

A New Model for Measuring Advertising Effectiveness

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Recent developments in neuroscience and psychology are converging in a consistent view of how consumers actually “feel” and “think.” This paper will show how we can use that learning to address the question of how advertising works conceptually and use that conceptual foundation to suggest some new measurement methodologies.

ONE OF THE MOST DIFFICULT problems faced by advertising agencies—and advertisers—remains the issue of measuring the effectiveness of the advertising they create and run. It is a rare agency relationship that doesn't encounter the question of how to measure effectiveness of the advertising investment—often one of the largest line items in the marketing budget.

Although measurement methodologies certainly contribute to the problem, this paper begins with the hypothesis that it is fundamentally a conceptual, rather than a measurement, issue. We start, therefore, by elaborating a new theoretical framework for how advertising operates on the consumer. This theoretical model then generates some clear, straightforward, and surprisingly radical alternatives to current techniques for testing advertising.

This theoretical model has direct management implications for marketers as well. Although there are certainly marketers in executive suites today who do have a clear understanding of what to expect from their advertising, there are also a great many senior managers who do not. Establishing a basis for communicating with these senior managers is a major goal of this investigation.

Too often, the conceptual model they implicitly apply to advertising is a simple causal “hierarchy of effects” (Vakratsas and Ambler, 1999), little changed in its essentials from the “AIDA” model (Attention–Interest–Desire–Action), which has been around since 1898 (Strong, 1925). Consumers “change their minds” about a product, then they change their attitude, and then they act. In other words, the process begins with cognition, which

translates to affect, which then translates to behavior. The purpose of advertising in that model is primarily to drive trial by inserting the brand into the consumer's head and keeping it there.

This paper has benefited from earlier work by Holbrook and Batra (1987), which demonstrated the intervening role of emotions in shaping attitudes toward the brand. But our comprehensive review of subsequent literature, including the recent, excellent review and taxonomy by Vakratsas and Ambler (1999), has failed to locate a theoretical construct that assigns cognition to the true role we believe it plays in the consumer's mind. Recent developments in neuroscience and psychology are converging in a consistent view of how consumers actually “feel” and “think.” This paper will show how we can use that learning to address the question of how advertising works conceptually and use that conceptual foundation to suggest some new measurement methodologies.

ELEMENTS OF A NEW APPROACH

Typically models of consumer response to advertising use a response path that flows from cognition-to-affect-to-behavior; in some cases cognition and affect operate separately on behavior (Holbrook and Batra, 1987; Vakratsas and Ambler, 1999). Holbrook and Batra (1987) elaborated on the basic C→A→B model by demonstrating the effect of emotions, such as pleasure, arousal, and domination, on brand attitudes (and therefore, by assumption, on behavior). The weakness of these approaches is in the assumption that cognition plays a primary role in consumer response.

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As noted in the Discussion of the Model (see below), this assumption is no longer tenable in the light of recent developments in neuroscience and cognitive psychology. These developments dictate a complete rethinking of the standard models. "Rational" cognitive processes are not the primary drivers of purchase behavior through which advertising operates. They are in fact outcomes of a complex process of perception, experience, and memory—a process that is driven primarily by emotions and feelings. In the language of the advertising-response literature, our model combines elements of an "integrative" model (Vakratsas and Ambler, 1999), with a reverse-hierarchical model that could be described as $A \rightarrow B \rightarrow C$.

We believe that the role of cognition has been poorly understood in the literature because, although cognition has been viewed simply as a "... system of beliefs ... structured into some kind of semantic network" (Holbrook and Batra, 1987), our collective belief that we are rational, thinking beings has driven us to an implicit assumption that belief systems are closely linked to objective truths, or reality.

Simple reflection should suffice to show that this is often not the case in human experience, and it is certainly not the case in consumers' responses to advertising. "Learning from self-generated experience with a product or service is not a simple process of discovering objective truth. It is, to a greater extent, open to influence, and the consumer's confidence in the objectivity of such learning can be illusory" (Hoch and Deighton, 1989). We need to explicitly understand cognition as the consumer's *interpretation* of reality and build models that help us explain how consumers build that interpretation.

PERCEPTION/EXPERIENCE/MEMORY MODEL OF ADVERTISING

Our model of the consumer's response to advertising maps a process founded in three key elements: perception, experience, and memory. The most important characteristics of this model are:

- Greatly reduced role of cognition: emotions, feelings, affect, and experience dominate cognition at every stage of the process.
- Perception is a dependent variable in the model, influenced by advertising and experience as well as by the consumer's priors.
- Multiple feedback loops connect advertising and perception at every stage of the process.

Figure 1 illustrates the three phases, and flow, of this model. In two of these phases advertising is directly operative—these are pre-experience exposure and post-experience exposure. Within each of these phases there are three critical functions of advertising exposure.

Pre-experience exposure

In the pre-experience phase the critical function of advertising is to frame perception. Framing has three effects on the consumer. The first is creating an expectation for the brand, that is, to prompt the consumer to expect to see it. Viewing an advertisement for a new product or brand creates a perceptual prompt that brings the product into a particular frame of reference. Without that frame of reference, no meaningful perception will take place.

Professional magicians have been "fooling the eye" for centuries, using unexpected placement of objects to prevent their being noticed by the audience; pre-experience exposure must do the reverse, i.e., ensure the consumer *won't* be "fooled" into inattention. A key function of pre-experience exposure is to notify the recipient of the message that a particular type of object with a defined role is in the set of objects that is now available for them to use or purchase.

Second, the pre-experience exposure creates anticipation. An obvious example of how this works is food advertising. Food advertisements (at least the good ones) are designed to make you hungry.

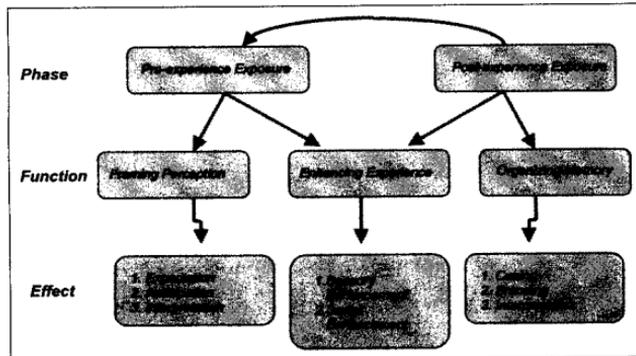


Figure 1. The Three Phases and Flow of the Perception/Experience/Memory (P/E/M) Model of Advertising

Advertising professionals have developed and codified very specific rules defining how to do that: lifting bite-size portions of food off the plate toward the viewer, highlighting certain elements, and so forth. "Food Stylists" and food photographers are very highly paid specialists in the industry, because they can achieve those effects.

In beer advertising, the moment when the cap is opened to release the carbonation (the "whoosh") is an essential element. Life insurance advertising tries to make us anxious about the future and resolve that anxiety through insurance. Business-to-business technology advertising articulates a fear of disaster so IT managers will visualize the safety of a particular solution. Car advertisements try to give us the feel of driving, and so on. Each of these is trying to create a sense of anticipation of a certain experience.

Third, pre-experience advertising may provide a rationale for the anticipation it generates. In many cases, this is explicit, with product specifications or features described in objective terms. Sometimes it is an implied benefit that translates as an objective reason to buy. But even if no objective benefit is obvious, the "interpreter" in the viewer's cortex will supply one.

As we note in the Discussion of the Model (below), the interpreter will do its job of trying to keep the consumer's personal story together, and even if no story is explicitly supplied to explain the anticipation the advertising has generated, it will create one. However, whether the rationale is explicit or implicit, or nonexistent in the advertising itself, cognition, as "interpretation," enters the process only as a third-level effect, after the advertising has created expectation and anticipation.

Enhancing experience

The next key phase in the process is enhancing experience. Advertising has been

shown experimentally to enhance sensory experience both when exposed to the consumer before the experience and, in retrospect, when exposed afterward (see Discussion below). Figure 1 reflects that process: both pre- and post-experience exposure flows into enhancing experience.

In addition to sensory experience enhancement, which is experimentally validated, we add one other element, which is not experimentally proven, but is conceptually a straightforward extension. That is the element of social experience, which is at the core of most service exchanges. Whether a consumer is interacting with a bank teller, a call center, or a landscape contractor, the social aspects of the experience are critical. If the service provider creates a sense of trust and a relationship with the consumer, customer satisfaction will improve. The pre-exposure advertising establishes a basis for that trust and that relationship.

This is a fundamental element of a great deal of business-to-business advertising as well, particularly where the target audience is in the executive suite. Advertising in "credible" media such as business publications and network programming establishes a basis for trust, which becomes an enabler for direct selling.

Post-experience exposure

Post-experience exposure has the key function of organizing memory. First and foremost, it provides verbal, visual, and aural cues to enable the exposed audience to recall the advertisement, the brand, and the product. Each of us can think of an image, a jingle, or a phrase that is an instantaneous key to unlocking a whole set of recollections, with attendant imagery and storehouse of experience. Some of these cues, particularly those from the golden age of great jingles, are almost indelible in memory, and there's no pill that

can make them go away. (A grating mnemonic like "Ring around the collar" comes to mind.)

Related to this cueing of recall is brand-related recall. We consider brand-related recall as a separate effect not because it stimulates the brain differently, which it does not. We hold it apart from generalized recall simply because it is such a critical element of all advertising.

Finally, post-experience exposure is also subject to "interpretation." The advertisement not only influences the consumer to feel that the sensory or social experience was a good one, but it also provides reasons to believe that it was. As with pre-experience advertising, if the advertisement fails to provide or imply a reason-to-believe, the interpreter will supply one.

Categories of exposure

In practice, pure pre-experience exposure only occurs in the case of a completely new product prior to launch, or among non-triers of an existing product. Non-triers could be new to the category, for example, if it is life-stage or age-driven. They could be new to the brand or product if distribution has expanded, or they may be simply unfamiliar with it for whatever reason.

Many, possibly most, target audiences, including the heavy-category users who are critical to the success of most established brands, will be exposed to the advertising in a continuous loop between post-experience and pre-experience, depending on purchase cycles and personal behavior. For them the distinction between pre- and post-blurs, because the advertising will act both to organize memory of the last usage/purchase experience and to frame perception of the next experience. Figure 1 illustrates that feedback process.

DISCUSSION OF THE PERCEPTION/ EXPERIENCE/MEMORY MODEL

This P/E/M model has significant advantages over any of the alternatives currently in the literature. (For a comprehensive review of these alternatives, see Vakratsas and Ambler, 1999.) In the Vakratsas and Ambler taxonomy, this includes both "nonhierarchical" models, such as models of pure affect (Batra and Ray, 1986; Zajonc, 1980) and "integrative" models (Vaughn, 1980; Smith and Swinyard, 1982). The nonhierarchical models suffer from inadequate measurement and are intuitively implausible because they neglect the role of cognition in the advertising process. "Integrative" models go farther, because they do incorporate more complex hierarchical processes. But they do not resolve the problem, because none of these processes accurately captures how advertising really works.

The P/E/M model we propose reflects an understanding of how emotion works in advertising that is consistent with the approach of creatives and professionals in the industry who actually make advertisements and owe their livelihoods to the effectiveness of those executions (see Kover, 1995, for an analysis of the creative process from the copywriter's perspective). Most importantly, however, it explicitly incorporates a role for cognition that is consistent with modern psychology and neuroscience and consistent with empirical business reality.

Experimental psychology and marketing

The need for this model is especially compelling when we review how experimental psychology and neuroscience have expanded our understanding of perception and memory. Empirically, as long ago as 1964, experimental research in psychology concluded that a positive brand schema made beer taste better (Allison and Uhl, 1964). New research continues to support

those early findings, but more importantly, it has recently been shown that advertising can affect experience *after*, as well as before, the fact (Braun, 1999).

In a groundbreaking experiment, with minimal cognitive bias, Braun demonstrated this effect convincingly. From an advertising and marketing perspective, this is a major breakthrough: the work showed that exposure to advertising can transform "objective" sensory information, such as taste, in a consumer's memory, prior to the judgment process, *and after the consumer had tasted the product*.

Braun showed that by exposing consumers to an advertisement for orange juice after tasting a sample of bad-tasting juice, they could be induced to falsely identify the juice they just tasted as a better-tasting sample than the one they actually experienced. The remarkable thing about this experiment was that this was not simply a case of integrating verbal constructs or images from the advertisement they saw into their composite memory of the taste of the juice. The study demonstrated that "... post-experience advertising could make consumers think that they had tasted a more flavorful juice by altering their memories of the tasting experience" (Braun, 1999).

If advertising actually does affect how and what consumers remember, to the point that "... they believe that their past product experience had been as suggested by the advertising" (Braun, 1999), the implications for the role of cognitive, "rational" behavior in the advertising process are dramatic. Advertising is validated as an instrument for shaping not only perceptions and attitudes but "objective" sensory experience as well.

Neuroscience and the mind

Beyond experimental psychology and marketing, the advance of modern research in the mind sciences is having a

profound effect on traditional views of the human mind as a rational decision-making organ with a fixed warehouse of memories. Antonio Damasio, one of the pioneers in the mind sciences who has led the field in exploring the broader implications of this scientific revolution, has expressed this shifting view of the mind succinctly: "Descartes' Error", the concept of a clinically reasoned human mind, is no longer a tenable hypothesis. The mind cannot approach a product in the abstract without a set of parameters to bring it into consciousness" (Damasio, 1994).

This is why we need to have a conceptual model of advertising that explicitly incorporates framing of perception, including expectation, anticipation, and interpretation. Advertising tells people how to perceive a brand, not just why to buy it. Without that framing, they may literally never be aware the brand exists, even if they encounter it directly.

Magicians have exploited this phenomenon for centuries, "hiding" objects in plain view of the audience by creating the expectation that something else should be there. Gazzaniga (1998) cites the example of a magician who makes a donkey appear by simply having an assistant walk the donkey onstage and exchange it for a table, in full view of the audience; they expect to see a table, and that is what they see, until they are directed to see a donkey. Then they see a donkey. More recently, research in visual cognition has verified not only the existence, but also the power, of these phenomena: change blindness, inattention blindness and so forth, which makes the magician's tricks possible (Simons and Chabris, 1999). The significance for us, in the context of advertising, is that people won't necessarily see the brand unless they expect to see it. Advertising tells them to expect to see it.

Similarly, in this new view of how the mind functions, "recall" does not involve

replaying a piece of mental videotape of an experience. It is an active process of remembering that pulls together pieces of memories and reconstructs a new memory that never really existed before. That is why organizing memory is a key component of the model and why exposure to advertising post-experience can change a respondent's "objective" evaluation of experience. In the process of viewing post-experience advertising, a new memory is created, and when the respondent returns to the experience, it is framed by a new perception that corresponds to the new memory. "Objective" reality is a constantly shifting phenomenon.

Another key development that has relevance for this model of advertising is the new functional map of the brain that has been emerging in the mind sciences over the past decade and a half. This "map" represents a profoundly different view of how the brain actually operates, and how mind is created. Scientists who view the brain as an adaptive organism, and have combined modern imaging techniques to identify these adaptive functions, have developed it. They have then employed classical methods of experimental psychology to validate these insights.

Among the many important elements of this new view, one of the most significant for advertising is the concept of "the interpreter." Gazzaniga identifies the interpreter as an element of the left cortex of the brain that reacts to the emotions, messages, and impulses that the brain generates. It tries to make sense of, or interpret, these emotions, in an apparently logical way.

The relevance of the interpreter to understanding how advertising works in the consumer's mind is in this rationalization function. "The interpreter is . . . really trying to keep our personal story together. To do that, we have to learn to lie to ourselves. . . . We need something that ex-

pands the actual facts of our experience into an ongoing narrative, the self-image we have been building in our mind for years" (Gazzaniga, 1998).

This is of the greatest importance for understanding the advertising process. We rely heavily on what consumers themselves tell us when we try to unravel the effects of marketing communications. If what "they" are telling us is in fact a story that the interpreter has put together to make sense of a series of complex and "irrational" emotions and impulses, we need to treat that information appropriately in making business decisions.

EMPIRICAL OBSERVATIONS ON THE BUSINESS ENVIRONMENT

Leading brands and low-risk trial

Further validation for the P/E/M model can be found in empirical observations on the business environment. This model helps to explain why so much advertising is for brands trying to drive repeat rather than trial.

The great majority of advertising is devoted to brands that are extremely well known—often the first and second brands in their category. The major auto manufacturers, household product makers like Procter and Gamble, Coca-Cola, McDonald's, IBM—all these brands have been around for decades, if not longer, and dominate their respective categories. A naïve hierarchical model would suggest that, once a brand becomes established in the consumer's mind, it should no longer be necessary to advertise more than the minimum needed to keep the brand from being forgotten. The P/E/M model highlights the importance of enhancing the consumer experience and organizing memory, which are inherently part of the repeat-purchase process.

If packaged-goods companies cut brand advertising, sales fall not because consum-

ers forget to look for the product in the grocery store, but because their memory of the "objective sensory experience" they have had with the product begins to degrade. Without ongoing advertising, the consumer's experience begins to match the actual product experience. This will fall below the recalled level of competitive products that continue to advertise, and sales will fall.

For a product to succeed in the marketplace on product superiority alone, it must be substantially better than—not equal to!—the advertised alternatives. In the fast-food category, for instance, hamburger chains must provide a highly superior product in order to compete with the massive manipulation of consumer tastes that market leaders like McDonald's and Burger King are able to achieve with their large advertising budgets.

This also helps explain why so much advertising is for products that are very low-risk at trial and have very short purchase cycles, like beverages. Unless the consumer's recall of product quality is constantly maintained at a higher level than the product alone can support, consumers will soon abandon it.

Enhancing experience in consumer markets

Advertising does play an important role in initial trial for these types of products, but it is not necessarily, or even primarily, a promotional role. For example, it has been observed that people will forever prefer the type of music they were listening to when they first started having sex. Linking a brand like Coca-Cola to those powerful adolescent emotions and feelings is a major role of branding/advertising. The trial function of advertising for that type of brand is continuous, because it must bring in each new cohort of users as they reach adolescence. As many kids in the '60s drank Nehi as Coke,

but Nehi never got linked to "cool," and Coke did. It was the status brand.

Beer is another good example. It is a youth product, and it must be linked to the feelings that go with fashion and sex and all the other essentials of youth. Thirty years ago Pearl beer was a beer of choice among young drinkers in Texas. Today it is insignificant, because it was not supported by advertising.

Advertising can organize memory in other ways as well. For example, Gatorade is a unique product, in that the flavor improves if you taste it when you are hot and thirsty. The taste under normal circumstances is not very appealing. Gatorade advertising has always focused on active sports participants who are shown drinking the product while they are hot and thirsty. In the context of this P/E/M model, then, the key function of Gatorade advertising is not just to make you reach for Gatorade the next time you're hot and thirsty. The key function is also to make you recall your sensory response the last time you tasted Gatorade, as though you were hot and thirsty when you were drinking it.

The ubiquity of advertising for products like beer and coffee, which are inherently bitter and difficult to learn to like, also becomes logical. The advertising is critical to improve and reshape objective sensory experience.

Direct-response and retail

Conversely, direct-response advertising, although growing, remains a relatively small category within mass-media advertising compared to more general message advertising. Although a great deal of retail advertising is promotional, and fits broadly under the umbrella of driving trial, if we look closely, it is not really direct-response. The situation is more complex.

Retail stores and supermarkets are only

incidentally trying to drive trial for specific items. The most important function of much retail promotional advertising is to support the function of the "interpreter," by providing a rationale for the shopping experience.

Automobile dealer advertisements, another major category of promotional advertising, play a dual role. One role is similar to other retailers, providing a rationale for the shopping experience. The second, more important function is to motivate the sales force.

Business-to-business

Business-to-business advertising is often seen as less overtly "emotional" than consumer goods, but in this framework we can see that it certainly need not be "rational" to be effective. The best b-to-b advertising speaks to fear, ambition, anxiety, and the need for power. The advertising component of b-to-b is not about making the sale or generating leads. Advertising should make the emotional link between the business as a brand and the deeper anxieties and fears of the decision-maker that a personal sale cannot resolve. The unexpressed fear that the seller is not telling the truth, or the whole truth, can be resolved if the decision-maker sees advertisements that tell him this is a big successful business that knows what it is doing. Much of the best b-to-b advertising is indistinguishable from investor advertising, because the communication of business success works on two levels: invest in me, and buy my products and services.

In-market research

The P/E/M model also helps explain why "real world" research has such a poor record in attempting to measure the behavior of individuals who have seen an advertisement for a particular product and gone out to buy it, compared to people who didn't see the advertisement and didn't go out to buy it.

Split-cable testing, the most comprehensive attempt at this kind of measurement, sometimes shows results when comparing large groups of consumers in test versus control cells—but at the level of the individual consumer, patterns are very difficult to detect. Even at the aggregate group level, many tests show no difference in purchasing patterns between people exposed to advertisements and people who are not exposed. Some recent large-scale field experiments (for example, Lodish et al., 1995) suggest that only half of advertisements tested actually worked.

An eminent marketing academic summarizes the case succinctly: "For the past four decades, modelers have tried to estimate the effects of advertising on brand sales using field data. . . . Meta-analyses of these studies have shown that the effects of advertising are significantly greater than zero but vary by market and product characteristics" (Tellis, Chandy, and Thaiwanich, 2000).

In the P/E/M conceptual view of the world, trial is only a small part of what advertising is meant to accomplish. It follows logically that measuring the pure trial component of advertising would be a difficult task. Of course, there is also a pure measurement problem in any type of research that attempts to measure communications effects in the noisy environment of the real world, but it is not the most important reason we have so much trouble measuring the effects of advertising. The more significant problem is that we have been operating with the wrong theory and measuring the wrong effects.

COPY-TESTING IMPLICATIONS

We now address one of the fundamental conundrums of advertising. How do you measure its effects? We saw in the previous section that even large-scale, expensive in-market tests, which should incor-

porate a wide range of effects, have had only limited success. In the "laboratory" of copy testing, methods for demonstrating true effectiveness have been even more ambiguous in their results.

To understand the nature of the difficulty, we should again review the P/E/M model. At each step of the purchase process, advertising has the potential to intervene in specific ways in the consumer's perceptual processes. Some of these processes are more discrete than others. Pre-experience, before use or purchase, advertising should play a role in improving the odds of a first-time trial. During the phase where the target audience is actually experiencing the product or service, advertising should enhance the quality of the actual experience. Post-experience, advertising should enhance the quality of remembrance. How do we show that a particular advertisement, or portion of one, really does any of these things?

Traditional survey research methods for testing advertisements are unlikely to give us correct measures. These methods rely on questions and answers about the advertisements themselves. No matter how ingenious we are with projective techniques and semantic scales, cognitive bias is inevitable. In the P/E/M framework, any measures that are influenced by cognitive effects should be highly suspect, because the key drivers of the model are emotions, feelings, and experience.

Test the product, not the advertisement

A solution to the conundrum should be obvious, if we again review the path-breaking orange-juice research by Braun (1999). Since we know that advertising is operating both directly and indirectly on sensory experience and social experience, the most comprehensive and accurate measure of copy quality should be the experience itself.

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This methodology sounds deceptively simple and straightforward. But it would in fact represent a radical approach from current practice. Current methods in market research are heavily biased by the Cartesian world-view, which separates the "objective reality" of the product, produced by the manufacturer, from the "subjective" perception of the target audience, which is produced by the creators of the advertising.

If "objective reality" truly were objective and independently knowable, these methods might be valid and relevant. Current market research and testing practices, which separate products from images as completely as possible to avoid "confounding" of effects, would be appropriate. Unfortunately, as we have shown here, confounding is integral to the consumer experience.

The "objective reality" of the product, separate from the perceptual manipulation of the advertising, is not what the consumer actually experiences. Similarly, the perceptual manipulation achieved by the advertising has little meaning outside the context of actual experience with the product. The result is that a great deal, perhaps even the majority, of product testing and copy testing is ineffective at evaluating true quality. At best, it is a tool for risk management in complex hierarchical organizations, to justify rejecting products or copy that management believes does not meet its standard, or accepting those that do.

A valid design for an advertising copy test, for a packaged food product, ought to focus on the product rather than the advertising, comparing test versus control. It should expose one group of consumers to an execution of a new advertising concept, and a second, control group, to a benchmark advertisement. Then each group would sample the same two versions of the advertised product, and rate the two versions on standard hedonic measures.

The critical aspect of this design is that respondents would not be told that they were evaluating the advertisements, and they would not be asked about the advertisements. They would respond to a set of diagnostic questions about the products, designed to capture cognitively the advertising messages. But copy should be evaluated by comparing hedonic product ratings, for the same products, between the test and control cells. Diagnostics would derive from evaluating matches between respondents' cognitive attributions to the products and the messages conveyed in the advertising concepts.

P/E/M effects

This methodology has the ability to capture each phase of the target audience experience. Obviously it would be straightforward to estimate likelihood of trial for both products in each cell and generate statistics for the test cell versus the control cell. This would be a statistically valid measure of the effectiveness of the advertising execution in driving trial.

The key components of the actual use experience would be measured with a comprehensive set of hedonics relevant to

the category, again comparing test versus control. Finally, post-experience attitudes, and likelihood of repeat, would be measured and compared across the two cells.

What about intangible products and services? The packaged-goods situation is easily modeled. Outside the packaged-goods world, testing the actual use experience would require simulation. Without an actual product to sample, consumers must respond to a concept, rather than a product.

Conceptually this would be a simple design to implement. With the rapidly expanding options for creating complex virtual experience online, it is now possible to build rich and complex conceptual environments that give accurate reads on consumer responses to advertising.

In service categories, the appropriate test design would describe the service experience in concept form, after exposing the respondent to advertising. This would again be a test-versus-control design, where each respondent would evaluate service concepts rather than advertising executions. Their evaluations of the service experience described in the concept would then be tested for differences in advertising effects.

The extension to durable goods is straightforward. Concept boards can be presented in as much or as little detail as needed to measure meaningful differences in response. Business-to-business advertising can also be tested in concept form, whether for services or for products.

Accuracy and sensitivity

We believe that this research design would be significantly more accurate in predicting target audience behavior than current copy-testing methodologies, because it measures the real outputs, or effects, of advertising rather than the inputs. These advantages are particularly strong in comparison to standard methodologies

such as communications tests and recall tests, which introduce high degrees of cognitive bias through the testing process. We also believe that this methodology would be much more successful at predicting real-world market outcomes than current methodologies.

The methodology proposed here might in practice be less "sensitive" than recall or communications tests. These tests achieve sensitivity, in the sense that they reliably generate scores that differentiate between executions. But this is spurious sensitivity, achieved at the cost of greatly increasing cognitive bias in the respondent. In communications tests, for example, respondents supply extensive information about their reactions to copy, but the scores are only relevant to the rational decision-making processes supplied by the brain's interpreter, not to the actual decision processes that drive target audience behavior.

If this design, based on product- or experience-based copy testing, is in fact less sensitive than the copy-testing methodologies currently in use, it is because the reduced sensitivity reflects the real world of target-audience behavior. That should be viewed as an advantage, not a disadvantage. In reality, there may be very little difference in effectiveness between a great deal of the advertising in the marketplace today. At the extremes, however, there are probably significant differences: some advertisements are highly effective, and some highly ineffective. We believe this methodology would accurately measure the real differences and ignore the unimportant differences.

CONCLUSIONS

As practitioners in advertising and marketing, we need to move away from explicit and implicit reliance on hierarchical models of advertising's effects. We need to build marketing and advertising on a

model that places affect and experience at the center of the advertising process—in the consumer's mind. The model we propose here fits an understanding of how the human mind works that is consistent with neuroscience in the 21st century.

It is also consistent with the new paradigm that drives our understanding of biological processes in general. C. Robert Cloninger, a leading scientist in the dynamic field of genomics, expressed this new paradigm concisely: "We tend to like to think in terms of separate things operating causally in linear sequence. But that's not an accurate picture of the way biology works" (Angier, 2000). Our model of advertising should reflect our understanding of biology, because consumer response is a biological process.

This model also fits empirical business reality better than any other extant academic model. The gap between marketing science and marketing business has stretched beyond the bounds of credibility. If the measured elasticity of advertising expenditure lies between 0 and .2 (Tellis, Chandy, and Thaiwanich), why would any rational business manager advertise? And if only the irrational business managers advertise, why do those businesses survive, and spend over \$120 billion each year for increases in sales that marketing science tells them are unlikely to exceed \$24 billion?

We also believe that this model leads us to a research design for testing advertising copy that would be more accurate in predicting behavior than current copy-testing methodologies. This would allow us as an industry to understand and use the power of advertising where it is most effective, that is, in shaping perceptions, before, during, and after consumer experience with the "actual" product or service. Just as research on predictive framing showed that advertising is effective when it precedes the usage experience, new research

on post-experience advertising shows that recalled quality is a moving target. That knowledge gives marketers and advertisers leverage with the consumer that goes far beyond the ability to drive awareness and trial. **JAR**

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