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Advertising Response

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Overview

This paper focuses on the determinants of measurable response to advertising. In particular, we address the choice of response metrics, the relative impact of spending versus creative, the conditions under which advertising is effective, and the difference (if any) between short-run and long-run effects. We discuss the extent to which these research insights are used effectively in the practice of advertising decision making.

What We Know about Advertising Response

Twenty-five years ago, John Little (1979) wrote a seminal paper proposing that advertising response was characterized by five phenomena. We use those as a starting point of our review. (The response metric used in that paper is sales, which is the most common performance measure.) Little's five advertising response phenomena are:

- The steady-state response of sales to advertising is concave or S-shaped.
- Upward response is fast; downward response is slow.
- Competitive spending matters.
- Advertising effectiveness changes over time.
- Response can tail off even under constant spending.

Advertising response research in the last 25 years has put these findings in a sharper perspective:

- The predominant response function is concave, and the advertising elasticity empirical generalization is .1. S-shaped response functions (i.e., threshold effects) may exist but are the exception (e.g., Rao and Miller 1975). Overall, in terms of sales sensitivity, advertising is the weakest of the marketing-mix instruments. (See, e.g., Hanssens, Parsons, and Schultz (2001) for details.) This does not imply, however, that advertising is the least profitable instrument (Jones 1990).
- Visible short-term lifts are a *condition* for the existence of long-term effects. For example, an exhaustive experimental study by Lodish et al. (1995) showed that about *one-third* of television commercials showed a significant effect on sales in the first year. The long-term impact of these *effective* commercials is about twice the short-run effect, implying an exponential decay rate of 50% (i.e., 50% carryover from one period to the next).
- While competitive spending matters, the relationship between share of market and share of voice is not very strong. In addition, the ultimate effects of advertising are more influenced by the nature of consumer response itself than by the vigilance of competitors (Steenkamp et al. 2004). Finally, smaller competitors tend to have higher A/S ratios than market leaders (e.g., Tellis 2004).
- Advertising elasticities are demonstrably higher for new products (about .3) than for established products (about .01) (Assmus, Farley, and Lehmann 1984).
- Advertising wear-in and wear-out patterns help explain why ad response can tail off even under constant spending. Zielske's (1959) experimental result that three to four exposures is best still holds.

On an important methodological note, we observe that, despite substantial academic advances in individual-choice modeling, most of the *decision-relevant* research on advertising response continues to be conducted at an aggregate level (though the units of aggregation are becoming smaller, e.g., weekly data instead of quarterly data and regional-market or store-level sales instead of national-level sales). In contrast, the decision-relevant unit of analysis in marketing is the person activity-occasion (Yang, Fennell, and Allenby 2002). Brands have value for individuals for individual instances of an activity. As the environmental conditions of the activity change, the desired brand attributes, consideration sets, and brand evaluations change. The measurement of advertising effects has, therefore, been subject to potential aggregation biases. Allenby and Rossi (1992) discussed the conditions under which aggregation bias occurs. In most cases, with the notable exception of certain targeted-coupons programs, these conditions are *not* met in real-world marketing scenarios. Consequently, advertising-response models on data aggregated to the relevant-decision (i.e., managerial) level may not provide an accurate reflection of consumer behavior.

Behavioral Reasons for the Quantitative Results

Behavioral research suggests that advertising effects materialize through a hierarchy, i.e., from consumer beliefs and attitudes to behavioral effects such as purchasing. However, an exhaustive literature review by Vakratsas and Ambler (1999) concludes that there is little support for a hierarchy or temporal sequence of effects. Thus observations of advertising outcomes differ depending on whether one measures the attitudinal domain or the behavioral domain.

However, most of the processes described in behavioral research are individual-level psychological changes of state, which are expected to lead to the final outcome – sales. Further, behavioral research has been particularly attentive to moderating conditions that can enhance or mitigate advertising's impact. For example, while quantitative research suggests that competitive advertising undermines the effects of one's own advertising, consumer research addresses the conditions under which this effect is more or less likely.

In general terms, behavioral researchers view advertising as affecting sales through its effects on memory and attitude. Earlier research in this area suggested that recall of advertising message content is an important determinant of its persuasiveness, which explains the origin and continued reliance by the industry on the day-after-recall measure. More recent research has questioned this assumption and focused more on the changes that occur in an individual's mental representation of a brand as an indicator of advertising effectiveness (Keller 1998).

Three major streams of research in consumer behavior have important implications for the study and measurement of advertising effects. First, there has been a shift in the study of attitudinal effects of advertising. Instead of relying on how favorable or unfavorable people are toward brands, consumer researchers now study the strength of those attitudes. Strength is measured along multiple dimensions, but the key dimensions are accessibility of attitude (how quickly it comes to mind), confidence in attitude, and commitment to attitude (Petty and Krosnick 1995). Advertising (among other variables) is expected to affect these dimensions, which are in turn expected to affect the relationship between attitude and behavior. Advertisers have not actively included these advances in behavioral theory into their measurement.

Second, it is now widely accepted that advertising can evoke feelings that can affect behavior without altering beliefs. Data from neuropsychology are now confirming the existence of a separate system in memory that deals with feelings and affects decision making (Pham 2004, Pham, Cohen, Pracejus, and Hughes 2001). The ability to measure emotional responses to advertising and the conditions under which they affect consumer response is another challenge for advertising researchers.

Third, the assumption of stable attitudes that guide behavior across a wide array of consumption situations is not unconditionally accepted by several researchers. Memory is expected to play an important role in determining which attributes of a brand come to mind and how those attributes are integrated to form an impression about the appropriateness of the brand for a given consumption situation. Thus the traditional hierarchy-of-effects model, which relies on attitude formation for behavioral effects to occur, applies only in a limited number of conditions. Instead, consumer preferences are viewed as constructed at the point of consumption, based on the goals that are salient at that time and on the attributes of the brand that are accessible at that time (Bettman, Luce, and Payne 1998). How brand advertising can link brands to unique consumption goals and affect choice behavior is another area of study for advertising response.

Differential Effects

In understanding the rationale behind Little's phenomena, it is helpful to make a distinction between advertising for durables and advertising for consumables (products and services). For durables, *market rejuvenation* is a key concept. Effective advertising for a durable reduces the untapped market (buyers remaining), resulting in a loss of aggregate effectiveness. After some time has elapsed, the market is rejuvenated with new prospects, and a new campaign can once again be effective. For consumables, we know that people "learn faster than they forget," which helps explain the different rise/decay rates in ad response. By the same token, we know that advertising has a stronger effect on trial rates than on repeat rates (Deighton, Henderson, and Neslin 1994).

For both durables and consumables, we know that advertising is stronger in creating awareness than in fostering preference. The performance feedback loop (i.e., product usage experience) is much stronger than advertising in determining future consumer choices. Advertising can be used to initiate trial, but it is not sufficient to sustain repeat purchase without a favorable evaluation. This, too, helps explain the declining role of advertising over the life cycle.

Many studies have focused on various qualitative aspects of advertising. Among the most promising is recent work on eye movements that has revealed which aspects of a print ad (e.g., text, pictures, brand name, relative position on the page, etc.) are the most impactful (Pieters, Rosbergen, and Wedel 1999). Their results could well lead to a new, improved practice of copy writing.

On the other hand, we know little about the *relative importance* of advertising quality and advertising quantity, e.g., can higher spending make up for poorer advertising quality? Conversely, is advertising execution that hits a "home run" so potent that it defies the quantitative laws of response and resource allocation reviewed earlier?

Other Response Metrics

Since the 1960s, consumer decision making has been portrayed as a complex, multistage process involving motivating conditions, beliefs, knowledge, memory, attitudes, attributes, consideration sets, evaluations, and purchases. While advertising ultimately affects sales, it does so through a complex process with many potentially affected variables (see Howard and Sheth 1969; Fennell 1988; Ben-Akiva et al. 1999). Consider, for example, a simple regression model $y = \beta_0 + \beta_1x_1 + \dots + \beta_kx_k + \varepsilon$, where the variable x denotes the level of an attribute (e.g., level of reliability), β is the importance of the attribute level, and y denotes the overall utility, or attitude toward the offering. Advertising can affect this simple model in many ways: (i) informative/comparative advertising can affect perceptions of x for a brand; (ii) persuasive advertising can affect β by linking motivations (i.e., needs) to attributes that are responsive (i.e., instrumental wants); and (iii) advertising that reminds consumers of attributes that influence consideration sets. In addition, advertising can serve other purposes, such as:

- Protecting or enhancing *price premiums*. There is evidence that, ceteris paribus, nonprice advertising leads to lower price sensitivity and hence the ability to charge higher prices (e.g., Farris and Albion 1980). Note that, by the same token, price advertising may *increase* price sensitivity.
- Enhancing sales-call effectiveness. Advertising support may preeducate a prospect so that subsequent sales calls have a higher chance of success. For example, Gatignon and Hanssens (1987) found this to be the case in military recruitment.

- Building distribution. When the trade makes stocking decisions based on anticipated consumer demand and when they perceive that demand to be influenced by advertising, higher distribution levels may be obtained (e.g., Parsons 1974).
- Motivating employees. Advertising may have an “internal” audience in addition to the usual external audience (e.g., Gilly and Wolfinbarger 1998).
- Increasing stock price. Investors are exposed to advertising much as consumers are. Evidence from the PC industry suggests that advertising may increase stock prices above and beyond the effect expected from an increase in sales and profits (Joshi and Hanssens 2004).
- Signaling intentions to competitors. For example, large-budget motion pictures in development may advertise a release date to the public up to one year in advance, to discourage competitive entry in the launch week.
- Building a brand. Although brand-building is often claimed as an intangible (and, ergo, difficult-to-measure) effect of advertising, we are not aware of any scientific evidence that advertising impacts brand equity *above and beyond* the direct effects on sales, price premiums, etc.
- Communicating unusual actions or circumstances. Examples include Tylenol’s reaction to package tampering and Exxon’s dealing with the Valdez accident. (These fall outside the scope of our summary.)

At issue, then, is the appropriate identification of dependent and independent variables. In addition to sales, the dependent variable might be the degree of price sensitivity or influence on salesforce effectiveness. With regard to the independent variables, less guidance currently exists in the literature. Challenges remain, for example, in quantifying and/or representing most creative aspects of advertising and in measuring the relationship to underlying motivating conditions and their ability to engage the attention of prospects. In addition, response models that focus on brand choice or sales levels alone may underestimate advertising’s total impact. We are not aware of any research that has assessed the *combined* influence of advertising across these different areas.

Advertising Decision Making

A critical question is whether firms’ actual advertising decisions are *in line* with observed response patterns. Although there is no clear-cut answer to this question, several components suggest that advertising decisions (especially spending decisions) are *not* necessarily made with market response in mind. In particular:

- There is a clear feedback loop between sales performance and advertising spending (this is one of the early empirical findings of the marketing science literature, e.g., Bass 1969).
- Likewise, at the macroeconomic level, higher consumption leads to more advertising (see, e.g., Ashley, Granger, and Schmalensee 1980) and the strongest determinant of advertising spending at the firm level is corporate profitability: As profits rise, so do advertising budgets, and vice versa. Interestingly, the advent of new media makes little difference. In the U.S., for example, relative advertising spending has been a *mean-reverting time series*, fluctuating around 3% of GNP, for many decades, regardless of technological breakthroughs in communications.
- Advertising levels are also determined by competitive spending; i.e., firms strive to match or exceed their competitors’ A/S ratios. This practice can lead to advertising spending escalations that have negative consequences for profitability (e.g., Metwally 1978).

As a result, any measurement of advertising effectiveness needs to account for the fact that budget allocations are made from within the system of study and are not exogenously determined. In some instances, expenditures are made and resources are allocated to maximize return on investment; in other instances, expenditures are made because of last year's sales. In either case, the amount of expenditure

cannot always be treated as an independent variable. For example, we rarely observe a *reduction* in advertising spending as successful products march through their life cycles. Instead, advertising is generally treated as an *expense* rather than an investment. As a result, any measurement of advertising effectiveness needs to account for the fact that budget allocations are made from within the system of study and are not exogenously determined. In some instances, expenditures are made and resources are allocated to maximize return on investment; in other instances, expenditures are made because of last year's sales. In either case, the amount of expenditure cannot always be treated as an independent variable. For example, we rarely observe a *reduction* in advertising spending as successful products march through their life cycles. Instead, advertising is generally treated as an *expense* rather than an investment (see, e.g., Ambler 2003), and its key determinant is availability of discretionary funds. When this occurs, advertising expenditure should also be treated as a dependent variable in an analysis. Recent advances in the academic literature (see Dekimpe and Hanssens 1995; Yang, Chen, and Allenby 2003) for dealing with simultaneously determined dependent variables (e.g., sales response, advertising expenditure) are appropriate in such cases to measure the effectiveness of advertising.

References

- Allenby, Greg, and Peter E. Rossi (1991), "There Is No Aggregation Bias: Why Macro Logit Models Work." *Journal of Business and Economic Statistics* 9 (January), 1–14.
- Ambler, Tim (2003), *Marketing and the Bottom Line*. London, U.K.: FT Prentice Hall.
- Ashley, R., C. W. J. Granger, and Richard Schmalensee (1980), "Advertising and Aggregate Consumption: An Analysis of Causality." *Econometrica* 48 (July), 1149–67.
- Assmus, G., J. U. Farley, and Donald R. Lehmann (1984), "How Advertising Affects Sales: Meta-Analysis of Econometric Results." *Journal of Marketing Research* 21 (1), 65–74.
- Bass, Frank M. (1969), "A Simultaneous Equation Regression Study of Advertising and Sales of Cigarettes." *Journal of Marketing Research* 6 (August), 291–300.
- Ben-Akiva, M., D. McFadden, T. Garling, D. Gopinath, D. Bolduc, A. Borsch-Supan, P. Delquie, O. Larichev, T. Morikawa, A. Polydoropoulou, and V. Rao (1999), "Extended Framework for Modeling Choice Behavior." *Marketing Letters* 10, 187–204.
- Bettman, James R., M. F. Luce, and John W. Payne, (1998), "Constructive Consumer Choice Processes." *Journal of Consumer Research* 25, 187-217.
- Deighton, J., C. Henderson, and S. Neslin (1994), "The Effects of Advertising on Brand Switching and Repeat Purchasing." *Journal of Marketing Research* 31 (1), 28–42.
- Dekimpe, Marnik, and Dominique Hanssens (1995), "The Persistence of Marketing Effects on Sales." *Marketing Science* 14 (Winter), 1–21.
- Dekimpe, Marnik, and Dominique Hanssens (1999), "Sustained Spending and Persistent Response: A New Look at Long-Term Marketing Profitability." *Journal of Marketing Research* 36 (November), 1–31.
- Eastlack, Joseph O. Jr., and Ambar G. Rao (1986), "Modeling Response to Advertising and Pricing Changes for 'V-8' Cocktail Vegetable Juice." *Marketing Science* 5 (Summer), 245–59.
- Erickson, Gary (1991), *Dynamic Models of Advertising Competition*. Boston, Mass.: Kluwer.

- Farris, Paul W., and Mark S. Albion (1980), "The Impact of Advertising on the Price of Consumer Products." *Journal of Advertising Research* 44 (Summer), 17–35.
- Fennell, G. (1988), "Action As Counterchange: Identifying Antecedents of the Domain and Goal of Action." In *Proceedings*, Division 23, 95th Annual Convention of the American Psychological Association, ed. L. Alwitt.
- Gatignon, Hubert (1984), "Competition as a Moderator of the Effect of Advertising on Sales." *Journal of Marketing Research* 21 (November), 387–98.
- Gatignon, Hubert, and Dominique M. Hanssens (1987), "Modeling Marketing Interactions with Application to Salesforce Effectiveness." *Journal of Marketing Research* 24 (August), 247–57.
- Gilly, Mary, and Mary Wolfenbarger (1998), "Advertising's Internal Audience." *Journal of Marketing* 62 (January), 69–88.
- Hanssens, Dominique M., Leonard J. Parsons, and Randall L. Schultz (2001), *Market Response Models*, 2nd ed. Boston, Mass.: Kluwer Academic Publishers.
- Howard, John A., and Jagdish N. Sheth (1969), *The Theory of Buyer Behavior*. New York, N.Y.: John Wiley and Sons.
- Jones, John Philip (1990), "The Double Jeopardy of Sales Promotions." *Harvard Business Review* 68 (5), 145–52.
- Joshi, Amit, and Dominique M. Hanssens (2004), "Advertising Spending and Market Capitalization." Los Angeles, Calif.: UCLA Marketing Studies Center, Working Paper.
- Keller, Kevin L. (1998), *Strategic Brand Management: Building, Measuring, and Managing Brand Equity*. Upper Saddle River, NJ: Prentice Hall
- Little, John D. C. (1979), "Aggregate Advertising Models: The State of the Art." *Operations Research* 27 (July-August), 629–67.
- Lodish, Leonard M., Magid Abraham, S. Kalmenson, J. Livelsberger, Beth Lubetkin, B. Richardson, and M. E. Stevens (1995), "How TV Advertising Works: A Meta-Analysis of 389 Real World Split Cable TV Advertising Experiments." *Journal of Marketing Research* 32 (1), 125–39.
- 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 (2), 248–61.
- Metwally, M. M. (1978), "Escalation Tendencies of Advertising." *Oxford Bulletin of Economics and Statistics* 40 (May), 153–63.
- Parsons, Leonard J. (1974), "An Econometric Analysis of Advertising, Retail Availability, and Sales of a New Brand." *Management Science* 20 (February), 938–47.
- Pham, Michel Tuan (2004), "The Logic of Feeling." *Journal of Consumer Psychology* 14 (4), 360-9.

- Pham, Michel Tuan, Joel B. Cohen, John W. Pracejus, and G. David Hughes (2001), "Affect Monitoring and the Primacy of Feelings in Judgment." *Journal of Consumer Research* 28 (September), 167-88. (Lead article)
- Petty, Richard E., and Jon A. Krosnick (1995), "Attitude Strength: An Overview." In *Attitude Strength: Antecedents and Consequences*, eds. Richard E. Petty and Jon A. Krosnick. New Jersey: Lawrence Erlbaum Associates.
- Pieters, R., E. Rosbergen, and M. Wedel (1999), "Visual Attention to Repeated Print Advertising: A Test of Scanpath Theory." *Journal of Marketing Research* 36 (November), 424-38.
- Rao, Ambar, and Peter B. Miller (1975), "Advertising/Sales Response Functions." *Journal of Advertising Research* 15 (April), 7-15.
- Sawyer, Alan, and Scott Ward (1979), "Carryover Effects in Advertising Communication." In *Research in Marketing*, ed. Jagdish N. Sheth, 259-314. JAI Press.
- Steenkamp, Jan-Benedict, Vincent R. Nijs, Dominique M. Hanssens, and Marnik G. Dekimpe (2004), "Competitive Reactions and the Cross-Sales Effects of Advertising and Promotion." *Marketing Science*, forthcoming.
- Tellis, Gerard (1989), "Interpreting Advertising and Price Elasticities." *Journal of Advertising Research* 29 (August/September), 40-3.
- Tellis, Gerard (2004), *Effective Advertising*. Thousand Oaks, Calif.: Sage Publications.
- Vakratsas, Demetrios, and Tim Ambler (1999), "How Advertising Works: What Do We Really Know?" *Journal of Marketing* 63 (January), 26-43.
- Yang, Sha, Greg M. Allenby, and Geraldine Fennell (2002), "Modeling Variation in Brand Preference: The Roles of Objective Environment and Motivating Conditions." *Marketing Science* 21 (1), 14-31.
- Yang, Sha, Yuxin Chen, and Greg M. Allenby (2003), "Bayesian Analysis of Simultaneous Demand and Supply." *Quantitative Marketing and Economics* 1, 251-304.
- Zielske, Hugh (1959), "The Remembering and Forgetting of Advertising." *Journal of Marketing* 23 (January), 239-43.