \$34.94. This is potentially troubling when one considers that the average estimate was only \$120.20. In other words, given typical price information found in actual advertisements, the adults in this sample made pricing errors averaging twenty-six percent. This result could be due to: either the highlighting of the small tire price; beliefs regarding the cost of the services required; or adults not having information about their automobile. Either way, the error perception is very large.**

Using analysis of variance procedures, the main effect of varying the advertisements upon error in price perception is illustrated in Table 2. Since the range of base tire prices differed slightly in each advertisement, the estimated actual prices were covaried with the differences.

INSERT TABLE 2 ABOUT HERE

It is clear from this analysis that the advertisements did produce significant pricing errors over and above the effects of slightly different price levels. Advertisement D produced the largest adjusted mean

** Differences were unlikely to be the result of ignorance of rim size (14" or 15"). Only one advertisement had prices that were different for 14" and 15" rims for the same tire dimension. In addition, subjects did not mention this as a confusing factor.

difference (i.e., perceptual error) followed by ads A, B and C. Individual contrasts on the unadjusted mean differences revealed that the significant differences were between ads D and C and D and B.

The data also permits an analysis of the extent to which subjects perceived services to be included in the advertised price of the tire. Table 3 shows the results of Kruskal Wallis analyses of this ordinal information for each advertisement for each potential charge. The effect of the small tire price being emphasized was also examined in Table 4 where subject's responses to a question regarding the misleading potential of this feature were analyzed.

INSERT TABLES 3 AND 4 ABOUT HERE

Discussion

It is apparent that the treatments did produce a significant effect. The resulting rankings do not exactly match the hypothesized order although the dichotomy between the two thought to be most deceptive and the two thought to be least deceptive was supported. The surprising finding is the high deception associated with advertisement D both in terms of actual estimation error (Table 3) and perceived misleading effect (Table 4). It will be recalled that this was the only advertisement that featured a single price for all tire sizes and hence eliminated error due to being misled by the featured small tire price. Thus, the estimation error for advertisement D must be due to misconceptions regarding the extent to which the other services were included in the featured price.

Referring to Table 3, it is apparent that many subjects were misled concerning whether there would be additional charges for these items. The low mean ranks for advertisement D indicate that subjects more frequently associated these items with inclusion in the total price than they did with other advertisements. This contention is supported by analysis of individual responses which reveals that eleven of the twenty-five subjects who received advertisement D estimated the total price as simply four times the price of the tire allowing nothing for additional charges. Thus, it appears that featuring a prominent "one price" policy misleads some consumers into computational shortcuts that result in greater deception than concealing a higher price structure through small print.

However, advertisement D is certainly not the only instance of deception. Further inspection of Table 3 reveals that a sizable percentage of subjects felt that their tires would be mounted at no charge in the cases of advertisements C and D although there is no mention of this in the advertisements themselves. Similarly, valve stems are not mentioned at all in any of the advertisements, but in all four treatments there are subjects who feel that they will be included in the advertised price and a larger number who are uncertain. The confusion and hence deception actually existing is further illustrated with balancing where an even larger number of subjects feel that the service will be included despite the fact that it is not mentioned in any of the advertisements. Regarding the federal excise tax, it will be recalled from Table 1 that it was listed as a specific extra charge in advertisements B and C, but not in A and D. Table 3 seems to indicate that

subjects do realize that it is not included in advertisement A (which states that it is not) but are quite uncertain in the remaining three cases.

Several competing hypotheses that might account for the observed differences were also tested. It is possible that a differential need for various features such as balancing or whitewalls could influence perceptions of whether the items were included. Therefore, the extent to which each subject desired each item was measured separately. Chi square tests revealed no differential desires across treatment groups. There was a significant relationship between estimation error and the previous purchase experience and time elapsed since the last purchase. However, the distribution of these variables did not vary significantly from expected values across the treatment cells. Finally, there was no evidence that the need for large versus small sized tires was unequally distributed over the treatment cells.

Conclusions

There is considerable evidence that the advertisements produced different beliefs concerning the total price of the tires and the extent to which various items were included in the purchase price. In almost all cases, the effect was to underestimate the total price by a significant amount. A surprising finding was that a "one price" policy may result in a global impression that the price covers much more than it does. Direct measurement of subject's beliefs concerning specific items revealed that a sizable portion of the sample erroneously believed that items were included in the purchase price when they were not. This

seems to be clear evidence of the existence of "claim-belief" interaction type of deception.

Therefore, using automobile tire advertising as an example, the data in this study clearly confirm the intuitive belief that local newspaper advertising can have the potential to be deceptive. Also, this potential to deceive was identified by a relatively simple procedure and the use of existing analytical tools. The use of such a simple and straightforward method to demonstrate the potential to deceive is encouraging. Not only has one area of deceptive advertising been highlighted, but we have learned more about deceptive advertising.

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Table 1
Characteristics of Advertisements Presented

	AD			
	A	B	C	D
<u>Additional Charges Specified For:</u>				
Whitewalls	not stated	stated, extra charge	stated, no charge	stated: fine print extra charge
Mounting	stated, not included	stated, no charge	not stated	not stated
Balancing	not stated	not stated	not stated	not stated
F.E.T.: Actual Amount	not stated	stated	stated	not stated
Valve Stems	not stated	not stated	not stated	not stated
<u>Other Characteristics</u>				
Prominence of Small Tire's Price	extremely prominent	very prominent	prominent	not a factor
Additional Information on construction, tread design, etc.	none	minimal	adequate	minimal

Table 2

Analysis of Variance In Price Error With Advertisements As Treatments
and Price Level Covaried

AD#	N	Unadjusted Mean	Adjusted Mean	Covaried Means		
A	28	35.3	40.1	145		
B	23	31.7	30.5	158		
C	27	32.1	23.7	173		
D	<u>25</u>	40.6	45.4	145		
	103					

Source	Sum of squares	d.f.	Mean squares	F	p
Between Adjusted Treatments	4028.833	3	1343	3.93	.011
Error	33522.01	98	342.1		
Total	37550.84	101			

Table 3

Kruskal Wallis Analysis of Additional Charge Items For the Four Advertising Treatments Testing Belief That Feature Were Included In Advertised Price

		Ad A		Ad B		Ad C		Ad D	
		N	%	N	%	N	%	N	%
Whitewalls Included	definitely	-	-	5	23	8	29	10	40
	probably	4	14	2	8	2	7	9	36
	not sure	9	32	6	25	7	25	2	8
	probably not	8	29	1	4	5	18	1	4
	definitely not	7	25	9	38	5	18	3	12
	mean ranks	64.89		57.63		49.96		34.58	
		$\chi^2 = 15.306$				p = .002			
Mounting Included	definitely	1	4	7	30	8	29	1	4
	probably	-	0	3	14	2	7	1	4
	not sure	3	11	6	25	5	18	6	24
	probably not	6	21	2	8	4	14	10	40
	definitely not	18	64	5	23	8	29	7	28
	mean ranks	69.91		37.26		43.50		54.68	
		$\chi^2 = 19.444$				p = .001			
Valves Included	definitely	-	0	-	-	1	4	-	-
	probably	1	4	3	14	-	-	3	12
	not sure	1	4	6	25	8	29	6	24
	probably not	7	25	7	30	7	25	11	44
	definitely not	19	68	7	30	11	39	5	20
	mean ranks	68.21		44.57		51.07		41.68	
		$\chi^2 = 14.190$				p = .003			
Balancing Included	definitely	3	7	2	8	1	4	1	4
	probably	1	4	3	14	4	14	1	4
	not sure	1	4	4	17	2	7	3	12
	probably not	7	26	5	23	8	29	11	44
	definitely not	16	59	9	38	12	43	9	36
	mean ranks	66.46		48.37		46.52		45.06	
		$\chi^2 = \text{not significant}$							
F.E.T. Included	definitely	2	7	7	30	10	40	6	24
	probably	-	0	1	4	2	7	3	12
	not sure	1	4	2	8	1	4	3	12
	probably not	5	18	3	14	2	7	5	20
	definitely not	20	71	10	31	12	43	8	32
	mean ranks	66.46		48.37		46.52		45.06	
		$\chi^2 = 10.555$				p = .014			

Table 4

Analysis of Variance by Ranks of Responses
to Whether or Not the Price of the
Highlighted Small Tire Was Misleading

	<u>Ad A</u>		<u>Ad B</u>		<u>Ad C</u>		<u>Ad D</u>	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Definitely	7	25	3	14	5	18	6	31
Probably	4	14	3	14	2	7	3	16
Not Sure	2	7	3	14	1	4	2	11
Probably Not	2	7	2	6	3	13	2	11
Definitely Not	13	50	13	52	16	58	6	31
Mean Ranks	51.63		59.35		59.19		37.90	
	$\chi^2 = 9.557$				$p = .023$			

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