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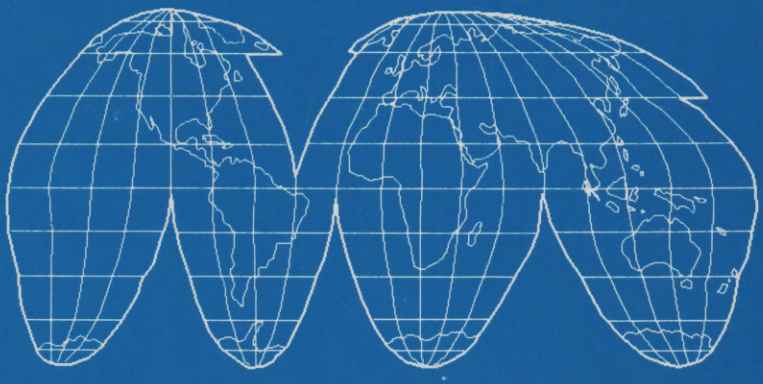

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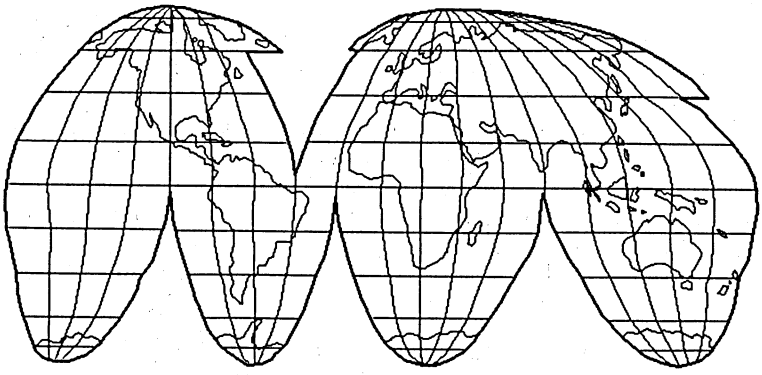

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AN ANALYTICAL FRAMEWORK FOR POLICY ISSUES

ADVERTISING EVALUATION: SEVEN CONCEPTS AND A MODEL

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This paper's basic premise is that we need to know how advertising is actually affecting consumer behavior before we can make any useful recommendations about policy, either for the commodity organizations that run the programs or from the perspective of public policy.

Seven Concepts

1. Search versus experience goods. Phillip Nelson's distinction between what he calls "experience goods" and "search goods" has proven useful in developing a more cogent theory about the role of advertising in a modern market economy. Search goods are defined as goods in which the consumer can readily assess quality or product characteristics prior to purchase. The attributes of the search good are such that their levels or quality can be determined by simple inspection. A mortgage is an example of a search good. Interest rate, closing costs, points and other relevant features of a mortgage can be determined as a matter of course. Mortgages offered by different lending institutions are functionally homogenous so that there is little uncertainty that once a mortgage agreement is entered into the consumer will be assured of performance. Thus, it generally pays for the consumer to spend some time canvassing the market to assess lenders' terms. Goods that lend themselves to consumer search are called search goods.

An experience good is a good whose product characteristics cannot be determined reliably prior to purchase. Consumers must actually purchase and consume the good before they know whether the good has the desired attributes. Such fresh fruits and vegetables as cantaloupe, apples, pineapples, watermelon, sweet corn and tomatoes are examples of experience goods. We have all had the unpleasant experience of purchasing what looks like a juicy and crisp apple only to find upon biting into it that it is mushy, fermented or overly tart. Because the true qualities of experience goods cannot be ascertained prior to consumption, there is little point in seeking or providing information about those characteristics. Experience goods, therefore, differ from search goods in that it does not pay for the

consumer to actively seek information about product characteristics prior to purchase.

2. *Persuasive versus informational advertising.* The distinction between persuasive and informational advertising has a long tradition in economic literature. Persuasive advertising refers to advertising whose main appeal is emotional and noninformative in terms of actual attributes possessed by the good. Advertisements for cigarettes, perfume, beer and soft drinks are largely persuasive in nature. The amount of useful product information contained in a Marlborough ad or a soft drink ad featuring Michael Jackson is extremely limited. Image making is often a primary goal of persuasive advertising.

Informative advertising is advertising that provides the consumer with hard facts about product performance, terms of trade, and other factors relevant to the purchase decision. Ads for industrial goods and such consumer products as computers, cars and washing machines tend to provide specific information about price, warranties, energy use, location of seller and technical specifications on product attributes. The information is objective and thus facilitates rational decision making on the part of the consumer.

Although an original motive for differentiating persuasive from informative ads may have been to determine under what conditions advertising is wasteful (with the supposition that ads that are "merely" persuasive serve no useful social purpose), for the purposes of this paper, the distinction has proved useful in illuminating the behavior of advertisers of search versus experience goods. Search goods product characteristics can be assessed by inspection, so the consumer spends pre-purchase time acquiring attribute-specific information. Thus, a demand is created for attribute-specific information and producers of search goods respond accordingly. Because the search-good customer demands hard information about specific product attributes and can readily verify advertisers' claims, ads for search goods tend to be factual or "informative."

For experience goods, no ready mechanism exists to confirm the veracity of advertisers' attribute-specific claims prior to purchase. Indeed, the advertiser himself might not be certain of the quality of the good in question (e.g., a cantaloupe might look equally wonderful to both buyer and seller and still taste bad). Thus, any information provided by the seller concerning experience-good attributes is likely to be discounted or ignored by the buyer. Because ads for experience goods containing attribute-specific information are not likely to be believed, producers of these goods tend to use appeals that focus on non-attribute factors. *De facto* foreclosure of attribute-related appeals results in an advertising message that must, by necessity, contain a large element of "persuasion." For the aforementioned reasons, "noninformative" or persuasive ads tend to be associated with experience goods.

3. *Signaling.* Signaling, an idea advanced by Nelson, *inter alia*, states that advertising's chief roles are to alert consumers to the existence of products and to send an indirect message or "signal" that the product is of good quality. In this view, the actual information contained in the ad is less important than the fact that the advertising occurs. Underlying this assertion is the idea that advertising is expensive and will pay for itself only if an ad generates repeat sales. Repeat sales occur only if the advertised product meets the consumer's quality expectations. If quality expectations are disappointed, the consumer will stop buying the product and the word will spread that the advertisements are misleading. The campaign's lackluster sales response will make it unprofitable to continue. Thus, the continued presence of ads for a product, or a high level of spending on advertising, provides indirect information by affirming product quality.

4. *Low versus high involvement.* The concept of involvement, a central idea in much of the marketing literature on advertising, refers to the amount of attention that the consumer devotes to the product or the purchase decision. Because of the large number of product alternatives available and the sheer complexity of life in a modern market economy, the consumer has neither the inclination nor, indeed, the ability/time to weigh all purchase decisions equally. Some purchase decisions are made automatically as, for example, when we pick up a carton of eggs or a jug of milk from the dairy case in our favorite grocery store. Other decisions are made quite deliberately, such as when purchasing such big ticket items as cars or refrigerators. By the same token, one consumer may attach great importance to food purchase decisions, carefully weighing, for example, the relative nutritional values and costs of different brands of yogurt, while another consumer may routinely purchase the same brand without regard to new product offerings, cost differences or nutritional values.

Marketers have come to label these differences in the attention paid to the product or purchase decision as "involvement." The concept is deemed important because it provides clues to the appropriateness of alternative communication vehicles, advertising appeals, packaging, and so forth. For example, print advertising may be more appropriate for high-involvement purchases because print media can convey more "hard" information and the consumer is willing to take the time to read the ad. Television advertising, on the other hand, may lend itself to low-involvement or routine purchases because the consumer can be exposed to the message in a manner that requires little cognitive effort or inconvenience on his or her part. One could argue that for most consumers, food purchase decisions are of the low-involvement type.

5. *Affective versus cognitive response.* Learning theorists and psychologists in general have found it useful to distinguish between two

types of response to stimuli: the emotional (affective) and the rational (cognitive). The affective response describes one's feeling toward the message or communicator. Such a response to a stimulus either inhibits or enhances learning and memory, depending on whether the feeling evoked is pleasant or not. The cognitive response refers to the quality and quantity of mental processing that the stimuli evokes. It is a "thinking" response to the ad. An ad that provides information that encourages the consumer to reconsider product attributes and how they might satisfy wants evokes a thinking response. This type of ad is likely to be more effective, *ceteris paribus*, than an ad that fails to appeal to the consumer's reasoning capacity.

Because each type of response has implications for the effectiveness of a particular stimulus in terms of impression formation, recall and overall persuasiveness or impact, it is important to know under what conditions an affective response might dominate the cognitive response and vice versa. For example, some argue that television as a medium lends itself to "feeling ads" whereas print media are more conducive to "thinking ads" (Silk and Vavra; Krugman). Print ads, for instance, permit a more leisurely perusal and can include fine print or other elements of "hard information" not practical for television ads.

The dichotomy between affective and cognitive responses to stimuli has implications for the economists' distinction between experience and search goods. For example, because experience goods by definition are goods consumers must purchase and use before they can judge quality or desirability, one might expect ads for these goods to be "feeling ads" designed to elicit an affective response. Such ads might be expected to be "persuasive" rather than "informational." Search good ads, on the other hand, with their emphasis on information, would be expected to elicit a primarily cognitive response. Recognition of the two levels in which consumers respond to external stimuli (including advertising) might provide insights into advertising response of strategic and analytical importance.

6. *Attribution.* Attribution theory refers to the disproportionate influence of negative information on consumer decision making (e.g., see Mizerski). One common feature of food markets is the risk of exposure to negative information. Beef, pork, egg and dairy producers face an ongoing battle against the negative publicity stemming from medical studies that link saturated fat and cholesterol intake to heart disease (e.g., see Brown and Schrader; Chang and Kinnucan). Recent incidents involving the ocean dumping of hospital wastes, chemical contamination in milk and oysters (Swartz and Strand; Smith, Ravenswaay and Thompson), and salmonella problems with chicken are either suspected of having, or have been shown to have had, profound effects on both the short-run and long-run demand for these commodities. The Chilean grape and Alar apple scares are

other recent examples, and the list goes on. In fact, the "food safety" issue that has gained such prominence in the agricultural economists' research agenda is likely an outgrowth of the outpouring of negative information affecting food markets in recent years.

Yet many of the commodities affected by ongoing or episodic negative information have in place relatively well-financed generic advertising programs (e.g., beef, pork and dairy). If it is true that consumers respond disproportionately to negative information, as suggested by attribution theory, how effective can these campaigns be in the long run? If one instance of negative information can neutralize five instances of positive information, as suggested in tests by Richey, McClelland and Shimkunas, is it possible for generic advertising campaigns to yield a favorable return, especially in industries subject to continuing negative publicity?

From a research perspective, the attribution hypothesis has implications for the econometric modeling of advertising response. For example, if it is true that consumers are especially sensitive to negative information, then it is important to identify possible sources of negative information and to include these data in the model. Examples of this are the egg-demand studies by Putler and by Brown and Schrader in which cholesterol information indices are incorporated into the egg-demand models. Chang and Kinnucan found that health information about dietary cholesterol was about five times more potent than generic advertising in affecting the per capita consumption levels of butter. The disproportionate impact of the negative information in the butter case suggests that if the cholesterol information variable had been omitted, the resulting estimate of the advertising response would have been severely downward biased. This would be especially true if the promotion authority attempted to offset negative publicity by stepping up expenditures on advertising.

7. *Attitude.* In their survey of commodity organizations, Lenz, Forker and Hurst found that 34 percent of respondents listed "change consumer attitudes" as a chief objective of their organization (p. 11). And for some commodity organizations, notably meat, seafood and eggs, changing consumers' attitudes was deemed more important than increasing aggregate sales or maximizing producer income. Thus, the concept of attitude is central to any thoroughgoing analysis of program effectiveness.

Fortunately, the social psychology and marketing disciplines have developed operational definitions of attitude that have direct relevance to generic advertising research and evaluation. Fishbein and Ajzen (p. 6) define attitude as ". . . a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object." In simple terms, attitude is the ". . . amount of affect for or against an object" (Fishbein and Ajzen, p. 11). Thus, a statement such as "For me, eating eggs is: good _____ bad; foolish _____ wise; harmful _____ beneficial," where good, bad,

and the other terms are polar points on a continuum, would be an empirical representation of the attitude construct. (Fishbein and Ajzen emphasize that questions to elicit attitude must focus on *behaviors* [e.g., *eating* eggs] and not objects per se. For example, to state, "Eggs are: good _____ bad, etc.," would be incorrect.)

Attitudes are held in varying degrees of intensity depending on their relationship to an individual's self definition. Attitudes reflecting core beliefs stemming from religious or cultural beliefs are held more strongly than attitudes reflecting beliefs of a tangential nature. The latter type of attitudes, which probably are representatitve of attitudes toward most consumer products and brands, are more amenable to change through influences such as advertising. For advertising to change attitudes, however, the message must maintain consistency with prior beliefs (Rosenberg).

Batra and Ray find it useful to separate the concept of attitude into two components: a *utilitarian* component that defines the consumer's ". . . appraisal of the product's instrumentality in delivering physical attributes" and a *hedonic* component that defines the consumer's ". . . approach-avoidance feeling—a 'hedonic tone'—towards the product as a whole" (Batra and Ray, p. 18). The usefulness of this dichotomy for our purposes will become clear later.

Attitudes are formed by the consumer's beliefs, which in turn are influenced by information. Fishbein and Ajzen define beliefs in the following way (p. 12): ". . . beliefs represent the information he [the consumer] has about an object. Specifically, a belief links an object to some attribute." So, for example, the belief "eggs are high in cholesterol" links the object "eggs" to the attribute "cholesterol." Note that whether the belief represents fact is inconsequential for our purposes: the important point is that once a belief is established, attitude is shaped accordingly.

How are beliefs formed? Presumably through the information the consumer has gleaned from his or her environment. Pope warns it is important this information be treated as exogenous (e.g., as through exposure to external stimuli such as advertising). If the information altered beliefs endogenously as, for example, "through some subjective evolution" (Pope, p. 70), we would be put in the same dilemma we face when attempting to deal with taste changes. Thus, in the model discussed later, we will assume that information alters beliefs exogenously.

A Model

In their review of the theoretical literature on advertising, Boynton and Schwendiman state, "Although economists seem to agree that advertising . . . affects demand through its impact on tastes and preference . . . [t]he precise mechanism by which tastes and prefer-

ences are molded and consumption decisions altered falls largely within the domain of psychology and communications. Marrying ideas from these fields to economics might produce a comprehensive, testable theory of advertising and consumption" (pp. 12 and 42). What follows is a first step in this direction. In particular, our aim is to develop a model that incorporates information and consumer attitudes as additional variables in demand functions.

A motivation for expanding the subset of forces governing consumption behavior stems in part from Deaton and Muellbauer's observation that prices and income alone may have relatively low explanatory power. To wit, in discussing results for a Rotterdam model applied to British data, Deaton and Muellbauer state (pp. 70-71):

". . . the table shows food, housing, travel and communication, entertainment and services as necessities while clothing, fuel, drink and tobacco, and other goods are luxuries. Note, however, that four groups have significant intercept terms; the values shown can be interpreted as the *per annum* change in the budget share w_i, which would take place in the absence of any changes in real total expenditure or in relative prices. We can thus see that, over the century, there have been trend increases in the shares of housing, travel and communication and services and that these have been largely offset by a trend decrease in the share of the budget going to alcohol and tobacco. These changes are perhaps the most important and obvious shifts in the pattern of demand in Britain in this century and *it is sobering to discover they cannot be explained in terms of changes in real income or price structure*" (italics ours).

For yet another example, consider the recent study by Capps and Schmitz that presents empirical estimates of a Rotterdam model for meat consumption in the United States during the post-war period of 1966-88. This study is unique in that in addition to including expenditures and prices, the model incorporated a cholesterol information index to indicate the effects of increasing health awareness on U.S. meat demand. Yet, despite the attempt to augment the basic Rotterdam specification with a "taste shifter," the R^2's for beef, pork, poultry and fish consumption were an unimpressive .49, .73, .36. and .30, respectively. This says that even for commodities that are thought to interact closely, prices and income (or more accurately, group expenditures) appear to play a relatively minor role in explaining consumption trends.

To extend the neoclassical theory to incorporate attitude and information, we take two approaches. In the first approach, we follow Swartz and Strand and assume that quantity consumed is a function of the consumer's perceptions about product quality. A perception function is specified that ultimately becomes embedded in the utility function. Maximization of the utility function subject to a linear budget constraint yields demand equations that contain information and attitude as explicit arguments.

The second approach is to dispense with the perception function altogether and to assume that quantity consumed is a (direct) function of the consumer's attitude toward the product. In this formulation, following Batra and Ray, attitude is decomposed into utilitarian and hedonic components. Defining the hedonic component to be a function of advertising-disseminated information, a quantity-attitude function is specified that contains, as arguments, attitude's utilitarian component and information. Constrained optimization of the utility function containing the quantity-attitude function yields demand equations similar to the first approach except that the attitude variable reflects the utilitarian component only. These utility-theoretic approaches to incorporating attitude and information into demand functions are detailed below.

Approach 1. Consider a two-good world consisting of good X_1 (e.g., beef) and "all other goods," X_2. The two goods have market prices, P_1 and P_2. The consumer's problem is to allocate a fixed income (I) between the goods in such a way as to maximize utility. Utility, however, is determined by the level of consumption of X_1, which, in turn, is influenced by the consumer's perception, Z, of product quality. That is,

$$(1) \qquad max\ U = U(X_1(Z), X_2)$$
$$s.t.\ P_1X_1 + P_2X_2 = I.$$

We will assume (i) the consumer's utility function is quasi-concave and twice differentiable and (ii) information about product quality is obtained passively (e.g., through media exposure); and (iii) perceptions of product quality are indicated by the variable Z, which, in turn, is related to information (N) and the consumer's attitude (A), where attitude, following Fishbein and Ajzen (pp. 6 and 11), is defined as a "learned predisposition" or "affective response" toward an object. That is, the perception function has the form

$$(2) \qquad Z = Z(N, A).$$

Assuming information about product quality $Z_N > 0$, i.e., increases in the quantity of information improves the consumer's quality perception. By the same token, if attitude is defined in such a way that increases in the attitude score imply a more positive affect or predisposition, then $Z_A > 0$. This implies that, for example, holding the level of information constant, an increase in the attitude score results in an improvement in quality perception.

The utility function, then, is

$$(3) \qquad U = U(X_1(Z(N, A), X_2).$$

The consumer's problem now is to solve

$$(4) \qquad \max L = U(X_1(Z(N, A), X_2) + \lambda(I-P_1X_1-P_2X_2).$$

Assuming N and A are exogenous, the first-order conditions from this problem yield the hypothesis that the demand for X_1 is a function of prices, income, information and attitude:

$$X^*_1 = X^*_1(P_1, P_2, I, N, A). \quad (5)$$

Since A is defined as an index of the degree to positive affect toward X_1 (larger values imply greater liking or affect), an increase in A is expected to result in an upward shift in the demand function for X_1. Similarly, if N represents favorable information, an increase in N, *ceteris paribus*, is expected to result in an upward shift in the demand function.

Approach 2. The foregoing is similar to the approaches taken by previous studies (e.g., Smith et al., Chang and Kinnucan). An alternative approach is to dispense with the perception function and to assume instead that X_1 depends on attitude. Further, let us assume that attitude consists of a *utilitarian* component (A_1) and a *hedonic* component (A_2) as previously defined. The quantity consumed of X_1, then, is a function of these attitudinal components

$$X_1 = X_1(A_1, A_2). \quad (6)$$

Now, as Batra and Ray suggest (p.18), whereas the utilitarian component is based on product attributes, the hedonic component is based on ". . . the classical conditioning of affect from ad executions." In other words, such ad-specific items as copy, music, color, and imagery shape the hedonic component of attitude. Thus, in situations of low involvement, i.e., where the degree of attribute processing is low (as seems typical for food), we would expect the utilitarian component to be relatively resistent to advertising exposure. The hedonic component, on the other hand, by definition should be strongly influenced by exposure (as measured by the consumer's memory of the ad).

Defining the information represented by this memory trace as N, equation (6) can be rewritten as

$$X_1 = X_1 (A_1, A_2(N)). \quad (7)$$

The consumer's problem now is to solve

$$\max L = U(X_1(A_1, A_2(N)), X_2) + \lambda(I-P_1X_1-P_2X_2). \quad (8)$$

Assuming N is exogenous, this yields the demand function

$$X^*_1 = X^*_1(P_1, P_2, I, A_1, N). \quad (9)$$

Equation (9) is seen to be identical to equation (5) with the exception that attitude in the latter equation is represented by the more narrowly defined construct A_1, i.e., the utilitarian or attribute-related component of attitude. The demand curve for X_1 shifts upward with increases in either A_1 or N (assuming N is favorable).

The foregoing provides two alternative approaches to incorporation information and attitudes into Marshallian demand functions. Each approach requires a melding of psychological concepts with neoclassical demand theory. Approach 1 has the advantage that Fishbein concepts relating to attitude can be directly incorporated into the analysis to yield a richer empirical model with which to measure and test advertising impacts. For example, a natural extension of approach 1 would be to endogenize attitude by specifying the equation

$$A = A(B(N)) \tag{10}$$

where the as-yet-undefined variable B represents the consumer's beliefs about product attributes. Equation (10) expresses the basic Fishbein postulate that attitudes are determined by beliefs (Ajzen and Fishbein). Equation (10) can be combined with equation (5) to test hypotheses about both the direct and indirect (via attitude) of information on demand (e.g., see Kinnucan and Venkateswaran).

An advantage of the second approach is its relative simplicity. By dispensing with the perception function we are able to sidestep thorny questions about perception formation and whether equation (2) adequately represents the process. The decomposition of attitude into utilitarian and hedonic components has intuitive appeal and may provide insight into how consumers respond to advertising messages. A disadvantage of the second approach is that it lacks the empirical tradition that underlies the first approach (e.g., see Sapp and Harrod), which is tied more closely to the Fishbein model. Thus, more ground will need to be broken in testing the model suggested by the second approach. Both approaches, however, offer a means of incorporating psychological variables into demand functions so that a richer theory of consumer response to advertising can be tested.

Conclusions

The concepts and model discussed in this paper are intended to broaden the framework for analyzing the consumer, market and policy impacts of farm-funded advertising programs. The motivation for taking this approach is the belief that the sister disciplines of marketing and psychology have much to offer the economist in the way of insight, modeling technique, and hypotheses that can enrich our understanding of the advertising process. Many of the ideas and their integration are still inchoate and not expressed in an entirely satisfactory manner. But this is less important than getting ideas into the open where they can be discussed and debated. The ultimate aim is to develop a more satisfactory theory of consumer response to food advertising so that public policies on advertising can be based on sound information.

REFERENCES

Ajzen, I., and M. Fishbein. *Understanding Attitudes and Predicting Social Behavior.* Englewood Cliffs NJ: Prentice-Hall, Inc., 1980.

Batra, R., and M. L. Ray. "How Advertising Works at Contact." *Psychological Processes and Advertising Effects,* ed. L.F. Alwitt and A.A. Mitchell, pp. 13-43. Hillsdale NJ: Lawrence Erlbaum Associates, 1985.

Boynton, R. D., and L. Schwendiman. "Theoretical Approaches to the Economics of Advertising." *Advertising and the Food System,* ed. J.M. Connor and R.W. Ward, pp. 11-46. North Central Regional Research Project NC 117, Monograph No. 14. Madison WI: University of Wisconsin, Sept. 1983.

Brown, D., and L. Schrader. "Information on Cholesterol and Falling Shell Egg Consumption." *Am. J. Agr. Econ.* 72(1990):548-55.

Capps, O., Jr., and J. D. Schmitz. "A Recognition of Health and Nutrition Factors in Food Demand Analysis." *West. J. Agr. Econ.* 16(1991):21-35.

Chang, H.-S., and H. W. Kinnucan. "Advertising, Information, and Product Quality: The Case of Butter." *Am. J. Agr. Econ.* 73(1991):1195-1203.

Deaton, A., and J. Muellbauer. *Economics and Consumer Behavior.* Cambridge, England: Cambridge University Press, 1980.

Fishbein, M. "An Investigation of the Relationships between Beliefs about an Object and the Attitudes toward that Object." *Human Relations.* 16(1963):233-40.

Fishbein, M., and I. Ajzen. *Belief, Attitude, Intention and Behavior.* Reading MA: Addison-Wesley Publishing Co., 1975.

Kinnucan, H. W., and M. Venkateswaran. "Effects of Generic Advertising on Perceptions and Behavior: The Case of Catfish." *South. J. Agr. Econ.* 22(1990):137-51.

Krugman, H. E. "Memory without Recall, Exposure without Perception." *J. Adv. Res.* 17(1977):7-12.

Lenz, J. E., O. D. Forker, and S. Hurst. *U.S. Commodity Promotion Organizations: Objectives, Activities and Evaluation Methods.* A. E. Research 91-4. Ithaca NY: Cornell University, 1991.

Mizerski, R. "An Attribution Explanation of the Disproportionate Influence of Unfavorable Information." *J. Cons. Res.* 9(1982):301-10.

Nelson, P. "Advertising as Information." *J. Polit. Econ.* 81(1974):729-54.

Pope, R. "The Impact of Information on Consumer Preferences." *Research on Effectiveness of Agricultural Commodity Promotion,* ed. W. J. Armbruster and L. H. Myers, pp. 69-79. Oak Brook IL: Farm Foundation, 1985.

Putler, D. S. "The Effect of Health Information on Shell Egg Consumption." Dept. Agr. Res. Econ. Working Paper, Univ. Calif. Berkeley, 1987.

Richey, M. H., L. McClelland, and A. Shimkunas. "Relative Influence of Positive and Negative Information in Impression Formation and Persistence." *J. Personality and Soc. Psych.* 6(1967):322-27.

Rosenberg, M. J. "Cognitive Structure and Attitudinal Affect." *J. Abnormal and Soc. Psych.* 53(1956):367-72.

Sapp, S. G., and W. J. Harrod. "Social Acceptability and Intentions to Eat Beef: An Expansion of the Fishbein-Ajzen Model Using Group Reference Theory." *Rur. Soc.* 54(1989):420-38.

Silk, A. J., and T. G. Vavra. "The Influence of Advertising's Affective Qualities on Consumer Responses." *Buyer/Consumer Information Processing,* ed. G. D. Hughes and M. L. Ray, pp. 157-186. Chapel Hill NC: University of North Carolina Press, 1974.

Smith, M. E., E. O. van Ravenswaay, and S. R. Thompson. "Sales Loss Determination in Food Contamination Incidents: An Application to Milk Bans in Hawaii." *Am. J. Agr. Econ.* 70(1988):513-20.

Swartz, D. G., and I. E. Strand, Jr. "Avoidance Costs Associated with Imperfect Information: The Case of Kepone." *Land Economics.* 57(1981):139-50.