

How Advertising Works: What Do We Really Know?

The authors review more than 250 journal articles and books to establish what is and should be known about how advertising affects the consumer—how it works. They first deduce a taxonomy of models, discuss the theoretical principles of each class of models, and summarize their empirical findings. They then synthesize five generalizations about how advertising works and propose directions for further research. Advertising effects are classified into intermediate effects, for example, on consumer beliefs and attitudes, and behavioral effects, which relate to purchasing behavior, for example, on brand choice. The generalizations suggest that there is little support for any hierarchy, in the sense of temporal sequence, of effects. The authors propose that advertising effects should be studied in a space, with affect, cognition, and experience as the three dimensions. Advertising’s positioning in this space should be determined by context, which reflects advertising’s goal diversity, product category, competition, other aspects of mix, stage of product life cycle, and target market.

With much advertising expenditure wasted in ineffective campaigns (Abraham and Lodish 1990; Lodish et al. 1995a), advertisers should be concerned with how advertising affects consumers, how it works, in order to formulate more effective advertising strategies. The first formal advertising model was probably AIDA (Attention → Interest → Desire → Action), attributed to E. St. Elmo Lewis in 1898 (Strong 1925, p. 76). These types of “hierarchy of effects” models (Lavidge and Steiner 1961) have dominated the literature ever since. Prior integrative studies pertaining to advertising focused on particular models or effects of advertising (e.g., frequency of exposure and scheduling, Naples 1979; market response, Clarke 1976 and Assmus, Farley, and Lehmann 1984; wear-in and wear-out, Pechmann and Stewart 1989; hierarchy of effects, Barry and Howard 1990; affective responses, Brown and Stayman 1992) rather than evaluated the full range of different theories and models. One hundred years later, it is time to establish what is, and what is not but should be, known about how advertising works.

We deduce a taxonomy of the different models as a structure for the discussion of their theoretical principles and empirical evidence and then summarize the findings in 25 conclusions, from which we form five generalizations. To identify what should be known, we discuss what issues the various models in the taxonomy fail to address and propose additional research by formulating five directions.

To choose among the many advertising-related journal articles, proceedings papers, working papers, and books, we

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first formulated study selection criteria on the basis of a simple framework of how advertising works (Figure 1). Advertising, of own and competitive brands, is shown as an input for the consumer. Scheduling of the media, message content, and repetition (Singh and Cole 1993) are components of this input and constitute the advertising strategy that triggers a consumer’s response.

The intermediate type of response implies that, consciously or unconsciously, advertising must have some mental effect (e.g., awareness, memory, attitude toward the brand) before it can affect behavior. Cognition, the “thinking” dimension of a person’s response, and affect, the “feeling” dimension, are portrayed as two major intermediate

FIGURE 1
A Framework for Studying How Advertising Works

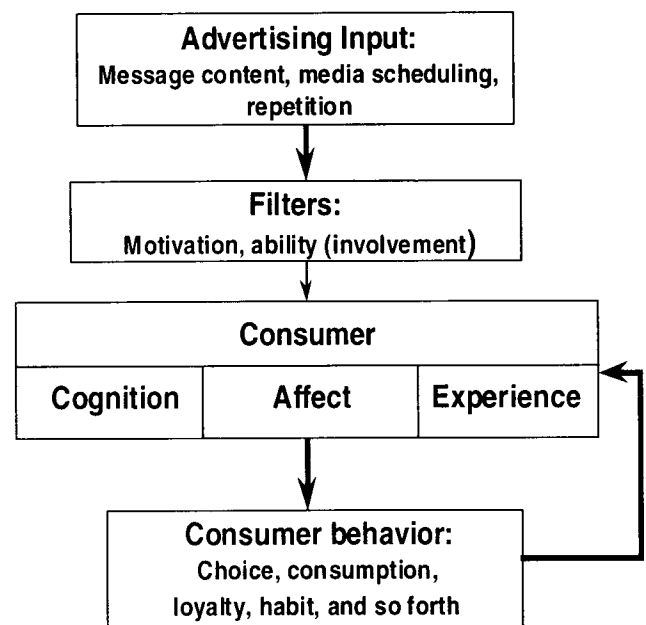


TABLE 1
Taxonomy of Models of How Advertising Works

Model	Notation	Sequence of Effects
Market response	(-)	No intermediate advertising effects considered
Cognitive information	C	"Think"
Pure affect	A	"Feel"
Persuasive hierarchy	CA	"Think" → "Feel" → "Do"
Low-involvement hierarchy	CEA	"Think" → "Do" → "Feel"
Integrative	(C)(A)(E)	Hierarchy not fixed, depends on product, involvement
Hierarchy-free	NH	No particular hierarchy of effects is proposed

advertising effects. Individual purchasing and product usage behavior, or changes thereto, represent the consequential, behavioral effects of advertising in our model. For most products, and especially the frequently purchased packaged goods in which much research is interested, the consumer's mind is not a blank sheet awaiting advertising but rather already contains conscious and unconscious memories of product purchasing and usage. Thus, behavior feeds back to experience, which is our third principal intermediate effect. Individual responses to advertising are mediated by factors such as motivation and ability to process information (Cacioppo and Petty 1985; MacInnis and Jaworski 1989) and attitudes toward the ad (MacKenzie, Lutz, and Belch 1986). These mediating factors can alter or radically change response to advertising. They therefore can be considered filters of the initial advertising input. Our notation to describe the different theories and models of how advertising works follows Holbrook's (1986): C for cognition, A for affect. In addition, we use E for (memories of) prior experience of brand purchase, usage, and advertising.

The studies we eventually included were selected from an extensive database of advertising research, constructed primarily by searching the ABI/Inform database using advertising-related keywords and consulting Broadbent's (1992) synopsis of 456 studies of how advertising works, 122 of which were case histories. Extensive networking also identified candidate studies. The study selection criteria were as follows:

- (1) Each study should focus on behavioral and/or intermediate effects (Figure 1). Thus, studies pertaining to general economic and social effects of advertising were excluded;
- (2) The study should report empirical results or discuss (review) empirical results of other studies;
- (3) The study should be recent (i.e., after 1960) and reflect the current, more systematic approach to studying advertising effects;
- (4) The study should be written in English;
- (5) The majority of the studies were published in marketing journals. Relevant books and unpublished studies (working papers) also were included. Although this led to some variation in quality, the key consideration was whether the study (potentially) contributed to the stock of knowledge of how advertising works.

We make no claim that this selection is complete. There will be practitioner and academic papers we missed. Furthermore, practitioners employ models of how their advertising works that they do not publish. The studies selected, however, as far as we can determine, include

every significant and current theory of how advertising works. Our study also has an international flavor, because it examines research by academics and practitioners in the United States, United Kingdom, Australia, and the Netherlands.

Our approach to evaluating the models and empirical results involved the following two steps: (1) Classification of the different models and theories of advertising effects, in other words, developing a taxonomy of models of how advertising works. We discuss the theoretical principles for each class of models and their most robust empirical findings subsequently; and (2) Generalizations based on the empirical findings. We chose the literature review approach (Bass and Wind 1995) to forming such generalizations rather than meta-analysis or content analysis because of the diverse designs of the studies considered (field, single source, experimental) and the measures employed (advertising-sales elasticities, purchase intentions, awareness, and so forth). Each generalization was supported by at least two different conclusions.

Taxonomy

Our taxonomy, summarized in Table 1, describes the various models and theories of how advertising works. It builds progressively from models that assume no intermediate effects (market response is "-" in our notation) to models that assume only one type of intermediate effect (C or A). Then it describes models that assume more than one type of intermediate effect in a certain hierarchy (persuasive hierarchy models, CA, or low-involvement hierarchy models, CEA), followed by models with varying hierarchies of effects (integrative models, [C][A][E]), and finally models that assume no hierarchy of effects at all (hierarchy-free, NH).

Market response models, which are econometric models of market response to advertising, do not consider intermediate effects at all. They typically relate advertising, pricing, and promotional measures to behavioral (sales or brand choice) measures. This has the advantage of employing objective (secondary) data and eliminating intermediate measurement uncertainties.

According to one historian (Nevett 1982), advertising, from its earliest days, has been regarded as providing strictly factual information. Such models of advertising purely as information transfer are termed "cognitive information" (C). C models rely heavily on economics (Nelson 1970, 1974; Robinson 1933; Stigler 1961; Telser 1964) and assume consumer decisions to be rational. Conversely, pure affect mod-

els (A), which appeared later in the literature (e.g., Zajonc 1980), pay little or no attention to cognition.

As we noted previously, the main stream of advertising research began with AIDA. Originally a model of personal selling, it was adapted only later for advertising (Strong 1925, p. 76). From this emerged the class of persuasive hierarchy models (Table 1), summarized by Kotler (1997, p. 611) as Response Hierarchy Models: AIDA, hierarchy-of-effects (Lavidge and Steiner 1961), and innovation-adoption (Rogers 1962). All these models follow the cognitive stage → affective stage → behavior sequence, or CA in our notation, meaning that cognition is followed by affect. Note that C always appears before A, advertising is perceived as persuading the consumer to buy (more), and E does not feature at all.

Recognition of the importance of product trial and usage experience led to another class of models, which we call “low-involvement hierarchy” models (e.g., Ray 1973). In this category, advertising merely serves to reinforce behavior rather than causing it. Advertising may create awareness (C), but affect and brand preferences are formed after product trial and experience, thus, cognition → experience → affect → behavior, or CEA in our notation. This class of models is sometimes known as the “weak theory” of advertising (Jones 1990), to distinguish it from the “strong” or persuasive hierarchy (CA). This is similar to operant, or instrumental, conditioning in which learning follows performance (Skinner 1938; Thorndike 1911).

More complex hierarchies have been classified as “integrative,” or (C)(A)(E) in our notation, where the brackets indicate that the order of a particular effect (C, A, or E) in the sequence is not fixed and depends on the context. For example, the FCB grid (Vaughn 1980, 1986) has C, A, and E in various sequences, depending on the consumer’s involvement in the product category and whether consumer choice, in that category, was determined primarily by cognition or affect. Our final category is hierarchy-free models, for which no particular processing sequence is assumed. This category is the most sparsely populated, but recent applications of postmodernism and anthropology to advertising effects suggest that this class can be expanded. Modern neuroscience, as we discuss subsequently, has important insights for advertising research.

Models and Empirical Results on How Advertising Works

Market Response Models (–)

Market response models typically relate advertising, price, and promotional measures directly to purchasing behavior measures such as sales, market share, and brand choice in a regression or logit model framework. For example, measurement of loyalty would be based on repeat purchasing behavior rather than an attitude of mind. Market response models can be classified further into aggregate level (Bass and Clarke 1972; Blattberg and Jeuland 1981; Hanssens, Parsons, and Schultz 1990; Little 1979; Rao 1970; Rao and Miller 1975; Rao 1986; Zufryden 1987) and individual level (Deighton, Henderson, and Neslin 1994; Pedrick and

Zufryden 1991; Tellis 1988; Winer 1991). Aggregate-level studies use market-level data, such as brand advertising expenditures or gross rating points, and brand sales or market share. Individual-level studies use measures such as individual brand choice and the number of exposures for an individual (or household) derived from single source data.

Many aggregate-level econometric studies interested in the long-term, or carryover, effects of advertising (Bass and Leone 1983; Broadbent 1984; Clarke 1976; Dhalla 1978; Srinivasan and Weir 1988) conclude that the duration of advertising effects depends on the data interval (weekly, bi-weekly, monthly, and so forth). Intermediate interval data (bimonthly, quarterly) appear to provide more realistic results, though the issue of the appropriate data interval is still open. Clarke (1976) and Assmus, Farley, and Lehmann (1984), in meta-analytic studies, suggest that 90% of the advertising effects dissipate after three to fifteen months. Leone (1995), in an empirical generalizations study, suggests that the range be narrowed to six to nine months. Dekimpe and Hanssens (1995, p. 18) apply persistence modeling, a time series methodology, to monthly data from a home improvement retail chain and conclude that the effects of advertising “did not dissipate within a year.” This apparent contradiction with Clarke (1976) and Leone (1995) was attributed to the evolving nature (in terms of sales and advertising) of the industry under study. Winer (1980), using split cable panel data from an undisclosed, frequently purchased category, finds no permanent advertising effect on consumption, apart from a transitory effect. This transitory effect was found to last for approximately 16 weeks for one brand and at least 32 weeks for another, both within the bounds suggested by Assmus, Farley, and Lehmann (1984). In contrast with the previously cited studies, which used aggregate-level data, Mela, Gupta, and Lehmann (1997) use individual-level data on purchases of an unnamed product category and conclude that advertising helps a brand by making consumers less price sensitive and decreasing the size of the nonloyal segment. Promotions, conversely, make consumers, especially nonloyals, more price sensitive.

A large-scale, single-source study by Lodish and colleagues (1995a) concludes that increased advertising weights increased the sales of established brands in only 33% of cases and in 55% of cases for new brands. The implication, consistent with empirical results reported by Parsons (1975), Arora (1979), and Parker and Gatignon (1996), is that advertising elasticities are dynamic and decrease during the product life cycle. Winer (1979), using data published for sales of the Lydia Pinkham patent medicine, finds that though carryover effects decline over time, current advertising effects increase during the same period. Although the first result is consistent with the product life cycle theory, the second result is attributed to the ability of that particular product to attract more new purchasers rather than retain loyal customers. In a study of similar design to their first, Lodish and colleagues (1995b) suggest that short-term effects are a prerequisite for the achievement of long-term effects, a conclusion also reached by Jones (1995a) in another study using single-source data across several product categories. Lodish and colleagues’ (1995a, b) two studies use an extensive database compiled by Information Re-

sources for the “How Advertising Works” projects (see for example, Advertising Research Foundation [ARF] 1991, p. 13). Advertising elasticities consistently were found to be low, typically in the range 0 to .2 (Assmus, Farley, and Lehmann 1984; Lodish et al. 1995a), and short-term promotional effects were shown to be larger than the advertising effects (Deighton, Henderson, and Neslin 1994; Jones 1995a; Tellis 1988). The studies by Tellis (1988), Deighton, Henderson, and Neslin (1994) and Jones (1995a, b), along with the original single-source study conducted by McDonald (1971), suggest that short-term advertising effects diminish fast. More specifically, after the third exposure, response to advertising levels off. When three exposures per household are achieved, advertisers therefore should focus on reach (see also Pedrick and Zufryden 1991, 1993). These results are in general agreement with the conclusions of Naples’s (1979) review of various empirical advertising studies: “An exposure frequency of two within a purchase cycle is an effective level” (p. 64), and “by and large, optimal exposure frequency appears to be at least three exposures within a purchase cycle” (p. 67). The relative effect of media reach and frequency on purchasing behavior also has been the focus of other market response researchers (Danaher 1988, 1989, 1991; Leckenby and Kishi 1984; Metheringham 1964; Pedrick and Zufryden 1991, 1993; Rust 1986; Rust and Leone 1984). The market response category findings are summarized as conclusions 1 through 8 in Table 2.

Cognitive Information Models (C)

This class of models assumes that consumer preferences, for example, the relative weights of attribute importance, are not changed by advertising and that consumer decisions are only rational. Advertising provides information and/or utility in reducing search costs, for example, shopping time (Bharadwaj, Varadarjan, and Fahy 1993; Nelson 1970, 1974). An advertisement in the Yellow Pages saves the customer having to go from store to store. Goods are classified into two major categories: experience and search (Nelson 1974), with experience subdivided into high, in which considerable use is required before quality can be assessed by the consumer, and low (Davis, Kay, and Star 1991). For search goods, product quality and the truth of the advertising claim can be judged by inspection (without trial) and evaluation of relevant objective information (e.g., price). A third category, credence goods (Darby and Karni 1973), can be used to refine the preceding classification. For credence goods, the average consumer cannot determine the quality of the good even after experience (e.g., designer clothes). Advertising is expected to be more effective for experience and credence than for search goods because it provides information that inspection does not (Nelson 1974; Verma 1980). Classification of goods into search and experience (or credence) may be problematic, because many goods (e.g., autos) consist of both search (e.g., leather seats) and experience (e.g., driving feel) attributes. A distinction, therefore, between search and experience attributes, rather than goods, appears more accurate and realistic (Wright and Lynch 1995).

Firms producing high-quality products may have large advertising expenditures to signal their quality to the con-

sumers, thus achieving long-term advantage (Nelson 1974; Verma 1980). High-quality image and differential advantages reduce consumer price sensitivity and permit a gradual increase in price, according to the market power theory (Comanor and Wilson 1974, 1979). The economics of information theory (Stigler 1961; Telser 1964), in contrast, suggests that advertising increases price sensitivity because it facilitates consumer search (Chiplin and Sturgess 1981; Eskin and Baron 1977). Empirical testing of the two competing theories brings mixed results. Using aggregate data, Wittink (1977) and Eskin and Baron (1977) find support for the economics of information theory. Using individual-level data, Krishnamurthi and Raj (1985) support the market power theory, whereas Kanetkar, Weinberg, and Weiss (1992) favor the economics of information explanation. Lambin (1976) uses brand-level data to conclude that advertising leads to lower price sensitivities. Finally, Eastlack and Rao (1986), after analyzing advertising experimental data for V-8 vegetable juice, conclude that the combined effect of advertising and a price increase was a temporary increase in price sensitivity, which then returned to historical levels. In the long run, therefore, advertising allowed a price increase while maintaining the price sensitivity level. In a meta-analytic study, Kaul and Wittink (1995) conclude that non-price advertising decreases price sensitivity, whereas price advertising increases price sensitivity and ultimately leads to lower prices. This confirms prior conjectures about the differential effects of price and nonprice advertising by Boulding, Lee, and Staelin (1992), Farris and Albion (1980), and Krishnamurthi and Raj (1985).

We should note the emphasis given to factual information by practitioners. Reeves (1961) created his unique selling proposition as part of the long-standing recognition of the idea, now called *positioning*, that a brand must differentiate itself, if possible, through tangible product attributes and then communicate that differentiation positively. Ogilvy (1983, p. 159) pays tribute to Dr. Johnson’s theory that “promise, large promise, is the soul of an advertisement” and stresses the informative role of advertising. Their work and that of other practitioners (e.g., Fletcher 1992) may be largely affective, but their publications emphasize the cognitive. The findings from the cognitive category are summarized as conclusions 9 through 12 in Table 2.

Pure Affect Models (A)

In contrast to the economics paradigm, some theories pay little or no attention to cognition but focus on affective responses, the familiarity and feelings advertisements may evoke (Aaker, Stayman, and Hagerty 1986; Alwitt and Mitchell 1985; Peterson, Hoyer, and Wilson 1986). One class of these theories, the so-called “mere exposure” theories, suggests that awareness of the advertisement is not necessary, though awareness of the brand is. According to this approach, consumers form their preferences on the basis of elements such as liking, feelings, and emotions induced by the advertisement or familiarity triggered by mere exposure to the advertisement, rather than product/brand attribute information (Batra and Ray 1986; Gardner 1985; Holbrook and Batra 1987; Janiszewski and Warlop 1993; Mitchell and Olson 1981; Shimp 1981; Srull 1983; Stuart, Shimp, and

TABLE 2
Summary of Empirical Findings

Model	Topic	Conclusion	Studies
(-)	Short-term effects: advertising elasticities	<p>1. Advertising elasticities range from 0 to .20.</p> <p>2. Advertising elasticities for durables are higher than those for nondurables.</p> <p>3. Promotional elasticities are up to 20 times higher than advertising elasticities.</p>	Assmus, Farley, and Lehmann 1984; Leone and Schultz 1980; Lodish et al. 1995a. Leone and Schultz 1980; Sethuraman and Tellis 1991. Lodish et al. 1995a; Sethuraman and Tellis 1991.
(-)	Dynamic advertising elasticities	4. Advertising elasticities are dynamic and decrease during the product life cycle. Advertising elasticities are therefore higher for new than for established brands.	Arora 1979; Lodish et al. 1995a; McDonald 1992; Parker and Gatignon 1996; Parsons 1975; Winer 1979.
(-)	Long-term effects: advertising carryover	<p>5. Purchase reinforcement and habitual loyalty effects are stronger than advertising carryover effects.</p> <p>6. 90% of the advertising effects dissipate after three to fifteen months.</p>	Givon and Horsky 1990. Assmus, Farley, and Lehmann 1984; Clarke 1976; Leone 1995.
(-)	Advertising response functions, reach, and frequency	<p>7. Returns to advertising are usually diminishing; the first exposure is the most influential for short-term sales or share gains.</p> <p>8. For frequently purchased package goods, share returns to advertising diminish fast, typically after the third exposure. After the third exposure, advertisers should focus on reach rather than frequency.</p>	Deighton, Henderson, and Neslin 1994; Jones 1995a; McDonald 1971; Pedrick and Zufryden 1991; Simon and Arndt 1980; Tellis 1988. Deighton, Henderson, and Neslin 1994; Krugman 1972; McDonald 1971; Naples 1979; Pedrick and Zufryden 1991, 1993; Tellis 1988.
(C), (CEA)	Advertising for search, experience, and ambiguous goods	9. Advertising is more effective for experience than search (ambiguous) goods. Furthermore, advertisements for search goods contain more product-oriented information than do experience goods advertisements.	Hoch and Ha 1986; Nelson 1974; Verma 1980.
(C)	Advertising as a signal of product quality	10. Increased advertising signals high quality when costs of producing quality are low and consumers are less responsive to advertising.	Tellis and Fornell 1988.
(C)	Advertising effects on consumer price sensitivity	<p>11. Price advertising increases price sensitivity, whereas nonprice advertising decreases price sensitivity. Furthermore, price sensitivity leads to lower prices.</p> <p>12. When consumers rely on memory to retrieve product information, advertising increases price sensitivity; when consumers rely on point-of-purchase information, advertising decreases price sensitivity</p>	Kaul and Wittink 1995. Mitra and Lynch 1995.
(A)	Advertising and affective responses	13. Advertising need not be informative to be effective, nor need be verbal only; emotional and visual elements enhance preference.	Aaker and Norris 1982; Gorn 1982; Healy and Kassarian 1983; Krugman 1977; Resnik and Stern 1977; Rossiter and Percy 1978, 1983; Sawyer 1981; Stern, Krugman, and Resnik 1981; Stern and Resnik 1991; Weinberger and Spotts 1989; Zajonc 1980; Zajonc and Markus 1982.

Model	Topic	Conclusion	Studies
(CA)	Brand attitude formation	14. Brand attitudes are not formed exclusively on the basis of beliefs about the product/brand attributes. They also can be based on emotions. For example, attitude toward the ad is a significant moderator in the formation of brand attitudes.	Aaker, Stayman, and Hagerty 1986; Batra and Ray 1986; Brown and Stayman 1992; Burke and Edell 1989; Homer 1990; MacKenzie and Lutz 1989; MacKenzie, Lutz, and Belch 1986; Smith 1993.
(A), (CA)	Ad likability, attitude toward the ad	15. Ad likability highly correlates with brand preference. 16. Attitude toward the ad affects brand attitudes only in nonelaborate situations.	Biel 1990; Haley and Baldinger 1991. Dröge 1989.
(CA)	Effects of message repetition on awareness, recall, and attitude formation	17. In low-involvement situations, repetition of different versions of an advertisement prevents early decay of advertising effects. 18. Recall and attitudes can be maintained at a high level if an advertising campaign consists of a series of advertisements.	Cacioppo and Petty 1985. Calder and Strenthal 1980; Rao and Burnkrant 1991; Zielske 1959; Zielske and Henry 1980.
(CA)	Attitude–behavior consistency	19. Attitude–behavior correlations range between 0 and .30.	Fazio, Zanna, and Cooper 1978; Wicker 1969.
(CA)	Sequence of intermediate effects	20. The concept of a single hierarchy of effects is not supported.	Barry and Howard 1990; Heeler 1972; Palda 1966; Ray 1973; Rothschild 1974; Sawyer 1971; Strong 1972.
(CEA)	Advertising–experience interaction	21. Product usage experience dominates advertising influence on beliefs, attitudes, and behavior. 22. Advertising is superior to product usage in communicating quality for credence goods; product experience dominates advertising for search and low-experience goods (attributes). 23. Advertising has a stronger effect on consumers with high behavioral loyalty. 24. Advertising is relatively more effective when it precedes usage experience (predictive framing), in particular when such experience is negative.	Hoch and Ha 1986; Marks and Kamins 1988; Olson and Dover 1979; Smith 1993; Smith and Swinyard 1983, 1988; Tellis 1988; Winter 1973. Wright 1990; Wright and Lynch 1995. Deighton, Henderson, and Neslin 1994; D'Souza and Rao 1995; Raj 1982; Tellis 1988. Deighton 1984; Deighton and Schindler 1988; Hoch and Ha 1986; Levin and Gaeth 1988; Smith 1993.
([C][A][E]), (NH)	Advertising process interaction	25. The relative importance of C and A depend on context. Beliefs generally build cumulatively with awareness, trial word of mouth, promotions, and advertising. These effects act interactively and simultaneously.	Deighton 1984, 1986; Franzen 1994; Kupfermann 1991; Martin 1991; Rose 1993; Smith and Swinyard 1982, 1983, 1988; Sutherland 1993; Vaughn 1980, 1986.

Engel 1987; Zajonc 1980, 1984; Zajonc and Markus 1982). Two of these theories, namely, response competition (Harrison 1968) and optimal arousal (Berlyne 1960, 1966; Crandall 1970), suggest that unfamiliar advertising messages create hostility and take longer to reach their optimal effectiveness. That may describe the advertising “wear-in” effect observed frequently in advertising studies (Blair 1987; Pechmann and Stewart 1989): A minimum (threshold) number of exposures is necessary for the advertisement to have an effect on the consumer. The two-factor theory (Berlyne 1970) also suggests a wear-out effect: After several expo-

sure, the effect of advertising decreases. Thus, the advertising response function has an inverted-U shape.

Affective responses to advertising can be classified further into two types: one leads to the formation of an attitude toward the brand, and one leads to the formation of an attitude toward the ad, or an expression of the likability of the advertisement itself (Mitchell and Olson 1981; Shimp 1981; for a meta-analysis of attitudes toward the ad studies, see Brown and Stayman 1992). Empirical evidence regarding affective responses and ad likability is based on both experimental and field research. Gorn (1982), in a classical con-

ditioning experiment, finds significant effects of background music on preference. Bierly, McSweeney, and Van-nieuwkerk (1985), in another experimental study, also find music effects on preference ratings, and Janiszewski (1988) concludes that affective processes can be formed independently of cognitive processes. Both the cumulative effect of liking and its correlation with sales seem to generalize empirically, but not uniformly. The ARF copy research project (Haley and Baldinger 1991; Joyce 1991) and the study on U.S. prime-time commercials by Biel (1990) suggest that ad likability is correlated positively with behavior (preference). However, Hall and Maclay (1991) and Stapel (1987) suggest that the influence of ad likability on brand preference is not strong. Brown (1991) suggests that ad likability has a long-term effect.

The absence of cognition suggested by pure affect models is difficult to show, because cognition usually intervenes in measurement. Asking about feelings brings cognitive processes into play and induces cognitive bias, a bias toward cognitive methods and models (Sawyer 1981). Noncognitive measures have been developed, such as projective techniques and the Facial Action Coding System developed by Ekman and Friesen (1978). Bogart (1996, p. 73) notes skin conductivity, pupil dilation, and "brain waves" measured by EEG (electroencephalograph). Unfortunately, none of these is yet reliable for measuring advertising affect (Scherer and Ekman 1982). Rothschild and Hyun (1990) use EEG technology to show that television advertisement recognition was increased when the right brain was employed initially but the left hemisphere dominated during the following seconds. Bilateral processing was greatest for rational commercials and least for emotional ones, with mixed-appeal commercials between those extremes. Cognitive bias problems aside, models based purely on affective responses are rather improbable, because some awareness appears to be a necessary condition for advertising effectiveness (Franzen 1994). However, Shapiro, Heckler, and MacInnis (1997) show how preattentive (noncognitive) processing of advertisements leads to more favorable ad evaluation than attentive processing. Advertising typically works on both the cognitive and affective planes (Agres, Edell, and Dubitsky 1990; Holbrook and O'Shaughnessy 1984). This class of models (A) essentially introduced affective responses to the study of advertising effects, and they consistently have been shown to be important (Aaker and Stayman 1990a, b). Conclusions 13, 15, and 16 in Table 2 summarize the findings from the A category.

Persuasive Hierarchy Models (CA)

The idea that, if advertising is to promote sales, it must inform and then persuade has intuitive appeal. Persuasive models introduced the concept of a hierarchy of effects, that is, an order in which things happen, with the implication that the earlier effects, being necessary preconditions, are more important. The hierarchy concept has played a large part in the development of advertising research. The number of stages may be increased or refined (Aaker and Day 1974; ARF 1961; Colley 1961; Greenwald 1968; Lavidge and Steiner 1961; McGuire 1968, 1978; Robertson 1971; Rogers 1962; Wright 1973), but the underlying pattern is cognition

→ affect → behavior (CA). Two important mediating factors (the filters in Figure 1) of individual responses to advertising, involvement and attitude toward the ad, have been studied extensively within the persuasive hierarchy framework (Batra and Ray 1985; Burke and Edell 1989; Cacioppo and Petty 1985; Homer 1990; MacKenzie and Lutz 1989; MacKenzie, Lutz, and Belch 1986; Petty, Cacioppo, and Schumann 1983; Sawyer and Howard 1991). Because we discussed the concept of attitude toward the ad in the previous section, we should first briefly discuss the concept of involvement before considering persuasive hierarchy models and their empirical results.

Krugman (1965, 1967) operationalizes involvement as the number of linkages made between the advertised product and the consumer's life during exposure to an advertisement. Several definitions since then have followed (e.g., Houston and Rothschild 1978; Lastovicka and Gardner 1979; Mitchell 1981; for reviews, see Greenwald and Leavitt 1984; McWilliam 1993). Rothschild (1984, p. 127) defines involvement as "an unobservable state of motivation, arousal, or interest. It is evoked by a particular stimulus or situation and has drive properties. Its consequence are types of searching, information-seeking and decision making."

One of the most comprehensive persuasive models is the Elaboration Likelihood Model (ELM) (Petty and Cacioppo 1981a, b). The ELM distinguishes between elaborate (attribute evaluation) and nonelaborate (paying attention to execution elements, for example, celebrity endorsers) information evaluation. Elaboration is essentially cognitive, and the model introduces alternative paths for consumer responses to advertising. The two alternative paths, however, follow the same CA sequence. Other multidimensional versions of the persuasive hierarchy paradigm have been proposed by MacInnis and Jaworski (1989), MacInnis, Moorman, and Jaworski (1991), and Bloom, Edell, and Staelin (1994). More specifically, MacInnis and Jaworski (1989) propose a model with six levels of mental processing (intermediate effects): (1) feature analysis leading to mood-generated affect, (2) basic categorization leading to pure affect transfer, (3) meaning analysis leading to heuristic evaluation, (4) information integration leading to message-based persuasion, (5) role-taking leading to empathy-based persuasion, and (6) constructive processes leading to self-generated persuasion.

The MacInnis and Jaworski (1989) model integrates the brand-processing (Gardner, Mitchell, and Russo 1978; Mitchell 1980) and four-level audience involvement (Greenwald and Leavitt 1984) models. Greenwald and Leavitt, after reviewing definitions of involvement, relate levels of involvement to stages of consumer information processing as follows: (1) preattention related to sensory buffering and feature analysis; (2) focal attention and channel selection, perceptual and semantic processing; (3) comprehension related to syntactic analysis; and (4) elaboration related to conceptual analysis. According to Greenwald and Leavitt's model, complex advertisements, which require inferences of brand quality based on persuasive arguments, should require a high level of involvement—mainly elaboration. In contrast, advertising that links a brand to attractive objects should only require focal attention—a

lower-level type of involvement. Bloom, Edell, and Staelin (1994) use the Fishbein-Ajzen (1975) framework of attitude formation to distinguish among communication, brand, and product category beliefs. These three types of beliefs lead to corresponding forms of attitudes (attitude toward the ad, brand, and product category), which interact in influencing behavior.

Batra and Ray (1985), still within the persuasive hierarchy category, suggest an alternative to ELM. Citing evidence from Bagozzi and colleagues (1979), Bagozzi and Burnkrant (1979), and Bagozzi (1981), they challenge the Fishbein-Ajzen attitude formation model (Fishbein and Ajzen 1975; Lutz 1975, 1991) adopted by ELM, in which attitudes toward the brand are “utilitarian,” or based exclusively on beliefs about hard product attributes. They suggest that consumers may develop a “hedonic” effect based on pure liking without an evaluation of hard product attributes (Hirschman and Holbrook 1982; Holbrook and Batra 1987). The multidimensionality in consumer response, according to Batra and Ray’s framework, is therefore the result of the different ways attitudes may form (utilitarian versus hedonic), rather than of the degree of elaboration. This suggests that measures of affect should include both utilitarian and hedonic components.

Applications of persuasive hierarchy models highlight the importance of involvement as a moderator of advertising effects. Using the ELM framework, Petty, Cacioppo, and Schumann (1983) suggest that highly involved consumers choose an elaborate way to evaluate message information (relying on message argument quality to form their attitudes and purchase intentions), whereas low-involvement consumers choose a less elaborate way (relying on the celebrity status of the product endorser). Cacioppo and Petty (1985) conclude that repetitions of different versions of an advertisement have a positive effect on low-involvement persons but no effect on high-involvement persons. In other words, repetition of a series of advertisements can prevent (or delay) wear-out. Similar results on the differential effects of repetition (single versus series of advertisements) are suggested by Zielske (1959), Zielske and Henry (1980), and Rao and Burnkrant (1991), who find that varied ad executions maintained ad recall at high levels. Batra and Ray (1986) find that, in low-involvement situations, affective responses influence brand attitudes more positively than in high-involvement situations. Similarly, using the ELM framework, Dröge (1989) shows that attitude toward the ad positively affects attitudes toward the brand only in low-involvement situations. By enhancing brand beliefs to include nonutilitarian attributes, Mittal (1990) shows that the (still significant) contribution of attitude toward the ad as a predictor of behavior is reduced.

Correlations between measures of attitude (affect) and behavior reported in the literature are usually low (between 0 and .30; Fazio, Zanna, and Cooper 1978; Wicker 1969), which prompted some researchers to reject the persuasive hierarchy (Heeler 1972; Palda 1966; Ray 1973; Rothschild 1974; Sawyer 1971; Strong 1972). Barry and Howard (1990) report that only two studies have tested the sequence properly (Batra and Vanhonacker 1986; Zinkhan and Fornell 1989), with inconclusive results. Some support for the per-

suasive hierarchy sequence, however, is provided by earlier work (Assael and Day 1968; O’Brien 1971) but has not been replicated since.

Our conclusions from this research are backhanded: Although there is little support for the persuasive (CA) hierarchy per se, there is considerable support for a multipath approach such as ELM; namely, different people respond to different advertisements in different ways, depending on their involvement. Although attitudes correlate poorly with behavior, possibly because of cognitive bias (which we discuss subsequently), affect is relatively more important in low-involvement and nonelaborate situations. Cognitive and affective beliefs may be independent in these circumstances (Wilson et al. 1989). Conclusions 14 through 20 in Table 2 summarize the findings from the CA category.

Low-Involvement Hierarchy Models (CEA)

The main alternative to the persuasive approach is cognition → experience → affect (CEA), though “cognition” may mean no more than passing awareness in categories in which the consumer has low involvement. Ehrenberg’s (1974) awareness → trial → reinforcement model is typical of this class of models and suggests that product preferences are formed after an initial trial. In low-involvement hierarchies, product experience is the dominant factor, and advertising reinforces existing habits, frames experience, and defends the brand’s consumer franchise (Ehrenberg 1994; Pechmann and Stewart 1989). In our notation, these experiences, habits, and recollections are collectively termed “experience.” This category is a low-involvement hierarchy (Harris 1987; Ray 1973; Smith and Swinyard 1978, 1982; Swinyard and Coney 1978), because it is associated with the routinized choice behavior more likely to occur in low-involvement situations.

Empirical applications suggest that product usage experience has a greater impact on beliefs, attitude formation, and choice than advertising, which instead reinforces habits or frames usage experience (Alba, Hutchinson, and Lynch 1991; Deighton, Henderson, and Neslin 1994; Marks and Kamins 1988; Olson and Dover 1979; Smith 1993; Smith and Swinyard 1983, 1988; Tellis 1988; Winter 1973). More specifically, Smith (1993) finds that advertising tends to mitigate a negative trial effect when it precedes trial but has no impact on beliefs and attitudes when trial is positive. Levin and Gaeth (1988) and Hoch and Ha (1986) provide evidence that, when exposure precedes usage experience, advertising is relatively more effective. Both empirical results suggest that advertising’s framing effect is more persistent when it precedes usage experience or that advertising has a predictive framing effect. Similar evidence is found by Deighton (1984) and Deighton and Schindler (1988). Hoch and Ha (1986) also suggest that advertising’s framing effect is stronger when the product category is ambiguous, that is, when quality is hard to determine. To the extent that high-experience goods (attributes) can be characterized as ambiguous, this result is in accordance with the cognitive information conclusion on advertising effectiveness for search and experience goods (attributes). The reinforcing role of advertising is supported by Raj (1982), Tellis (1988), Deighton, Henderson, and Neslin (1994), and D’Souza and

Rao (1995), in that advertising has a greater effect on loyal consumers. Conclusions 9 and 21 through 24 in Table 2 summarize the findings from the CEA category.

Integrative Models (C)[A][E]

In this class of models, different hierarchies of C, A, and E are assumed, depending on the context in which advertising operates. For example, product category and level of involvement may determine the order of effects. In some of these models, context also may determine the strength of each effect.

The FCB grid (Vaughn 1980, 1986) uses involvement (high/low) and think/feel (C or A as the dominant consumer motivator) as the two dimensions for classifying product categories. The type of involvement used by the FCB grid is therefore category involvement and not brand, personal, or situational involvement. The primary grid validation study was conducted in the United States among 1800 consumers across 250 products (Vaughn 1986). It was then extended to more than 20,000 interviews in 23 countries. The FCB study carried the operationalization of involvement from laboratory to survey. The managerial implication was that advertising should be designed according to the quadrant in which the product category belonged. Frequently purchased packaged goods, for example, were likely to be low involvement and affect motivated. McWilliam (1993) verifies that involvement was determined by category, not by brand. Rossiter and Percy (1997) suggest a development of the FCB grid. The Rossiter-Percy grid (see also Rossiter, Percy, and Donovan 1991) uses awareness as a necessary condition for the effectiveness of advertising and replaces the think/feel dimension with a more directly motivational one (informational/transformational). They also distinguish between product category and brand choices and prescribe advertising tactics that fit the cells of their grid, as defined by involvement and motivation.

Smith and Swinyard (1982) distinguish between higher order (strongly held) and lower order (weakly held) beliefs to introduce context specificity in the way advertising affects the individual consumer. According to their Information Integration Response Model (IIRM), for low-involvement goods, for which trial is easy and inexpensive (e.g., frequently purchased products), advertising is more likely to affect lower order beliefs, mostly by increasing awareness and introducing uncertainty. Such beliefs are updated after product trial and experience. Experience would resolve uncertainty, confirm or disconfirm lower order beliefs, and either lead to commitment to or rejection of the brand. Higher order beliefs therefore are formed only after many trial purchases. Such a scenario is consistent with the CEA or low-involvement hierarchy suggested by Ray (1973) and Ehrenberg (1974). The distinction between trial and committed purchases in the IIRM is similar to that proposed by Ehrenberg (1974) and Robertson (1976). For high-involvement products for which trial is risky and expensive (e.g., household appliances), higher order beliefs are formed immediately, but they need not be based exclusively on advertising. Other external information sources (word of mouth, magazine articles) and prior experience also should affect higher or-

der belief formation. In this case, advertising's effects are expected to follow the persuasive hierarchy CA, but because of the influence of other sources, the effect of advertising may not be strong.

Deighton's (1984, 1986) two-stage model is conceptually similar to Smith and Swinyard's (1982) IIRM. In the first stage, advertising provides initial arousal and helps develop expectations (or hypotheses) about the advertised brand, similar to the lower order belief formation stage in the IIRM. The second stage is the product trial/experience stage, in which initial expectations are confirmed or disconfirmed. Because confirmation might not be immediate (i.e., after the first product trial), these two stages continuously interact with experience, updating expectations. Conceptually, the model can be perceived as a hierarchy in which C, E, and A exchange positions. Using experimental data, Deighton (1984) provides evidence for the existence of interactions between expectations and usage experience.

The (C)(A)(E) category evidence (mostly based on the application of the FCB grid) robustly supports the concept of involvement and the idea that C or A determining choice is dependent on the product category. The research assumes individual homogeneity, whereas we would expect involvement to be personally as well as product driven. No evidence supports the idea that consumers process advertising information in a hierarchic fashion. Conclusion 25 in Table 2 summarizes the findings from the (C)(A)(E) category.

Hierarchy-Free Models (NH)

Although most research falls more or less neatly into the previous six categories, we reserved a final section for all others. This proved to be the smallest category, which in itself provides some support for the classification methodology. This last category generally presents a more person-centered view of advertising, which can be thought of as an extension of a basic reinforcement model. It discounts the persuasive view of advertising (see CA) and rational decision making and suggests that advertising is part of a brand totality (King 1975; Lannon 1986, 1994; Lannon and Cooper 1983). The example of New Coke beating the "real thing" in product tests (attribute evaluation) but not in the marketplace (where the real thing is an established entity) is an illustration of the added value framework. It also could reflect the artificiality, or cognitive bias, of that type of research.

Anthropomorphizing the brand and accommodating it in the consumer's real world (Buttle 1991; Troiano 1996) may help the understanding of marketers and copywriters and clarify the nature of the communications they are creating, namely, brand advertising. The literature does not reveal, however, how these models actually work or how the effects of advertising may be measured. In other words, empirical validation is largely experiential. This category includes the treatment of brands as myths and advertising as myth-making, which was sourced from anthropology (Lannon 1994; Lévi-Strauss 1963; Stern 1995) and its neighbor, semiotics (Mick 1988). Stern also has analyzed advertising from the standpoints of feminist literary (1993) and drama (1994) criticism. In the latter, she usefully distinguishes sympathy (for the characters in television commercials) from empathy.

The length of the commercial gave time to recognize the plight of the protagonists but not to identify with them.

Postpositivist/postmodern researchers (e.g., Hirschman and Holbrook 1986) regard introspection and experiential learning as a valid methodology, alongside the hypothetico-deductive tradition that underlies most of the work reported here. The flavor of the debate between the various new “isms” and the traditionalists is provided by Hirschman and Holbrook (1986), Hunt (1992), Peter (1992), and Zinkhan and Hirschheim (1992). Much of this is philosophic; at the pragmatic level of how advertising actually works, we conclude that the postpositivists have, thus far, broadened the width of our understanding, but not the depth. For example, we have not found research to advise the practitioner as to which measures predict advertising effectiveness.

Neuroscience indicates that the brain receives and handles information in a parallel fashion (Rose 1993; Sutherland 1993). Although serial hierarchies exist to pass information from stage to stage, the different functions of the brain (in this case, C and A) receive information in parallel (Martin 1991, p. 335). Sensory information, apart from smell, reaches the brain through the thalamus, which relays it to the cognitive functions in the neocortex and, independently, the affective functions of the limbic system (Kupfermann 1991, p. 737). These in turn are massively interconnected, because higher cognitive functions affect feelings and emotions, and vice versa. It would thus seem likely that C and A, if they are both engaged at all, are engaged simultaneously and interactively. The human brain has been called the most complex structure in the universe (Fischbach 1992); thus, steps into this territory must be rather tentative. From the way the brain processes (advertising) information, it would appear that the hierarchy of effects concept is deeply flawed.

Generalizations

Our generalizations use the following criteria: (1) quality, objectivity, and consistency (Bass 1995; Bass and Wind 1995) and (2) scope, precision, parsimony, usefulness, and linkage with theory (Barwise 1995). According to conclusions 5, 6, 13, 14, and 20 through 24 of Table 2, C, A, and E are significant when studied in combination or in isolation. According to conclusions 5 and 6, advertising carryover requires E; conclusions 13 and 14 suggest that both C and A are required; and conclusions 20 through 23 stress the impact of E on beliefs, attitudes, and advertising effectiveness. Furthermore (see conclusion 24), beliefs, attitudes, and choice build cumulatively with awareness, trial, word of mouth, promotions/distribution, and advertising, any of which can be reinforcing or negative. In summary, the evolution of models from relatively simple (C) to more complex ([C][A][E]) has shown the persistent significance of all three key effects and suggests that omission of any one is likely to overstate the importance of the others. Our key conclusion, therefore, is that all three effects should be included consistently in studies of advertising effectiveness. Thus,

G₁: Experience, affect, and cognition are the three key intermediate advertising effects, and the omission of any one can lead to overestimation of the effect of the others.

According to conclusions 1, 3, 5, and 20 of Table 2, short-term advertising elasticities are low (0 to .2), approximately 20 times lower than promotions, and weaker than product usage experience effects. They are, however, significant for approximately one-third of established brands and half of new brands, which suggests that advertising is more effective in the beginning of the life of a product. Unfortunately, a similar generalization for the long-term effects of advertising cannot be made. Although studies (primarily of the market response models variety) consistently have provided evidence for the significance of such effects (Assmus, Farley, and Lehmann 1984; Clarke 1976; Dekimpe and Hanssens 1995; Lambin 1976; Leone 1995), there has been no general agreement for their duration. Thus,

G₂: Short-term advertising elasticities are small and decrease during the product life cycle.

According to conclusions 7 and 8 of Table 2, single-source and experimental studies have repeatedly and independently verified that one to three exposures per purchasing cycle are enough to trigger a consumer purchase. Accordingly, though more exposures would increase effectiveness, they represent poor value for the advertiser. This agrees with previous conclusions of Krugman (1972), Simon and Arndt (1980), and Lambin (1976). Lambin notes that “doubling the amount of advertising does not double sales, because the efficiency of increased advertising exposures always decreases beyond the threshold level” (pp. 97–98). Krugman (1972) suggests that the third exposure “clinches a decision” and further exposures have little value. These conclusions empirically reconcile both economic theories about diminishing returns to advertising and theories of learning and affective response that recognize that the first exposure is the most influential. The research supporting conclusions 7, 8, 17, and 18 was based largely on frequently purchased packaged goods for which the brand was already known to the consumer. Thus,

G₃: In mature, frequently purchased packaged goods markets, returns to advertising diminish fast. A small frequency, therefore (one to three reminders per purchase cycle), is sufficient for advertising an established brand.

Depending on product category, brand, consumer, and time factors, some intermediate effects are more important than others. According to conclusions 9, 10, 17, and 21 of Table 2, when product involvement is low and/or quality cannot be assessed objectively (e.g., credence or long-term experience goods), the impact of trial, usage, and the other forms of communication will be relatively low. In those cases, advertising could be relatively more important. In low-involvement situations (or for low-involvement products), consumers do not resort to counterarguing and rather passively receive the advertising message. Because low-involvement consumers do not engage in elaborate information processing, advertising messages in such situations should emphasize peripheral, affective cues (celebrity endorsers, execution elements, and so forth) rather than factual product information. The success of the recent humor-oriented Snickers campaign (*Advertising Age* 1996) exemplifies this situation. Similarly, credence, long-term experience, and high-quality goods brands should advertise

more to resolve ambiguity, enhance their quality perceptions, and ultimately increase their credibility. According to conclusion 20, experience is more important than advertising in mature markets, and conclusion 4 suggests that advertising is more effective in the early stages of the product life cycle. Conclusions 1 and 3 point out that, in the short-term, promotions are more effective than advertising.

The evidence noted in the previous paragraph suggests that the significance of the three key intermediate effects (C, A, and E) depends on the context in which advertising operates: C is more important than A for high-involvement goods, A is more important than C for low-involvement goods, E is the most important for mature, familiar products, and so forth. This suggests that a three-dimensional (C, E, A) space is a more realistic model of advertising effects than a hierarchical model. In such space, the weight (coordinate) of each dimension may vary depending on the advertising context.

The hierarchy framework, in which effects take place in a particular sequence, does not allow for interaction between effects. However, interactions between advertising and experience have been well documented, as is suggested by conclusion 23. What seems to be significant here is the importance (dominance) of each of the effects, rather than any temporal sequence, and that the importance of these effects is influenced by context-related factors, such as product category and stage of product life cycle. This concept of sequence lacks evidence in the literature (conclusion 20) and, using the opposing neuroscience conclusions from the hierarchy-free section, cannot be supported. Thus,

G₄: The concept of a space of intermediate effects is supported, but a hierarchy (sequence) is not.

According to conclusions 13 through 16 of Table 2, affect and advertising effectiveness are not exclusively, or at all, dependent on a person's cognitive response. Yet conventional forms of attitude or other affect measurement typically involve verbal questioning, which subjects responses to rationality by both respondent and researcher. At each level of subsequent formal processing, that is, as it is thought about, written down, and presented to others, cognition dominates affect.

Wilson and colleagues (1989) research attitude-behavior consistency in studies conducted between 1981 and 1988 and conclude that having to give reasons for attitudes disrupted those attitudes. In other words, the application of C to A disrupted A. They cite a film festival judge who had to resign because the necessary analysis destroyed his judgmental ability. If the respondent is an expert and has beliefs and knowledge that have long challenged each other interactively, this problem may disappear, though it did not for the film judge. But in the low-involvement, nonelaborate categories discussed in this article, it would be most acute. The issue, therefore, is how affect can be measured unobtrusively. We find it noteworthy that emotion has only surfaced relatively recently in the literature (mainly since 1980), even though the conclusions of Table 2 suggest that affect can be more important than cognition. We conclude that cognitive bias tends to both understate the role of affect and, because of measurement problems, misreport reality. Thus,

G₅: Cognitive bias interferes with affect measurement.

Directions for Further Research

G₄ suggests that the framework implied by persuasive hierarchy cannot be supported because it assumes a sequence of effects and ignores the role of experience, both the way it is affected by advertising and the way it affects subsequent behavior. Our discussion of G₄ further suggests that context should receive more attention in additional research, including

- Goal diversity: Some advertising seeks to convey factual information through cognitive appeals, some seeks liking and affect, and some merely reinforces habit;
- Product category: Advertising varies for high-, medium-, and low-involvement categories, durables and nondurables, and industrial and consumer products; high-quality brands should advertise more than their low-quality competitors;
- Competition: The extent of competitive advertising influences its effectiveness;
- Marketing mix: The extent of nonadvertising promotional activities;
- Stage of the product life cycle: The advertising effects sought for new products are different than those for mature or post-mature products; and
- Target market: The target consumers are themselves diverse; consumers may vary with respect to their involvement.

We propose the following five directions for further research, based on the preceding principles.

Integrating All Three Intermediate Effects

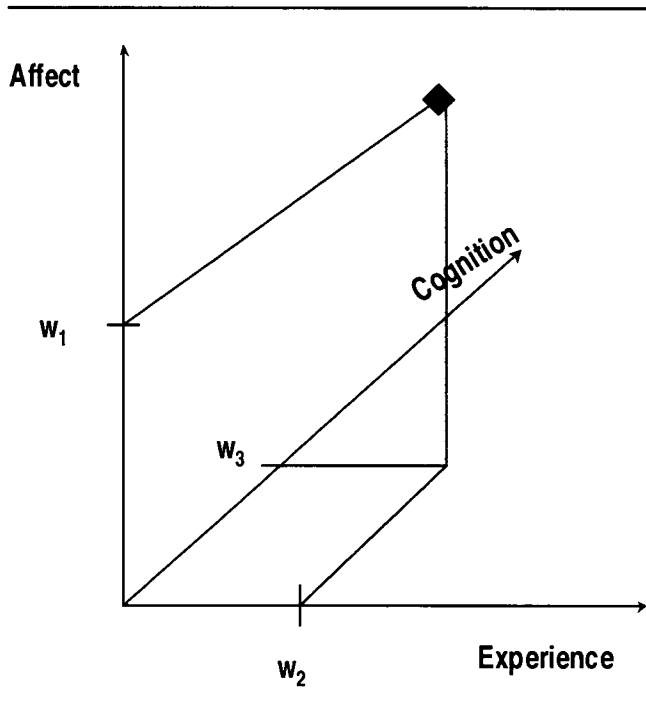
G₁ suggests that cognition, affect, and experience are the three key intermediate advertising effects, and G₄ presents them as a space rather than a hierarchy. Beliefs (cognition), for example, are not the only, or even a necessary, condition for the formation of attitudes. We thus propose a three-dimensional space (EAC Space) for the study and measurement of intermediate advertising effects (Figure 2). The coordinates of each dimension (w_1 , w_2 , and w_3) indicate the relative strength of the corresponding advertising effect and, therefore, the position occupied by a particular advertising message.

We propose that advertising's positioning (i.e., the coordinates in EAC Space) is determined by context. For example, a classified advertisement for a second-hand bicycle requires minimal experience and affect but extensive factual (cognitive) information (make, age, condition, price). In this case, w_3 should be considerably higher than w_1 and w_2 , and advertising should be positioned close to the cognition axis. Conversely, a television commercial for laundry detergent might minimally target C and concentrate on A, using, for example, warmth and liking (Aaker and Stayman 1990b), as well as reinforce habit (E). In this case, w_1 should be higher than w_2 and w_3 , and advertising should be positioned close to the affect axis. This positioning of advertising would help clarify the client-agency creative briefing process and track advertising performance.

Context

The discussion in the beginning of this section suggests that five factors characterize context: goal, category, competition, stage of the product life cycle, and target market. Any

FIGURE 2
EAC Space



of the context components could serve as a starting point, but we prefer to begin with the goal the advertising is supposed to achieve. Researchers conventionally have assumed that advertising's task is to increase sales or market share, but this is not necessarily true. Advertising may be used to support premium pricing or, in response to competitive activity, simply maintain share. If all brands in a category advertise to increase share, they cannot all succeed, and yet, any brand that decides to opt out would be likely to lose share. Experience goods and service brands need more creative and affective advertising and can expect a higher return than industrial and search goods brands, which must rely on a rational/informational approach. New products would need to advertise more than established ones to break through the clutter, achieve target awareness levels, and establish an image. Target market can dictate changes in advertising strategies even for the same brand. For example, a breakfast cereal brand will use a different appeal (mainly emotional and experiential) when its target audience is children rather than adults buying for their children.

The U.K. Institute of Practitioners in Advertising (IPA) biennially publishes winning case histories of effective advertising (IPA 1981-95). These and similar sources contain the context in which the advertising works and may be a suitable foundation for analysis of the effects of the diversity of advertising context. Future IPA competitors will be required to identify this contextual information.

Long-Term Effects

Most of the research we examine in this article has focused on short-term advertising effects, which generally are considered weak (G_2). Although fewer advertising studies have dealt with long-term effects, due perhaps to data availability and model complexity, both practitioners (e.g., the long-

term effects category in the IPA case histories) and academics (e.g., Leone 1995; Lodish et al. 1995a, b) have identified and measured them. The study of long-term effects, however, has been primarily at the market rather than the individual level. One exception, discussed in the Market Response Models section, is Mela, Gupta, and Lehmann's (1997) study, which used individual-level data, albeit from a single product category. We need more studies of long-term advertising effects based on individual-level, single-source data, which should build on and extend the results of previous single-source studies (Deighton, Henderson, and Neslin 1994; Kanetkar, Weinberg, and Weiss 1992; Mela, Gupta, and Lehmann 1997; Tellis 1988). Additional research also should concentrate on developing and comparing different methodologies for reliable measurement of long-term effects.

Combining Intermediate and Behavioral Effects

The preceding discussion of econometric market response and conceptual models of intermediate advertising effects (e.g., hierarchy of effects, affective response, integrative models) suggests that, in terms of knowledge contribution, these two streams of models complement each other. One stream (econometric studies) focuses on objective marketing mix and purchase behavior measures and studies the effects of advertising on purchase behavior to provide reliable estimates of the size of behavioral effects. The other stream (conceptual) focuses on prepurchase, intermediate effects of advertising using subjective measures of cognition (beliefs, recall, awareness) and affect (feelings, emotions, attitudes). Primarily experimental procedures isolate advertising effects from, say, promotional and competitive effects to determine the causality of behavioral effects. We propose that the consumer profile information that typically accompanies single-source household purchase data should be augmented by including cognitive, affective, and experience measures with respect to the particular brands and their advertising. When such databases are compiled, research should focus on the study of long- and short-term, main, and interactive effects of advertising, promotions, cognition, affect, and experience on consumer choice. An opportunity therefore exists to exploit the advantages of each stream and study both intermediate and behavioral effects in a single, natural, nonexperimental setting.

Cognitive Bias

More work is needed to calibrate measurement methodologies of affect. Empirical research so far has suggested that there are at least two components of affective response: utilitarian and hedonic. The traditional measurement of attitudes through cognitive analysis has been shown to be disruptive (Wilson et al. 1989) or inadequate (Batra and Ray 1986). Alternatives such as facial, projective, and other nonverbal measures are available, but none has become dominant in practice, an indication that perhaps they are not entirely satisfactory (Bogart 1996, p. 73). Further recognition should be given to the cognitive bias in subsequent data processing. The problem is not just with the collection of raw data from respondents, but also with the way it must be made explicit and verbalized when it is summarized and

transmitted from researcher to manager and thence through a series of increasingly senior client and agency executives. Similar considerations arise with academic research.

Conclusions

In this article, we have classified and reviewed prior research of intermediate and behavioral effects of advertising using a taxonomy of models starting from market response (-) and concluding with integrative ([C][A][E]) and non-hierarchical (NH) models. A major generalization (G₄) concerned the persuasive hierarchy (CA) category of models of advertising effects. Although such models have been actively employed for 100 years, we find them flawed on two grounds: the concept of hierarchy (temporal sequence) on which they are based cannot be empirically supported, and they exclude experience effects. These observations led us to our first direction for further research: We propose that

advertising be evaluated in a three-dimensional space using the dimensions of experience, affect, and cognition (the EAC Space). The emphasis of a particular advertising campaign therefore can be determined by the coordinates of the three dimensions. The EAC Space coordinates should be adjusted according to the context: product category, competitive environment, other marketing mix components, stage of the product life cycle, and target audience. We also suggest that behavioral (brand choice, market share) and cognitive and affective (beliefs, attitudes, awareness) measures be compiled in single-source databases to enable researchers both in academia and industry to test the interaction of context, intermediate effects, and long- and short-term behavior. In this effort, we also must relieve measures of affective responses from cognitive bias. This will be especially important for low-involvement products for which habit and affect are much more important than cognition.

REFERENCES

- Aaker, David and George Day (1974), "A Dynamic Model of Relationships Among Advertising, Consumer Awareness, Attitudes and Behavior," *Journal of Applied Psychology*, 59 (3), 281-86.
- and Donald Norris (1982), "Characteristics of TV Commercials Perceived as Informative," *Journal of Advertising Research*, 22 (April/May), 61-70.
- and Douglas M. Stayman (1990a), "Measuring Audience Perceptions of Commercials and Relating Them to Ad Impact," *Journal of Advertising Research*, 30 (August/September), 7-17.
- and ——— (1990b), "A Micro Approach to Studying Feeling Responses to Advertising: The Case of Warmth," in *Emotion in Advertising: Theoretical and Practical Explorations*, Stuart J. Agres, Julie A. Edell, and Tony M. Dubitsky, eds. New York: Quorum Books, 53-68.
- , ———, and Michael R. Hagerty (1986), "Warmth in Advertising: Measurement, Impact and Sequence Effects," *Journal of Consumer Research*, 12 (March), 365-81.
- Abraham, Magid M. and Leonard M. Lodish (1990), "Getting the Most Out of Advertising and Promotion," *Harvard Business Review*, 3 (May/June), 50-63.
- Advertising Age (1996), "Snickers Ads Grab the Elusive 'Big Idea'," 67 (36), 37.
- Advertising Research Foundation (1961), *Toward Better Media Comparisons*. New York: Advertising Research Foundation, Audience Concepts Committee.
- (1991), *Breakthrough Marketplace Advertising Research for Bottom Line Results, Transcript Proceedings*. New York: Advertising Research Foundation.
- Agres, Stuart J., Julie A. Edell, and Tony M. Dubitsky (1990), *Emotion in Advertising: Theoretical and Practical Explorations*. New York: Quorum Books.
- Alba, Joseph W., J. Wesley Hutchinson, and John G. Lynch Jr. (1991), "Memory and Decision Making," in *Handbook of Consumer Behavior*, Thomas S. Robertson and Harold Kassarian, eds. Englewood Cliffs, NJ: Prentice Hall, 1-49.
- Alwitt, Linda F. and Andrew A. Mitchell (1985), "Introduction," in *Psychological Processes and Advertising Effects*, Linda F. Alwitt and Andrew A. Mitchell, eds. Hillsdale, NJ: Lawrence Erlbaum Associates, 1-10.
- Arora, Rajinder (1979), "How Promotion Elasticities Change," *Journal of Advertising Research*, 19 (June), 57-62.
- Assael, Henry and George S. Day (1968), "Attitudes and Awareness as Predictors of Market Share," *Journal of Advertising Research*, 8 (October), 3-10.
- Assmus, Gert, John U. Farley, and Donald Lehmann (1984), "How Advertising Affects Sales: Meta Analysis of Econometric Results," *Journal of Marketing Research*, 21 (February), 65-74.
- Bagozzi, Richard P. (1981), "An Examination of the Validity of Two Models of Attitude," *Multivariate Behavioral Research*, 16 (July), 323-59.
- and Robert E. Burnkrant (1979), "Attitude Organization and the Attitude-Behavior Relationship," *Journal of Personality and Social Psychology*, 37 (June), 913-29.
- , Alice M. Tybout, Samuel Craig, and Brian Strenthall (1979), "The Construct Validity of the Tripartite Classification of Attitudes," *Journal of Marketing Research*, 16 (February), 88-95.
- Barry, Thomas and Daniel Howard (1990), "A Review and Critique of the Hierarchy of Effects in Advertising," *International Journal of Advertising*, 9 (April-June), 121-35.
- Barwise, Patrick (1995), "Good Empirical Generalisations," *Marketing Science*, 14 (3), 429-35.
- Bass, Frank M. (1995), "Empirical Generalizations and Marketing Science: A Personal View," *Marketing Science*, 14 (3), G6-19.
- and Darral G. Clarke (1972), "Testing Distributed Lag Models of Advertising Effects," *Journal of Marketing Research*, 9 (August), 298-308.
- and Robert P. Leone (1983), "Temporal Aggregation, the Data Interval Bias and Empirical Estimation of Bimonthly Relations from Annual Data," *Management Science*, 29 (January), 1-11.
- and Jerry Wind (1995), "Introduction to the Special Issue: Empirical Generalizations in Marketing," *Marketing Science*, 14 (3), G1-5.
- Batra, Rajeev and Michael L. Ray (1985), "How Advertising Works at Contact," in *Psychological Processes and Advertising Effects*, Linda F. Alwitt and Andrew A. Mitchell, eds. Hillsdale, NJ: Lawrence Erlbaum Associates, 13-44.
- and ——— (1986), "Affective Responses Mediating Acceptance of Advertising," *Journal of Consumer Research*, 13 (September), 234-49.
- and Wilfried R. Vanhonor (1986), "The Hierarchy of Advertising Effects: An Aggregate Field Test of Temporal Precedence," working paper, Columbia Business School.
- Berlyne, Daniel E. (1960), *Conflict, Arousal and Curiosity*. New York: McGraw-Hill.
- (1966), "Curiosity and Exploration," *Science*, 153 (1), 25-33.

- (1970), "Novelty, Complexity, and Hedonic Value," *Perception and Psychophysics*, 8 (November), 279–86.
- Bharadwaj, Sunder G., P. Rajan Varadarajan, and John Fahy (1993), "Sustainable Competitive Advantage in Service Industries: A Conceptual Model and Research Propositions," *Journal of Marketing*, 57 (October), 83–99.
- Biel, Alexander L. (1990), "Love the Ad, Buy the Product? Why Liking the Advertisement and Preferring the Brand Aren't Strange Bedfellows After All," *Admap*, 26 (September), 21–25.
- Bierly, Calvin, Frances K. McSweeney, and Renee Vannieuwerk (1985), "Classical Conditioning of Preferences for Stimuli," *Journal of Consumer Research*, 12 (December), 316–23.
- Blair, Margaret H. (1987), "An Empirical Investigation of Advertising Wearin and Wearout," *Journal of Advertising Research*, 27 (December/January), 45–50.
- Blattberg, Robert C. and Abel P. Jeuland (1981), "A Micromodeling Approach to Investigate the Advertising–Sales Relationship," *Management Science*, 27 (September), 988–1005.
- Bloom, Paul N., Julie Edell, and Richard Staelin (1994), "Criteria for Assessing Research on the Effects of Marketing Communications," *Working Paper No. 94-123*. Cambridge, MA: Marketing Science Institute.
- Bogart, Leo (1996), *Strategy in Advertising*, 3d ed. Lincolnwood, IL: NTC Books.
- Boulding, William, Eunhyu Lee, and Richard Staelin (1992), "The Long-Term Differentiation Value of Marketing Communications Actions," *Working Paper No. 92-133*. Cambridge, MA: Marketing Science Institute.
- Broadbent, Simon (1984), "Modelling with Adstock," *Journal of the Market Research Society*, 26 (October), 295–312.
- (1992), *456 Views of How Advertising Works*. London: Leo Burnett.
- Brown, Gordon (1991), "Monitoring Advertising: Big Stable Brands and Ad Effects Fresh Thoughts About Why, Perhaps, Consistent Promotion Keeps Them Big," *Admap*, 27 (May), 32–37.
- Brown, Steven P. and Douglas M. Stayman (1992), "Antecedents and Consequences of Attitude Toward the Ad: A Meta-Analysis," *Journal of Consumer Research*, 19 (June), 34–51.
- Burke, Marian and Julie Edell (1989), "The Impact of Feelings on Ad-Based Affect and Cognition," *Journal of Marketing Research*, 26 (February), 69–83.
- Buttle, Francis (1991), "What Do People Do with Advertising?" *International Journal of Advertising*, 10 (April-June), 95–110.
- Cacioppo, John T. and Richard E. Petty (1985), "Central and Peripheral Routes to Persuasion: The Role of Message Repetition," in *Psychological Processes and Advertising Effects*, Andrew A. Mitchell and Linda F. Alwitt, eds. Hillsdale, NJ: Lawrence Erlbaum Associates, 91–112.
- Calder, Bobby J. and Brian Strenthal (1980), "Television Commercial Wearout: An Information Processing View," *Journal of Marketing Research*, 17 (May), 173–86.
- Chiplin, Brian and Brian Sturgess (1981), *Economics of Advertising*, 2d ed. East Sussex, UK: Holt, Rinehart and Winston.
- Clarke, Darral G. (1976), "Econometric Measurement of the Duration of Advertising Effects on Sales," *Journal of Marketing Research*, 13 (November), 345–57.
- Colley, Russell H. (1961), *Defining Advertising Goals for Measured Advertising Results*. New York: Association of National Advertisers.
- Comanor, William S. and Thomas A. Wilson (1974), *Advertising and Market Power*. Cambridge, MA: Harvard University Press.
- and ——— (1979), "The Effects of Advertising on Competition: A Survey," *Journal of Economic Literature*, 17 (June), 453–76.
- Crandall, James E. (1970), "Predictive Value and Confirmability of Traits and Determinants of Judged Trait Importance," *Journal of Personality*, 38 (March), 77–90.
- Danaher, Peter J. (1988), "A Log-Linear Model for Predicting Magazine Audiences," *Journal of Marketing Research*, 25 (November), 356–62.
- (1989), "An Approximate Log-Linear Model for Predicting Magazine Audiences," *Journal of Marketing Research*, 26 (November), 473–79.
- (1991), "A Canonical Expansion Model for Multivariate Media Exposure Distributions: A Generalization of the Duplication of Viewing Law," *Journal of Marketing Research*, 28 (November), 361–62.
- Darby, Michael R. and Edi Karni (1973), "Free Competition and the Optimal Amount of Fraud," *Journal of Law and Economics*, 16 (April), 67–86.
- Davis, Evan, John Kay, and Jonathan Star (1991), "Is Advertising Rational?" *Business Strategy Review*, 2 (Autumn), 1–23.
- Deighton, John (1984), "The Interaction of Advertising and Evidence," *Journal of Consumer Research*, 11 (December), 763–70.
- (1986), "Persuasion as Directed Inference," in *Advances in Consumer Research*, Vol. 13, Richard Lutz, ed. Provo, UT: Association for Consumer Research, 558–61.
- , Caroline Henderson, and Scott A. Neslin (1994), "The Effects of Advertising on Brand Switching and Repeat Purchasing," *Journal of Marketing Research*, 31 (February), 28–43.
- and Robert M. Schindler (1988), "Can Advertising Influence Experience?" *Psychology & Marketing*, 5 (Summer), 103–15.
- Dekimpe, Marnik G. and Dominique M. Hanssens (1995), "The Persistence of Marketing Effects on Sales," *Marketing Science*, 14 (1), 1–21.
- Dhalla, Norman K. (1978), "Assessing the Long-Term Value of Advertising," *Harvard Business Review*, 56 (January/February), 87–95.
- Dröge, Cornelia (1989), "Shaping the Route to Attitude Change: Central Versus Peripheral Processing Through Comparative Versus Noncomparative Advertising," *Journal of Marketing Research*, 26 (May), 193–204.
- D'Souza, Giles and Ram C. Rao (1995), "Can Repeating an Advertisement More Frequently than the Competition Affect Brand Preference in a Mature Market?" *Journal of Marketing*, 59 (April), 32–42.
- Eastlack, Joseph O. and Ambar G. Rao (1986), "Modeling Response to Advertising and Pricing Changes for 'V-8' Cocktail Vegetable Juice," *Marketing Science*, 5 (3), 245–59.
- Ehrenberg, Andrew S.C. (1974), "Repetitive Advertising and the Consumer," *Journal of Advertising Research*, 14 (April), 25–34.
- (1994), "Justifying Advertising Budgets," *Admap*, 30 (January), 11–13.
- Ekman, Paul and W.V. Friesen (1978), *Facial Action Coding System (FACS): A Technique for the Measurement of Facial Action*. Palo Alto, CA: Consulting Psychologists Press.
- Eskin, Gerald J. and Penny Baron (1977), "Effects of Price and Advertising in Test-Marketing Experiments," *Journal of Marketing Research*, 14 (November), 499–508.
- Farris, Paul W. and Mark S. Albion (1980), "The Impact of Advertising on the Price of Consumer Products," *Journal of Marketing*, 44 (Summer), 17–35.
- Fazio, Russell H., Mark P. Zanna, and Joel Cooper (1978), "Direct Experience and Attitude–Behavior Consistency," *Personality & Social Psychology Bulletin*, 4 (Winter), 48–51.
- Fischbach, Gerald D. (1992), "Mind and Brain," *Scientific American*, 267 (September), 48–57.
- Fishbein, Martin and Icek Ajzen (1975), *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Fletcher, Winston (1992), *A Glittering Haze*. Henley-On-Thames, England: NTC.
- Franzen, Giep (1994), *Advertising Effectiveness*. London: NTC.

- Gardner, Meryl P. (1985), "Mood States and Consumer Behavior: A Critical Review," *Journal of Consumer Research*, 12 (December), 281-300.
- , Andrew A. Mitchell, and J. Edward Russo (1978), "Chronometric Analysis: An Introduction and an Application to Low Involvement Perception of Advertisements," in *Advances in Consumer Research*, Vol. 5, H. Keith Hunt, ed. Ann Arbor, MI: Association for Consumer Research, 581-89.
- Givon, Moshe and Dan Horsky (1990), "Untangling the Effects of Purchase Reinforcement and Advertising Carryover," *Marketing Science*, 9 (3), 171-87.
- Gorn, Gerald (1982), "The Effects of Music in Advertising and Choice Behavior: A Classical Conditioning Approach," *Journal of Marketing*, 46 (Winter), 79-85.
- Greenwald, Anthony G. (1968), "Cognitive Learning, Cognitive Response to Attitude Change," in *Psychological Foundations of Attitudes*, Anthony G. Greenwald, Timothy C. Brock, and Thomas M. Ostrom, eds. New York: Academic Press, 147-70.
- and Clark Leavitt (1984), "Audience Involvement in Advertising: Four Levels," *Journal of Consumer Research*, 11 (February), 581-92.
- Haley, Russell I. and Allan L. Baldinger (1991), "The ARF Copy Research Validity Project," *Journal of Advertising Research*, 31 (April/May), 11-32.
- Hall, Mark and Doug Maclay (1991), "How Does Research Practice Match Advertising Theory?" in *Proceedings of the Market Research Society Conference*. London: Market Research Society, 51-68.
- Hanssens, Dominique M., Leonard J. Parsons, and Randall L. Schultz (1990), *Market Response Models: Econometric and Time Series Analysis*. Boston: Kluwer Academic Publishers.
- Harris, Greg (1987), "The Implications of Low-Involvement Theory for Advertising Effectiveness Research," *International Journal of Advertising*, 6 (July-September), 209-21.
- Harrison, Albert A. (1968), "Response Competition, Frequency, Exploratory Behavior and Liking," *Journal of Personality and Social Psychology*, 9 (4), 363-68.
- Healy, John S. and Harold H. Kassirjian (1983), "Advertising Substantiation and Advertiser Response: A Content Analysis of Magazine Advertisements," *Journal of Marketing*, 47 (Winter), 107-17.
- Heeler, Roger M. (1972), "The Effects of Mixed Media, Multiple Copy Repetition and Competition in Advertising: A Laboratory Investigation," doctoral dissertation, Graduate School of Business, Stanford University.
- Hirschman, Elizabeth C. and Morris B. Holbrook (1982), "Hedonic Consumption: Emerging Concepts, Methods and Propositions," *Journal of Marketing*, 46 (Summer), 92-101.
- and ——— (1986), "Expanding the Ontology and Methodology of Research on the Consumption Experience" in *Perspectives on Methodology in Consumer Research*, David Brinberg and Richard J. Lutz, eds. Berlin: Springer-Verlag, 213-51.
- Hoch, Stephen J. and Young-Won Ha (1986), "Consumer Learning: Advertising and the Ambiguity of Product Experience," *Journal of Consumer Research*, 13 (October), 221-33.
- Holbrook, Morris B. (1986), "Emotion in the Consumption Experience: Toward a New Model of the Human Consumer," in *The Role of Affect in Consumer Behavior: Emerging Theories and Applications*, Robert A. Peterson, Wayne D. Hoyer, and William R. Wilson, eds. Lexington, MA: D.C. Heath and Company, 17-52.
- and Rajeev Batra (1987), "Assessing the Role of Emotions as Mediators of Consumer Responses to Advertising," *Journal of Consumer Research*, 14 (December), 404-20.
- and John O'Shaughnessy, (1984) "The Role of Emotion in Advertising," *Psychology & Marketing*, 1 (Summer), 45-64.
- Homer, Pamela M. (1990), "The Mediating Role of Attitude Toward the Ad: Some Additional Evidence," *Journal of Marketing Research*, 27 (February), 78-86.
- Houston, Michael J. and Michael L. Rothschild (1978), "Conceptual and Methodological Perspectives in Involvement," in *Research Frontiers in Marketing: Dialogues and Directions*, Subhash Jain, ed. Chicago: American Marketing Association, 184-87.
- Hunt, Shelby D. (1992), "For Reason and Realism in Marketing," *Journal of Marketing*, 56 (April), 89-102.
- Institute of Practitioners in Advertising (1981-1995), *Advertising Works Vols. 1-8*, Simon Broadbent, Charles Channon, Paul Feldwick, and Chris Baker (2 each), eds. London: Institute of Practitioners of Advertising and NTC.
- Janiszewski, Chris (1988), "Preconscious Processing Effects: The Independence of Attitude Formation and Conscious Thought," *Journal of Consumer Research*, 15 (September), 199-209.
- and Luk Warlop (1993), "The Influence of Classical Conditioning Procedures on Subsequent Attention to the Conditioned Brand," *Journal of Consumer Research*, 20 (September), 171-89.
- Jones, John Philip (1990), "Advertising: Strong Force or Weak Force? Two Views an Ocean Apart," *International Journal of Advertising*, 9 (July-September), 233-46.
- (1995a), *When Ads Work*, New York: Lexington Books.
- (1995b), "Exposure Effects Under a Microscope," *Admap*, 30 (February), 28-31.
- Joyce, Timothy (1991), "Models of the Advertising Process?" *Marketing and Research Today*, 19 (November), 205-13.
- Kanetkar, Vijay, Charles B. Weinberg, and Doyle L. Weiss (1992), "Price Sensitivity and Television Advertising Exposures: Some Empirical Findings," *Marketing Science*, 11 (4), 359-71.
- Kaul, Anil and Dick R. Wittink (1995), "Empirical Generalizations About the Impact of Advertising on Price Sensitivity and Price," *Marketing Science*, 14 (3), G151-60.
- King, Stephen (1975), "Practical Progress from a Theory of Advertisements," *Admap*, 11 (October), 338-43.
- Kotler, Philip (1997), *Marketing Management: Analysis, Planning and Control*, 9th ed. Englewood Cliffs, NJ: Prentice Hall.
- Krishnamurthi, Lakshman and S.P. Raj (1985), "The Effect of Advertising on Consumer Price Sensitivity," *Journal of Marketing Research*, 22 (May), 119-29.
- Krugman, Herbert E. (1965), "The Impact of Television Advertising: Learning Without Involvement," *Public Opinion Quarterly*, 29 (Fall), 349-56.
- (1967), "The Measurement of Advertising Involvement," *Public Opinion Quarterly*, 30 (Winter), 583-96.
- (1972), "Why Three Exposures May Be Enough," *Journal of Advertising Research*, 12 (November/December), 11-14.
- (1977), "Memory Without Recall, Exposure Without Perception," *Journal of Advertising Research*, 17 (August/September), 7-12.
- Kupfermann, Irving (1991), "Hypothalamus and Limbic System: Peptidergic Neurons, Homeostasis, and Emotional Behavior," in *Principles of Neural Science*, 3d ed., Eric R. Kandel, James H. Schwartz, and Thomas M. Jessel, eds. Norwalk, CT: Appleton and Lange, 735-49.
- Lambin, Jean J. (1976), *Advertising, Competition and Market Conduct in Oligopoly over Time*. Amsterdam: North-Holland.
- Lannon, Judie (1986), "New Techniques for Understanding Consumer Reactions to Advertising," *Journal of Advertising Research: Research Currents*, 26 (August/September), RC6-9.
- (1994), "Mosaics of Meaning: Anthropology and Marketing," *Journal of Brand Management*, 2 (December), 155-68.
- and Peter Cooper (1983), "Humanistic Advertising," *International Journal of Advertising*, 2 (July-September), 195-213.
- Lastovicka, John L. and David M. Gardner (1979), "Components of Involvement," in *Attitudes Play for High Stakes*, John C. Maloney and Bernard Silverman, eds. Chicago: American Marketing Association, 53-73.

- Lavidge, Robert J. and Gary A. Steiner (1961), "A Model for Predictive Measurements of Advertising Effectiveness," *Journal of Marketing*, 25 (October), 59–62.
- Leckenby, John D. and Shizue Kishi (1984), "The Dirichlet-Multinomial Distribution as a Magazine Exposure Model," *Journal of Marketing Research*, 21 (February), 100–106.
- Leone, Robert P. (1995), "Generalizing What Is Known About Temporal Aggregation and Advertising Carryover," *Marketing Science*, 14 (3), G141–50.
- and Randall L. Schultz (1980), "A Study of Marketing Generalization," *Journal of Marketing*, 44 (Winter), 10–18.
- Levi-Strauss, Claude (1963), *Structural Anthropology*. New York: Basic Books.
- Levin, Irwin P. and Gary P. Gaeth (1988), "How Consumers Are Affected by the Framing of Attribute Information Before and After Consuming the Product," *Journal of Consumer Research*, 15 (December), 374–78.
- Little, John C. (1979), "Aggregate Advertising Models: The State of the Art," *Operations Research*, 27 (July-August), 629–65.
- Lodish, Leonard M., Magid Abraham, Stuart Kalmenson, Jeanne Levelsberger, Beth Lubetkin, Bruce Richardson, and Mary Ellen Stevens (1995a), "How Advertising Works: A Meta-Analysis of 389 Real World Split Cable TV Advertising Experiments," *Journal of Marketing Research*, 32 (May), 125–39.
- , ———, ———, ———, and ——— (1995b), "A Summary of Fifty-Five In-Market Experimental Estimates of the Long-Term Effects of Advertising," *Marketing Science*, 14 (3), G133–40.
- Lutz, Richard J. (1975), "Changing Brand Attitudes Through Modifications of Cognitive Structure," *Journal of Consumer Research*, 1 (March), 49–59.
- (1991), "The Role of Attitude Theory in Marketing," in *Perspectives in Consumer Behavior*, 4th ed., Harold H. Kassarian and Thomas S. Robertson, eds. Englewood Cliffs, NJ: Prentice Hall, 317–39.
- MacInnis, Deborah J. and Bernard J. Jaworski (1989), "Information Processing from Advertisements: Toward an Integrative Framework," *Journal of Marketing*, 53 (October), 1–23.
- , Christine Moorman, and Bernard J. Jaworski (1991), "Enhancing and Measuring Consumers' Motivation, Opportunity and Ability to Process Brand Information from Ads," *Journal of Marketing*, 55 (October), 32–53.
- MacKenzie, Scott B. and Richard J. Lutz (1989), "An Empirical Examination of the Structural Antecedents of Attitude Toward the Ad in an Advertising Pretest Context," *Journal of Marketing*, 53 (April), 48–65.
- , ———, and George E. Belch (1986), "The Role of Attitude Toward the Ad as a Mediator of Advertising Effectiveness: A Test of Competing Explanations," *Journal of Marketing Research*, 23 (May), 130–43.
- Marks, Lawrence J. and Michael A. Kamins (1988), "The Use of Product Sampling and Advertising: Effects of Sequence of Exposure and Degree of Advertising Claim Exaggeration on Consumers' Belief Strength, Belief Confidence and Attitudes," *Journal of Marketing Research*, 25 (August), 266–82.
- Martin, John H. (1991), "Coding and Processing of Sensory Information," in *Principles of Neural Science*, 3d ed., Eric R. Kandel, James H. Schwartz, and Thomas M. Jessel, eds. Norwalk, CT: Appleton and Lange, 329–40.
- McDonald, Colin (1971), "What Is the Short Term Effect of Advertising?" in *Measuring the Effect of Advertising*, David Corkindale and Sherril Kennedy, eds. Farnborough, England: Saxon House Studies, 463–87.
- (1992), *How Advertising Works*. London: The Advertising Association and NTC.
- McGuire, William (1968), "The Nature of Attitudes and Attitude Change," in *Handbook of Social Psychology*, 2d ed., Vol. 3, Gardner Lindzey and Elliot Aronson, eds. Reading, MA: Addison Wesley, 136–314.
- (1978), "An Information Processing Model of Advertising Effectiveness," in *Behavioral and Management Science in Marketing*, Harry L. Davis and Alvin J. Silk, eds. New York: John Wiley & Sons, 156–80.
- McWilliam, Gil (1993), "Consumers' Involvement in Brands and Product Categories," doctoral dissertation, School of Management, Cranfield University, U.K.
- Mela, Carl F., Sunil Gupta, and Donald R. Lehmann (1997), "The Long-Term Impact of Promotion and Advertising on Consumer Brand Choice," *Journal of Marketing Research*, 34 (May), 248–61.
- Metheringham, Richard A. (1964), "Measuring the Net Cumulative Coverage of a Print Campaign," *Journal of Advertising Research*, 4 (December), 23–28.
- Mick, David G. (1988), "Contributions to the Semiotics of Marketing and Consumer Research," in *The Semiotic Web: A Yearbook of Semiotics*, Thomas Sebeok and Jean Umiker-Sebeok, eds. Berlin: Mouton de Gruyter, 535–84.
- Mitchell, Andrew A. (1980), "The Use of an Information Processing Approach to Understanding Effects," in *Advances in Consumer Research*, Vol. 7, Jerry C. Olson, ed. Ann Arbor, MI: Association for Consumer Research, 171–77.
- (1981), "The Dimensions of Advertising Involvement," in *Advances in Consumer Research*, Vol. 8, Kent Monroe, ed. Ann Arbor, MI: Association for Consumer Research, 25–30.
- and Jerry C. Olson (1981), "Are Product Beliefs the Only Mediator of Advertising Effects on Brand Attitude?" *Journal of Marketing Research*, 18 (August), 318–32.
- Mitra, Anusree and John G. Lynch Jr. (1995), "Toward a Reconciliation of Market Power and Information Theories of Advertising Effects on Price Elasticity," *Journal of Consumer Research*, 21 (March), 644–59.
- Mittal, Banwari (1990), "The Relative Roles of Brand Beliefs and Attitude Toward the Ad as Mediators of Brand Attitude: A Second Look," *Journal of Marketing Research*, 27 (May), 209–19.
- Naples, Michael J. (1979), *Effective Frequency: The Relationship Between Frequency and Advertising Effectiveness*. New York: Association of National Advertisers.
- Nelson, Philip (1970), "Information and Consumer Behavior," *Journal of Political Economy*, 78 (March/April), 311–29.
- (1974), "Advertising as Information," *Journal of Political Economy*, 82 (July/August), 729–54.
- Nevett, Terence R. (1982), *Advertising in Britain: A History*. London: Heinemann.
- O'Brien, Terrence (1971), "Stages of Consumer Decision Making," *Journal of Marketing Research*, 8 (August), 283–89.
- Ogilvy, David (1983), *Ogilvy on Advertising*. London: Pan Books.
- Olson, Jerry C. and Philip A. Dover (1979), "Disconfirmation of Consumer Expectations Through Product Trial," *Journal of Applied Psychology*, 64 (April), 179–89.
- Palda, Kristian S. (1966), "The Hypothesis of a Hierarchy of Effects: A Partial Evaluation," *Journal of Marketing Research*, 3 (February), 13–24.
- Parker, Philip M. and Hubert Gatignon (1996), "Order of Entry, Trial Diffusion, and Elasticity Dynamics: An Empirical Case," *Marketing Letters*, 7 (1), 95–109.
- Parsons, Leonard J. (1975), "The Product Life Cycle and Time Varying Advertising Elasticities," *Journal of Marketing Research*, 12 (November), 476–80.
- Pechmann, Cornelia and David W. Stewart (1989), "Advertising Repetition: A Critical Review of Wearin and Wearout," in *Current Issues and Research in Advertising 1988*, James H. Leigh and Claude R. Martin Jr., eds. Ann Arbor, MI: University of Michigan, 285–89.
- Pedrick, James H. and Fred S. Zufryden (1991), "Evaluating the Impact of Advertising Media Plans: A Model of Consumer Purchase Dynamics Using Single-Source Data," *Marketing Science*, 10 (2), 111–30.

- and ——— (1993), "Measuring the Competitive Effects of Advertising Media Plans," *Journal of Advertising Research*, 33 (December/January), 11–20.
- Peter, J. Paul (1992), "Realism or Relativism for Marketing Theory and Research: A Comment on Hunt's 'Scientific Realism'," *Journal of Marketing*, 56 (April), 72–79.
- Peterson, Robert A., Wayne D. Hoyer, and William R. Wilson (1986), "Reflections on the Role of Affect in Consumer Behavior," in *The Role of Affect in Consumer Behavior: Emerging Theories and Applications*, Robert A. Peterson, Wayne D. Hoyer, and William R. Wilson, eds. Lexington, MA: Lexington Books, 141–59.
- Petty, Richard E. and John T. Cacioppo (1981a), "Issues Involvement as a Moderator of the Effects on Attitude of Advertising Content and Context," in *Advances in Consumer Research*, Vol. 8, K.B. Monroe, ed. Ann Arbor, MI: Association for Consumer Research, 20–24.
- and ——— (1981b), *Attitudes and Persuasion: Classic and Contemporary Approaches*. Dubuque, IA: William C. Brown.
- , ———, and David Schumann (1983), "Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement," *Journal of Consumer Research*, 10 (September), 135–46.
- Raj, S.P. (1982), "The Effects of Advertising on High and Low Loyalty Consumer Segments," *Journal of Consumer Research*, 9 (June), 77–89.
- Rao, Ambar G. (1970), *Quantitative Theories in Advertising*. New York: John Wiley & Sons.
- and Peter B. Miller (1975), "Advertising/Sales Response Functions," *Journal of Advertising Research*, 15 (April), 1–15.
- Rao, Ram C. (1986), "Estimating Continuous Time Advertising-Sales Models," *Marketing Science*, 5 (2), 125–42.
- Rao, Unnava H. and Robert E. Burnkrant (1991), "Effects of Repeating Varied Ad Executions on Brand Name Memory," *Journal of Marketing Research*, 28 (November), 406–16.
- Ray, Michael L. (1973), "Marketing Communications and the Hierarchy of Effects," in *New Models for Mass Communication Research*, Peter Clarke, ed. Beverly Hills, CA: Sage Publishing, 147–76.
- Reeves, Rosser (1961), *Reality in Advertising*. New York: Alfred A. Knopf.
- Resnik, Alan and Bruce L. Stern (1977), "An Analysis of Information Content in Television Advertising," *Journal of Marketing*, 41 (January), 50–53.
- Robertson, Thomas S. (1971), *Innovative Behavior and Communication*. New York: Holt, Rinehart and Winston.
- (1976), "Low-Commitment Consumer Behavior," *Journal of Advertising Research*, 16 (April/May), 19–24.
- Robinson, Joan (1933), *The Economics of Imperfect Competition*. New York: Macmillan.
- Rogers, Everett M. (1962), *Diffusion of Innovation*. New York: The Free Press.
- Rose, Steven P.R. (1993), *The Making of Memory*. London: Bantam Books.
- Rossiter, John R. and Larry Percy (1978), "Visual Imagery Ability as a Mediator of Advertising Response," in *Advances in Consumer Research*, Vol. 5, H. Keith Hunt, ed. Ann Arbor, MI: Association for Consumer Research, 52–56.
- and ——— (1983), "Visual Communication in Advertising," in *Information Processing Research in Advertising*, Richard J. Harris, ed. Hillsdale, NJ: Lawrence Erlbaum Associates, 83–125.
- and ——— (1997), *Advertising and Promotion Management*, 2d ed. New York: McGraw-Hill.
- , ———, and Robert J. Donovan (1991), "A Better Advertising Planning Grid," *Journal of Advertising Research*, 31 (October–November), 11–21.
- Rothschild Michael L. (1974), "The Effects of Political Advertising on the Voting Behavior of a Low-Involvement Electorate," doctoral dissertation, Graduate School of Business, Stanford University.
- (1984), "Perspectives on Involvement: Current Problems and Future Directions," in *Advances in Consumer Research*, Vol. 11, Thomas C. Kinnear, ed. Provo, UT: Association for Consumer Research, 216–17.
- and Yong J. Hyun (1990), "Predicting Memory for Components of TV Commercials from EEG," *Journal of Consumer Research*, 16 (March), 472–78.
- Rust, Ronald T. (1986), *Advertising Media Models: A Practical Guide*. Lexington, MA: Lexington Books.
- and Robert P. Leone (1984), "The Mixed Media Dirichlet-Multinomial Distribution: A Model for Evaluating Television-Magazine Advertising Schedules," *Journal of Marketing Research*, 21 (February), 89–99.
- Sawyer, Alan G. (1971), "A Laboratory Experimental Investigation of the Effects of Repetition of Advertising," doctoral dissertation, Graduate School of Business, Stanford University.
- (1981), "Repetition, Cognitive Responses and Persuasion," in *Cognitive Responses in Persuasion*, Richard E. Petty, Timothy M. Ostrom, and Thomas C. Brock, eds. Hillsdale, NJ: Lawrence Erlbaum Associates, 263–82.
- and Daniel J. Howard (1991), "Effects of Omitting Conclusions in Advertisements to Involved and Uninvolved Audiences," *Journal of Marketing Research*, 28 (November), 467–74.
- Scherer, Klaus R. and Paul Ekman (1982), *Handbook of Methods in Nonverbal Behavior Research*. Cambridge, UK: Cambridge University Press.
- Sethuraman, Raj and Gerard J. Tellis (1991), "An Analysis of the Trade-Off Between Advertising and Price Discounting," *Journal of Marketing Research*, 28 (May), 160–74.
- Shapiro, Stewart, Susan E. Heckler, and Deborah J. MacInnis (1997), "Measuring and Assessing the Impact of Preattentive Processing on Ad and Brand Attitudes," in *Measuring Advertising Effectiveness*, William D. Wells, ed. Mahwah, NJ: Lawrence Erlbaum Associates, 27–44.
- Shimp, Terence (1981), "Attitude Toward the Ad as a Mediator of Consumer Brand Choice," *Journal of Advertising*, 10 (Summer), 9–15.
- Simon, Julian L. and Johan Arndt (1980), "The Shape of the Advertising Response Function," *Journal of Advertising Research*, 20 (August), 11–30.
- Singh, Surendra N. and Catherine A. Cole (1993), "The Effects of Length, Content, and Repetition on Television Commercial Effectiveness," *Journal of Marketing Research*, 30 (February), 91–104.
- Skinner, Burrhus F. (1938), *The Behavior of Organisms*. New York and London: Appleton-Century.
- Smith, Robert E. (1993), "Integrating Information from Advertising and Trial: Processes and Effects on Consumer Response to Product Information," *Journal of Marketing Research*, 30 (May), 204–19.
- and William R. Swinyard (1978), "Involvement and the Hierarchy of Effects: An Integrated Framework," in *A Look Back, A Look Ahead*, G. Hafer, ed. Chicago: American Marketing Association, 86–98.
- and ——— (1982), "Information Response Models: An Integrated Approach," *Journal of Marketing Research*, 20 (August), 257–67.
- and ——— (1983), "Attitude-Behavior Consistency: The Impact of Product Trial Versus Advertising," *Journal of Marketing Research*, 20 (August), 257–67.
- and ——— (1988), "Cognitive Response to Advertising and Trial: Belief Strength, Belief Confidence and Product Curiosity," *Journal of Advertising*, 17 (Fall), 3–14.

- Srinivasan V. and Helen A. Weir (1988), "A Direct Aggregation Approach to Inferring Microparameters of the Koyck Advertising-Sales Relationship from Macro Data," *Journal of Marketing Research*, 25 (May), 145-56.
- Srull, Thomas K. (1983), "Affect and Memory: The Impact of Affective Reactions in Advertising on the Representation of Product Information in Memory," in *Advances in Consumer Research*, Vol. 10, Richard P. Bagozzi and Alice M. Tybout, eds. Ann Arbor, MI: Association for Consumer Research, 520-25.
- Stapel, Jan (1987), "Viva Recall, Viva Persuasion," *European Research*, 15 (November), 222-25.
- Stern, Barbara B. (1993), "Feminist Literary Criticism and the Deconstruction of Ads: A Postmodern View of Advertising and Consumer Responses," *Journal of Consumer Research*, 19 (March), 556-66.
- (1994), "Classical and Vignette Television Advertising Dramas: Structural Models, Formal Analysis, and Consumer Effects," *Journal of Consumer Research*, 20 (March), 601-15.
- (1995), "Consumer Myths: Frye's Taxonomy and the Structural Analysis of Consumption Text," *Journal of Consumer Research*, 21 (September), 165-85.
- Stern, Bruce L., Dean M. Krugman, and Alan J. Resnik (1981), "Magazine Advertising: An Analysis of Its Information Content," *Journal of Advertising Research*, 21 (April/May), 39-44.
- and Alan J. Resnik (1991), "Information Content in Television Advertising: A Replication and Extension," *Journal of Advertising Research*, 31 (June/July), 36-46.
- Stigler, George (1961), "The Economics of Information," *Journal of Political Economy*, 69 (January/February), 213-25.
- Strong, Edward C. (1972), "The Effects of Repetition in Advertising: A Field Experiment," doctoral dissertation, Graduate School of Business, Stanford University.
- Strong, Edward K., Jr. (1925), "Theories of Selling," *Journal of Applied Psychology*, 9 (February), 75-86.
- Stuart, Elnora W., Terence A. Shimp, and Randall W. Engel (1987), "Classical Conditioning of Consumer Attitudes: Four Experiments in an Advertising Context," *Journal of Consumer Research*, 14 (December), 334-49.
- Sutherland, Max (1993), *Advertising and the Mind of the Consumer*. St. Leonards, Australia: Allen and Unwin.
- Swinyard, William R. and Kenneth A. Coney (1978), "Promotional Effects on a High- Versus Low-Involvement Electorate," *Journal of Consumer Research*, 5 (June), 41-48.
- Tellis, Gerard J. (1988), "Advertising Exposure, Loyalty and Brand Purchase: A Two-Stage Model," *Journal of Marketing Research*, 25 (May), 134-44.
- and Claes Fornell (1988), "The Relationship Between Advertising and Product Quality over the Product Life Cycle: A Contingency Theory," *Journal of Marketing Research*, 25 (February), 64-71.
- Telser, Lester G. (1964), "Advertising and Competition," *Journal of Political Economy*, 72 (December), 537-62.
- Thorndike, Edward L. (1911), *Animal Intelligence*. New York: MacMillan.
- Troiano, Jaime (1996), "Brand Equity: Classifying Consumers Instead of Looking for Magic Numbers," *ESOMAR Seminar*, 203 (October), 9-11.
- Vaughn, Richard (1980), "How Advertising Works: A Planning Model," *Journal of Advertising Research*, 20 (October/November), 27-33.
- (1986), "How Advertising Works: A Planning Model Revisited," *Journal of Advertising Research*, 26 (February/March), 57-66.
- Verma, Vinod K. (1980), "A Price Theoretic Approach to the Specification and Estimation of the Sales-Advertising Function," *Journal of Business*, 53 (3), S115-37.
- Weinberger, Marc G. and Harlan E. Spotts (1989), "A Situational View of Information Content in TV Advertising in the US and UK," *Journal of Marketing*, 53 (January), 89-94.
- Wicker, Allan W. (1969), "Attitudes vs. Action: The Relationship of Verbal and Overt Behavioral Responses to Attitude Objects," *Journal of Social Issues*, 25 (Winter), 41-78.
- Winter, Frederick W. (1973), "A Laboratory Experiment of Individual Attitude Response to Advertising Exposure," *Journal of Marketing Research*, 10 (May), 130-40.
- Wilson, Timothy D., Dana S. Dunn, Dolores Kraft, and Douglas J. Lisle (1989), "Introspection, Attitude Change, and Attitude-Behavior Consistency: The Disruptive Effects of Explaining Why We Feel the Way We Do," in *Advances in Experimental Social Psychology*, Vol. 22, Leonard Berkowitz, ed. New York: Academic Press, 287-343.
- Winer, Russell S. (1979), "An Analysis of the Time-Varying Effects of Advertising: The Case of Lydia Pinkham," *Journal of Business*, 52 (4), 563-76.
- (1980), "Estimation of a Longitudinal Model to Decompose the Effects of an Advertising Stimulus on Family Consumption," *Management Science*, 26 (May), 471-82.
- (1991), "Using Single-Source Data as a Natural Experiment for Evaluating Advertising Effects," working paper, Walter A. Haas School of Business, University of California at Berkeley.
- Wittink, Dick R. (1977), "Exploring Territorial Differences in the Relationship Between Marketing Variables," *Journal of Marketing Research*, 25 (May), 134-44.
- Wright, Allice Ann (1990), "Advertising vs. Direct Experience as Modes of Communicating Information About Products," doctoral dissertation, College of Business Administration, University of Florida.
- and John Lynch Jr. (1995), "Communication Effects of Advertising Versus Direct Experience when Both Search and Experience Attributes Are Present," *Journal of Consumer Research*, 21 (March), 708-18.
- Wright, Peter L. (1973), "Cognitive Processes Mediating Acceptance of Advertising," *Journal of Marketing Research*, 4 (February), 53-62.
- Zajonc, Robert B. (1980), "Feeling and Thinking: Preferences Need No Inferences," *American Psychologist*, 35 (February), 151-75.
- (1984), "On the Primacy of Affect," *American Psychologist*, 39 (February), 117-23.
- and Hazel Markus (1982), "Affective and Cognitive Factors in Preferences," *Journal of Consumer Research*, 9 (September), 123-31.
- Zielske, Hubert (1959), "The Remembering and Forgetting of Advertising," *Journal of Marketing Research*, 23 (January), 239-43.
- and Walter Henry (1980), "Remembering and Forgetting Television Advertisements," *Journal of Advertising Research*, 20 (April/May), 7-13.
- Zinkhan, George M. and Claes Fornell (1989), "A Test of the Learning Hierarchy in High and Low-Involvement Situations," in *Advances in Consumer Research*, Vol. 16. Provo, UT: Association for Consumer Research, 152-59.
- and Rudy Hirschheim (1992), "Truth in Marketing Theory and Research: An Alternative Perspective," *Journal of Marketing*, 56 (April), 80-88.
- Zufryden, Fred S. (1987), "A Model for Relating Advertising Media Exposures to Purchase Incidence Behavior Patterns," *Management Science*