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Enhancing and Measuring Consumers' Motivation, Opportunity, and Ability to Process Brand Information from Ads

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# Enhancing and Measuring Consumers' Motivation, Opportunity, and Ability to Process Brand Information From Ads

Considerable research suggests that advertising executional cues can influence communication effectiveness. Related research indicates that communication effectiveness is in part driven by consumers' motivation, opportunity, and ability (MOA) to process brand information from an ad. However, little research has explicitly linked executional cues to communication effectiveness via their impact on MOA and levels of processing. The authors present a framework that explicitly provides such a linkage. The framework highlights the mediational role of MOA in the relationships among executional cues and communication outcomes. It also provides a theoretical account that links apparently disparate cues to their common effects on motivation, opportunity, or ability. The framework is complemented by a critical review of current measures of MOA and proposed measures based on the review. Research issues raised by the framework and the proposed measures are discussed.

**U**NDERSTANDING the myriad research findings on advertising executional cues presents a challenge to both academicians and practitioners. A recent conference at the Marketing Science Institute (1988a) revealed that practitioners often must make decisions about creating or modifying ad executional cues while having little knowledge of the cues' likely impact on viewer processing. Recognizing this problem, MSI designated research on the relationship between advertising executional cues and viewer information processing as a research priority (MSI 1988b).

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Petty and Cacioppo (1986; see also MacInnis and Jaworski 1989) identify two roles for advertising executional cues. One is to *match* executional cues to consumers' information-processing levels. For example, when consumers are unlikely to deeply process brand information from an ad, the use of salient affect-laden executional cues may have a positive effect on ad and brand attitudes. Conversely, when consumers do deeply process the advertised message, different cues (e.g., strong message arguments and cues that support the advertised message) lead to favorable brand attitudes.

A second role for advertising executional cues, and the role explicitly examined here, is to *enhance* consumers' motivation, opportunity, and/or ability (MOA) to process information from an ad. This second role is proactive, seeking to change the level of processing through the use of executional cues. Enhanced levels of processing may be desirable for two reasons. First, the level of processing in the modal viewing context

is likely to be modest given the low involvement nature of most advertising and the extent of clutter and distraction in the typical communication context. Even in "high involvement" purchase decisions, the level of processing may be limited if consumers do not have sufficient ability to encode advertised information. Hence, increasing the level of processing is often an important communication objective. Second, enhanced levels of processing evoke more enduring brand attitudes and memories, and hence are associated with more effective and efficient communication outcomes.

Though considerable research has linked executional cues to specific communication outcomes, little research has directly examined the mediational impact of MOA on the relationships between executional cues and communication effects. Such a linkage is important, as it (1) facilitates the organization and synthesis of much of the (heretofore) disparate research on executional cues, (2) provides a theoretical account for categorizing executional cues as similar in their information-processing outcomes, (3) allows for the identification of novel executional cues that have not been the subject of past research, and (4) identifies important research questions about executional cues and processing outcomes. Further study of the impact of executional cues on enhanced MOA and processing from ads requires measures of motivation, ability, and opportunity. Unfortunately, measures of those constructs are not well developed.

The purpose of our article is fourfold. First, we review research on motivation, opportunity, and ability and their impact on brand information processing from ads. Second, we develop a conceptual framework that organizes executional cue research in terms of the cues' impact on motivation, ability, and opportunity, brand processing, and communication outcomes. Third, we identify key issues in measuring motivation, opportunity, and ability. Finally, we discuss research issues linked to the framework and the proposed measures.

## **The Role of Motivation, Opportunity, and Ability in Ad Processing**

Figure 1 indicates that certain communication outcomes are influenced by the extent of brand information processing from ads. Brand information processing is in turn influenced by consumers' motivation, opportunity, and ability levels. Though motivation, opportunity, and ability are present prior to ad exposure, their levels can be enhanced by ad design

strategy.<sup>1</sup> Ad design strategies consist of information-processing goals, executional strategies, and specific ad cues (see Figure 2). The particular ad design strategy should be influenced by pre-exposure MOA levels.

### **Brand Information Processing**

Brand information processing is defined as the extent to which consumers allocate attention and processing resources to comprehend and elaborate on brand information in an ad. "Brand information" is defined as any executional cue designed to communicate the advertised message. Brand information could be (1) information about the brand name, brand attributes, benefits, usage, users, and/or usage situation, (2) cognitive (e.g., attribute-based) or affective (e.g., emotional), and (3) delivered in either verbal (spoken or written words, songs with words) or nonverbal (e.g., pictures, music without words) modalities. Several levels of brand information processing may be invoked in a given exposure context (see Greenwald and Leavitt 1984; MacInnis and Jaworski 1989; Mitchell 1981). For example, though little attention is devoted to the ad at very low levels of brand processing, at higher levels attention is directed fully toward the ad and processing capacity is sufficient for consumers to generate cognitive responses (Petty and Cacioppo 1979; Woodside 1983) to the message.

### **Communication Outcomes**

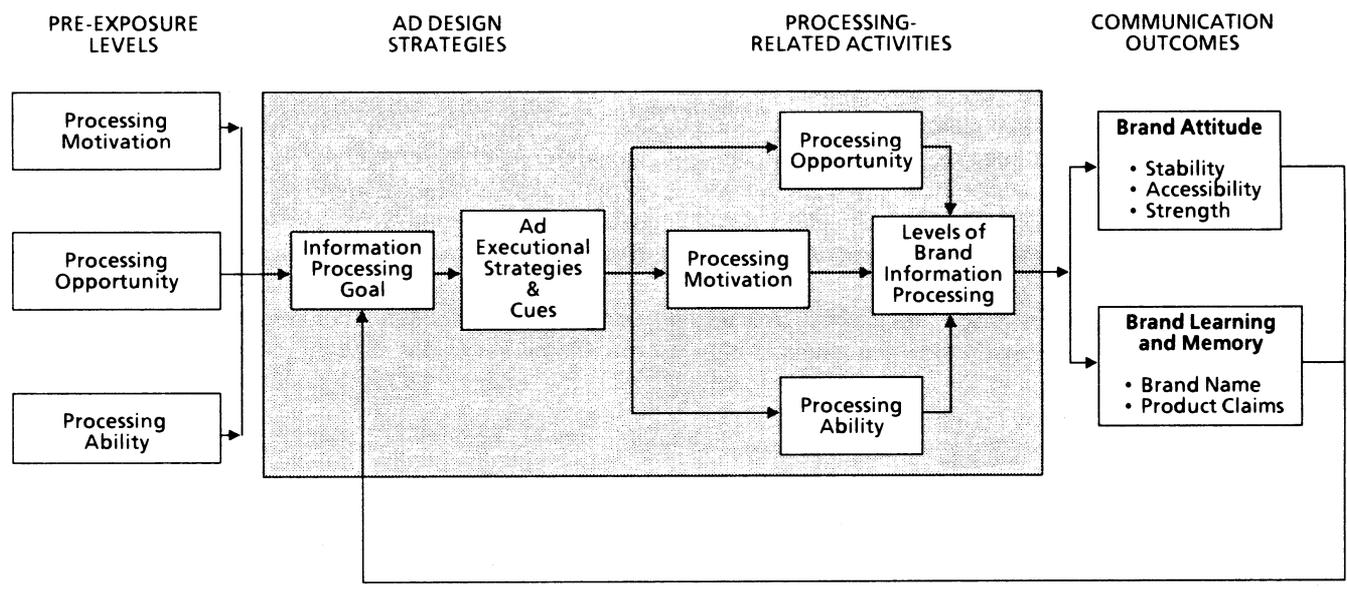
The level of processing from ads influences outcomes typically associated with effective advertising. For example, as consumers achieve higher levels of processing, they attend to, elaborate on, and link together brand information in the ad (e.g., the brand name with product claims). Such attention and processing enhances memory for key brand information such as the brand name and product claims (Alba and Hutchinson 1987; Anderson 1976; Beattie and Mitchell 1985; Lynch and Srull 1982; Saegert and Young 1982, 1983). Research also suggests that high processing levels produce more enduring, stable, and accessible brand attitudes (Berger and Mitchell 1989; Park and Mittal 1985; Petty and Cacioppo 1986). Such attitudes may further influence purchase intentions (Sheppard, Hartwick, and Warshaw 1988) and the likelihood of counterarguing against competitors' claims (Petty and Cacioppo 1986).

As enhanced brand memory and enduring, stable, and accessible brand attitudes are typically positive communication outcomes, one might conclude that it is always desirable to enhance brand processing from

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<sup>1</sup>The arrow from communication outcomes to the information-processing goal indicates that post-exposure feedback serves as input to subsequent ad design.

**FIGURE 1**  
**The Role of Motivation, Opportunity, and Ability in Brand Information Processing From Ads**



ads. However, processing level affects the *strength* and *enduring nature* of memories and brand attitudes, not their *valence*. Whether greater levels of processing produce favorable brand attitudes and memory depends on the extent to which ad content is regarded as strong and compelling (Petty and Cacioppo 1986; Petty, Cacioppo, and Schumann 1983) and whether the audience is in favor of or against the position advocated in the ad (Petty and Cacioppo 1986; Rossiter and Percy 1987). If the message is compelling and the target audience is not adamantly opposed to the message, achieving high levels of brand processing is desirable.

### **Motivation, Opportunity, and Ability**

The level of processing from ads is influenced by consumers' motivation, ability, and opportunity to process brand information during or immediately after ad exposure. Motivation has been defined as goal-directed arousal (Park and Mittal 1985). In the current context, the goal is restricted to the processing of brand information. Thus, motivation is defined as consumers' desire or readiness to process brand information in an ad. That view is consistent with recent definitions such as readiness (Burnkrant 1976; Burnkrant and Sawyer 1983; Moorman 1990), willingness (Roberts and Maccoby 1973), interest (Celsi and Olson 1988), and desire (Petty and Cacioppo 1986) to process information in a persuasive communications context. Though slightly different, those terms each suggest heightened arousal to process external stimuli such as brand in-

formation.<sup>2</sup> High motivation implies that consumers are willing to allocate processing resources to brand information in an ad.

Opportunity is defined here as the extent to which distractions or limited exposure time affect consumers' attention to brand information in an ad. High opportunity implies that the amount of attention allocated to brand information is not impeded. The focus on distraction and limited exposure time is consistent with other discussions of opportunity (Batra and Ray 1986; Petty, Wells, and Brock 1976; Wright 1980). However, unlike other authors (Batra and Ray 1986; Festinger and Maccoby 1964; Osterhouse and Brock 1970; Petty, Wells, and Brock 1976; Roberts and Maccoby 1973; Wright 1980), we do not define lack of opportunity in terms of the disruption of cognitive responses. Our position is that distraction refers to the drawing of attention from one stimulus to another (Webster's 1987), not the outcomes that may stem from allocated attention.

Ability refers to consumers' skills or proficiencies in interpreting brand information in an ad. The availability and accessibility of brand-relevant knowledge structures provide the foundation for processing ability. Hence, high ability implies that prior knowledge necessary to interpret brand information is present and

<sup>2</sup>Batra and Ray (1985, 1986), however, define motivation in terms of the personal relevance of the message to the audience. The above-cited researchers generally view personal relevance as an antecedent to motivation as opposed to motivation itself.

is accessed (Alba and Hutchinson 1987; Sujan 1985).

Figure 1 indicates that motivation, ability, and opportunity can be evaluated before ad exposure (pre-exposure MOA levels) or after ad exposure (post-exposure MOA levels). Pre-exposure MOA levels are influenced by consumer characteristics or situational characteristics (see Alwitt and Mitchell 1985). Post-exposure MOA levels are influenced by those factors and by ad executional cues.

## Enhancing MOA Through Ad Executional Cues

Figure 2 is a conceptual framework explicitly linking specific advertising executional cues to enhanced MOA and subsequent levels of processing.<sup>3</sup> The framework identifies a set of key information-processing goals that can be established to enhance motivation, opportunity, and/or ability levels. The information-processing goals, in turn, can be achieved by means of several specific executional cue strategies consistent with the general information-processing goal (see Figure 2). The information-processing goals and executional cue strategies uniquely associated with consumers' MOA levels are described next.

### Enhancing Processing Motivation

When motivation to process brand information is low, attention is voluntarily allocated to stimuli other than the brand or ad. The information-processing goal appropriate in this situation thus involves first attracting attention to the ad and subsequently increasing brand information processing within the ad (see Figure 2). Several executional cue strategies may enhance attention to the ad.

### Enhancing Attention to the Ad

*Appeals to intrinsic hedonic needs.* Consumers tend to attend to stimuli that make them feel good (Isen et al. 1982). Hence, one class of executional cues achieve their effects by appealing to hedonic needs (Holbrook and Hirschman 1982). Sexual sources and appetite appeals are among such executional cues. Evidence supporting their attentional effects is relatively clear. For example, studies have found ads using sexual (vs. nonsexual) sources create more attention to the ad (Baker 1961), create greater interest in the commercial (Bello, Pitts, and Etzel 1983; Severn, Belch, and Belch 1990), evoke more thoughts about the ad execution (Severn, Belch, and Belch 1990), and achieve higher ad recognition (Reid and Soley 1981) and

product recall (Richmond and Hartman 1982; Tinkham and Reid 1988). Though less has been done on the attention-getting properties of sensory appeals, Stewart and Furse (1986) found higher levels of attention to ads that used such appeals. Therefore:

P<sub>1</sub>: The greater the use of cues that appeal to hedonic needs, the greater consumers' motivation to attend to the ad.

Other factors that are likely to automatically enhance attention to the ad are novelty, complexity, and figurality (Berlyne 1960; Fiske and Taylor 1984; McArthur 1981).

*Novel stimuli.* Novelty in ads can appear in many forms. A stimulus is absolutely novel if consumers have never before been exposed to it. Relative novelty is present if consumers are exposed to familiar stimuli not observed in the recent past. Several novelty-related strategies are used to enhance attention, such as unusual cinematography (Alsop 1988), different commercial formats (e.g., 8- vs. 30-second commercials), and large numbers of scenes in an ad. Anderson and Levin (1976) and Thorson and Zhao (1988) found that novel aspects of commercials such as sudden voice changes, sudden silence, and movement increase ad recall. Burnkrant and Unnava (1987) found greater brand recall when consumers were exposed to three variations of the same ad versus the same ad three times. Unfortunately, novelty may be short-lived, as commercial repetition (Rethans, Swasy, and Marks 1986) and "me-too" advertising reduce novelty perceptions. However, available evidence suggests that:

P<sub>2</sub>: The greater the use of novel executional cues, the greater consumers' motivation to attend to the ad.

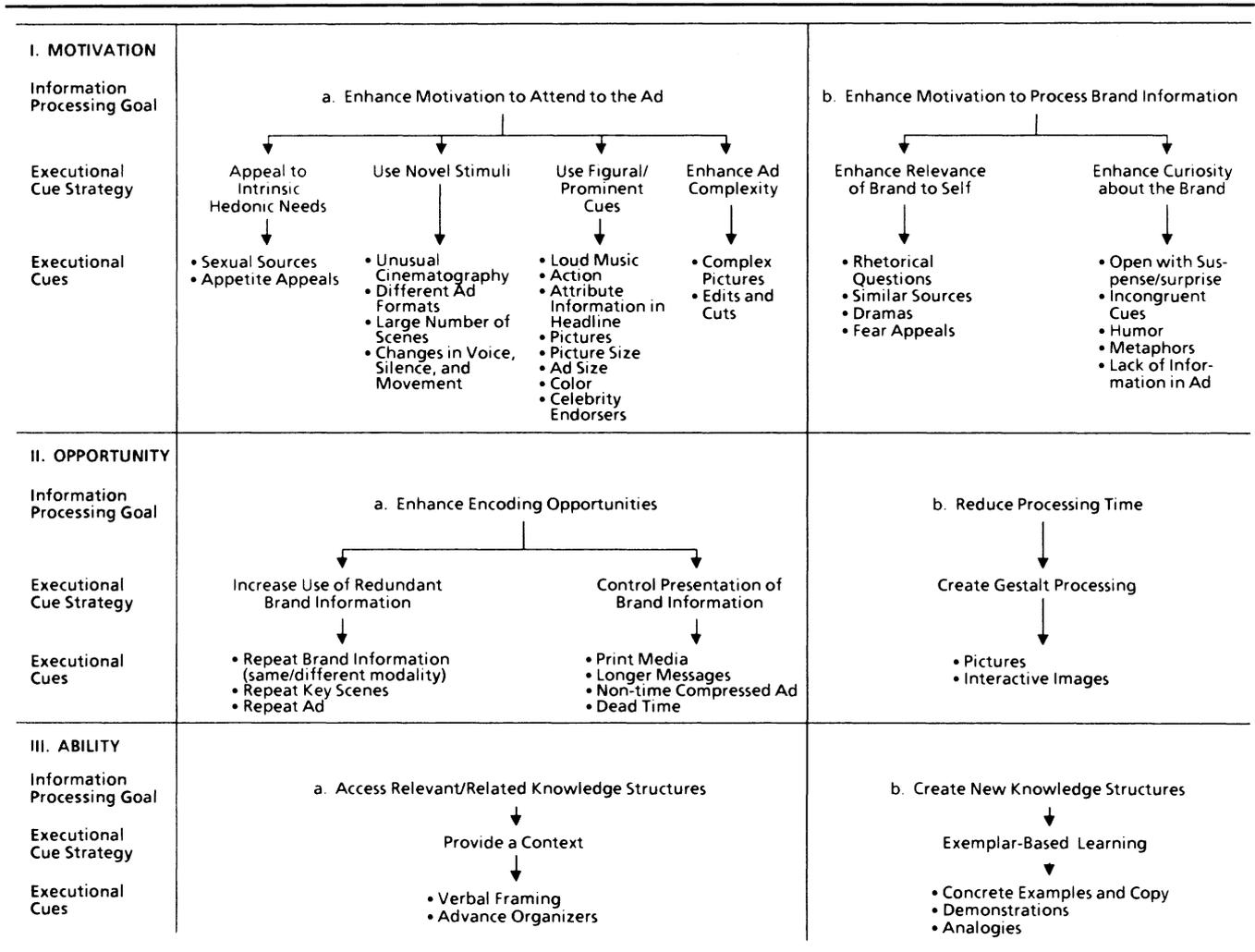
*Figural/prominent stimuli.* Figural and prominent stimuli stand out in the larger ad context. For example, loud music and action in ads capture and hold attention (Hanssens and Weitz 1980). Gardner (1983) found attribute information made prominent by its presence in the headline and copy enhanced brand processing, which in turn influenced attribute beliefs, attitudes, and memory.

Both experimental (Bryce and Olney 1988; Childers and Houston 1984; Kisielius and Sternthal 1984; Krober-Riel 1979; Lutz and Lutz 1977; Paivio 1971; Shepard 1967) and field research (Starch, undated) indicates a strong impact of pictures on attention, elaboration, and memory. Only Finn (1988) has not found evidence for such an effect. The pictorial superiority effect may be explained partly by the fact that pictures are often the most prominent part of ads.

A picture's size also affects its prominence. Several studies indicate that illustration size consistently influences Starch "seen" scores for industrial (Hanssens and Weitz 1980) and consumer print ads (Diamond 1968; Finn 1988; see also Holbrook and Lehmann

<sup>3</sup>Our use of the term "executional cue" includes all manipulatable aspects of ads. We therefore include such elements as appeals, cues themselves (e.g., sources), and cue characteristics (e.g., source credibility).

**FIGURE 2**  
**Conceptual Framework: Enhancing Consumers' Motivation, Opportunity, and Ability to Process Brand Information From Ads**



1980). Moreover, the size of the ad itself influences ad prominence and consequent attention to the ad (Finn 1988).

Another predictor of prominence is color. Though Childers and Houston (1984) found no effects for color on memory, Chute (1979) found that viewers look longer at colored than at black and white pictures. This phenomenon is confirmed by Starch scores, which consistently show higher attention scores for color ads (Starch undated; Finn 1988). Recent research also has shown greater ad recall for color than for black and white ads (Beattie and Mitchell 1985).

Finally, certain characteristics of sources can stand out as prominent in an ad. One such characteristic is the use of celebrity sources. Friedman and Friedman (1979) propose that celebrities in ads should enhance ad recall. Mapes and Ross (cited by Ogilvy and Raphaelson 1982) reported a 22% increase in ad recall for ads using celebrities, and Petty, Cacioppo, and

Schumann (1983) found that celebrity sources enhanced product recall. Atkin and Block (1983) found higher reported interest in commercials that used celebrity sources than in ones that did not. In general, research suggests that:

P<sub>3</sub>: The greater the use of figural/prominent executorial cues, the greater consumers' motivation to attend to the ad.

*Complexity.* According to Berlyne (1960), complexity is a function of (1) the number of distinguishable elements in the stimulus, (2) the dissimilarity between elements, and (3) the degree to which combinations of stimulus elements are responded to as separate (vs. as a unit). Some researchers have found significantly longer looking times for visually complex than for simple ads (Morrison and Dainoff 1972). Others report that complex pictures influence picture memory (Fleming and Shekhian 1972). Lang and

Lanfear (1990) identify several studies showing that complexity achieved through cinematographic techniques such as edits and cuts increases attention to an ad. Schleuder (1990) found that complexity in ads enhanced attention to the ads and memory for an unknown political candidate. Cox and Cox (1988) further found that complex ads wear out more slowly than do simple ads. Hence:

P<sub>4</sub>: The more complex the array of executional cues in an ad, the greater consumers' motivation to attend to the ad.

### *Increasing Processing of Brand Information*

Whereas the preceding executional cues can increase motivation to attend to the *ad*, other cues enhance motivation to process *brand* information within the ad by stimulating (1) thoughts about the relationship of the product/brand and the self or (2) curiosity about the brand.

*Enhance the relevance of the brand to the self.* Research has shown consistently that information perceived as self-relevant (vs. nonrelevant) elicits voluntary attention (Bettman 1979; Chaiken 1980; Mitchell 1981; Petty and Cacioppo 1979, 1986; Petty, Cacioppo, and Goldman 1981; Petty, Cacioppo, and Schumann 1983) and is processed more extensively (Kendzierski 1980; Kennan and Baillet 1980). This effect is thought to occur because the richness of the conceptual structures pertaining to the self facilitates cognitive and emotional elaboration.

As Figure 2 indicates, a variety of executional cues can enhance the relevance of the brand to the self. First, rhetorical questions generally ask the readers to think for themselves about a question posed about the brand. Research supports the notion that consumers focus more attention on and generate more cognitive responses to an ad argument posed rhetorically than to the same statement posed declaratively (Burnkrant and Howard 1984; Petty et al. 1986; Swasy and Munch 1985).<sup>4</sup>

Second, sources similar to the reader/viewer who proclaim the brand's benefits capture attention (Anderson 1985), encourage deeper levels of processing, and promote vicarious emotional responses because consumers often perceive substantial goal congruity between a similar source and the self (Hoffman 1977; Rossiter and Percy 1983). Third, dramas in which brand benefits are illustrated in the form

<sup>4</sup>Note that this effect occurs only when processing MOA is low. Several researchers have found that when motivation (e.g., involvement) is high, rhetorical questions interfere with message processing, resulting in reduced argument recall (Munch and Swasy 1988; see also Petty, Cacioppo, and Goldman 1981; Swasy and Munch 1985). Also, this research has not demonstrated empirically that rhetorical questions generate more support arguments because the questions highlight the brand's self-relevance.

of a story (Wells 1988) may stimulate brand processing by drawing the viewer into the ad and evoking empathic identification with the actors in the ad (Deighton, Romer, and McQueen 1989). Fourth, fear appeals may enhance self-relevance by getting the viewer to consider the negative consequences that may befall the self as a result of product use, misuse, or nonuse. However, evidence about the impact of fear appeals on processing is limited as most research on fear examines the effect of fear on persuasion, not processing (see Belch, Villarreal, and Belch 1985; Gelb, Wong, and Zinkhan 1985; Sternthal and Craig 1974). Collectively, the work cited suggests:

P<sub>5</sub>: The greater the use of cues that enhance the relevance of the brand to the self, the greater consumers' motivation to process brand information from ads.

*Enhance curiosity about the brand.* Cues that evoke curiosity are perceived as "interesting" and lead to deeper levels of processing (Hastie 1980; Lynch and Srull 1982). Consequently, one strategy for enhancing motivation to process brand information is to use executional cues that enhance curiosity about the brand. Stewart and Furse (1986), for example, reported more attention to ads that open with a surprise or suspense. Relatedly, Myers-Levy and Tybout (1989) found greater message processing when consumers were shown attribute information incongruent with their schema for the product category (i.e., an "all natural" soda). Houston, Childers, and Heckler (1987) reported enhanced product category and brand name memory when an interactive picture and its associated copy conveyed information about different as opposed to the same attributes. Sujan (1985), however, found that ad information incongruent with schematic expectations influenced elaborative processing only when ability was high (e.g., for expert consumers). The nature of incongruity, its effects on processing motivation, and the contingencies under which processing is enhanced thus warrant greater attention.

Empirical research (Madden and Weinberger 1982) as well as managerial judgment (Madden and Weinberger 1984) suggests humor may stimulate attention, evoke greater message processing (Lammers et al. 1983; Madden and Weinberger 1982), and enhance message comprehension (Duncan, Nelson, and Frontczak 1984). Ads can be humorous in many ways (e.g., exaggeration, parody, etc.), one of which is by presenting the brand in situations regarded as unexpected or surprising. Unfortunately, research has not confirmed that the positive effects of humor are due to the surprise value of brand information in the ad.

Metaphors, statements that involve an unexpected relationship between two objects rarely compared, have been hypothesized to enhance processing motivation (Ward and Gaidis 1990). Gray and Snyder (1989) found

that copy containing metaphors improved free and cued recall of brand names. Ward and Gaidis (1990) identify research indicating longer reading and processing times for metaphors than for literal statements.

Finally, curiosity stimulated by lack of information in an ad may enhance processing motivation. For example, Severn, Belch, and Belch (1990) found more product and message thoughts and fewer execution-related thoughts when the message contained high levels (approximately 50 words) versus low levels (approximately 14 words) of information. Collectively, the work cited suggests that:

P<sub>6</sub>: The greater the use of cues designed to elicit curiosity about the brand, the greater consumers' motivation to process brand information in the ad.

### **Enhancing Processing Opportunity**

When processing opportunity is low, either achieved processing levels are interrupted because processing becomes distracted or processing levels are limited because information cannot remain in memory long enough for higher levels of brand processing to occur. In such situations, the information-processing goals should be to (1) enhance encoding opportunities within the ad itself or (2) reduce the needed processing time.

### **Enhancing Encoding Opportunities**

Figure 2 indicates two strategies for enhancing encoding opportunities, (1) increase the redundancy of and/or (2) control the presentation of brand information.

*Enhance redundancy of brand information.* Cues are redundant to the extent that they present the same information several times. Redundancy has several implications for enhanced processing opportunity. First, redundant information provides more chances for encoding brand information and reduces the likelihood that consumers will become distracted by irrelevant cues. Second, redundant information primes the redundant cue in working memory, which in turn enhances the speed and accuracy of recognizing the cue on subsequent presentations (Feustel, Shiffrin, and Salasoo 1983). Finally, the encoding of redundant information implies that relevant information is present for longer periods in memory (Kieras 1978), enhancing the likelihood that it will be stored and retrieved from memory.

Within a given modality such as the spoken word, the same brand-relevant cue can appear repeatedly in an ad. Though little research has examined the effect of redundancy of a cue on message processing, MacInnis (1988) found that providing redundant information about a brand attribute throughout an ad enhanced consumers' comprehension of the advertised message. Similarly, Lautman and Dean (1983) found that stating product attributes twice had a marginal effect on consumers' recall of the message.

Cues also can be redundant across modalities. For example, an ad can portray a given benefit visually and describe it verbally. Reese (1984) found enhanced memory for televised news when information on audio and video tracks was redundant. In addition, research indicates performance on a divided-attention task is enhanced if the modality used to process one task such as the ad differs from the modality used to process another task (i.e., carrying on a conversation while watching a TV commercial) (Allport, Antonis, and Reynolds 1972; Glass, Holyoak, and Santa 1979; Treisman and Davies 1973). Thus, if consumers are engaged in a visually oriented secondary task and the ad provides verbal and visually redundant information, there is increased likelihood that consumers will encode the verbally oriented material in the ad.

Processing opportunity is enhanced also by repetition of key scenes within the ad (Liu 1986) and repetition of the ad itself. Krugman (1973) argues that several repetitions of an ad are necessary to provide sufficient brand-processing opportunity. Consistent with this notion, repetition in ads has been associated with greater levels of cognitive responding (Belch 1982; Petty and Cacioppo 1979, 1980), more enduring brand/ad attitudes, greater brand and message recall (Schumann 1983), higher ad recall (Batra and Ray 1986), stronger purchase intentions (Batra and Ray 1986; Edell and Keller 1988; Petty and Cacioppo 1979, 1980; Rethans, Swasy, and Marks 1986; Saegert and Young 1982; Stewart and Furse 1984), and more accessible and confidently held attitudes (Berger and Mitchell 1989). Pechmann and Stewart's (1989) review of ad repetition further supports the impact of repetition on learning and memory for brand information across field and lab studies. Ad repetition is, however, a costly tactic for enhancing processing opportunity. Furthermore, as discussed subsequently, too much repetition can reduce processing motivation (Anand and Sternthal 1990; Batra and Ray 1986). Generally, though:

P<sub>7</sub>: The greater the use of redundant brand information within and between ads, the greater consumers' opportunity to process brand information.

*Control cue presentation.* Opportunities to process brand information can be enhanced greatly if message arguments are delivered at a rate conducive to processing them. Hence, the second general strategy to enhance processing opportunity is to control the presentation rate of executional cues. One strategy for controlling encoding speed is to use print media. Print enables consumers to process brand information at their own pace. Chaiken and Eagly (1976) found enhanced comprehension of a difficult message with print versus broadcast media (see also Andreoli and Worchel 1978; Wright 1981). Likewise, MacKenzie (1986) demonstrated that consumers pay more atten-

tion to brand information if given more time to examine it.

Still another tactic to increase processing opportunity is to use longer messages (Loftus and Kallman 1979). Stewart and Furse (1984, 1986) found that processing time, length of ad exposure, and length of brand exposure enhanced comprehension and memory for an advertised message. More research on this phenomenon is needed because it is not clear whether observed effects are due to length *per se* or the fact that longer commercials are more likely to repeat brand information. Use of this tactic also suggests potentially greater costs for each exposure, and threatens comprehension if complexity is increased along with length.

If longer messages enhance processing opportunity, time-compressed messages should reduce processing opportunity. Though MacLaughlan and Siegel (1980) found greater recall scores for time-compressed than for noncompressed ads, other studies show the opposite. In a series of experiments, Moore, Hausknecht, and Thamodaran (1986) found that time compression reduced attention and the number of brand cognitive responses, and enhanced consumers' use of peripheral cues within the ad. Schlinger et al. (1983) found that time-compressed ads resulted in fewer ideas being recalled from the commercial, suppressed emotional involvement in the ad, and produced fewer counterarguments (see also Wright 1974). Lautman and Dean (1983), however, found no systematic effects of time compression on message processing. They speculate that whether time compression has positive, negative, or null effects is likely to depend on the extent of compression.

If controlling cue presentation is indeed a generic tactic for enhancing processing opportunity, an executional cue variable consistent with that technique involves using "dead time" in broadcast media. Such a technique may enhance the encoding time of presented information by *not* presenting information after an important idea to facilitate its encoding. Consistent with this notion is Lang and Lanfear's (1990) suggestion that pauses be used at key points in ads to enhance encoding; however, we are aware of no research that has systematically examined such an effect. Hence, pauses are a novel executional cue in our framework.

P<sub>8</sub>: The greater consumers' control over (1) rate of brand information presentation and/or (2) length of exposure to brand information, the greater consumers' opportunity to process brand information.

### **Reducing Required Processing Time**

As Figure 2 indicates, a second goal for enhancing processing opportunity is to reduce required processing time. One strategy for reducing processing time is to use stimuli that can be processed immediately

and holistically. An ad cue that creates such an effect is pictures, particularly interactive images. An interactive image presents a single picture that visually illustrates a brand name and product category or attribute (e.g., Bullett Trucking Company with a picture of a truck shaped like a bullet, thereby implying speed). Both pictures and interactive images have been found to achieve more enduring learning effects than do verbal stimuli. For example, Shepard (1967) found lasting recognition for advertisements that contained pictures; Lutz and Lutz (1977) reported that interactive images were remembered better than noninteractive images or words; and Childers and Houston (1984) found that "delayed" memory for interactive pictures was superior to memory for noninteractive conditions when the information was encoded in a sensory modality.

Several factors account for the usefulness of pictures or interactive pictures under conditions of low opportunity. First, pictorial information is processed holistically and simultaneously (Holbrook and Moore 1981; Liu 1986; Pomerantz 1981). Such processing implies that low opportunity consumers can encode fairly complex feature interactions presented by a picture in little time. Importantly, to be maximally useful, the interactive image should contain key brand information such as the brand name, attributes, or benefits. In sum:

P<sub>9</sub>: The greater the use of brand-related executional cues that are suitable for gestalt processing, the greater consumers' opportunity to process brand information.

### **Enhancing Processing Ability**

Figure 2 includes two strategies for enhancing processing ability, (1) accessing relevant knowledge structures and (2) creating new knowledge structures.

#### **Accessing Relevant Knowledge Structures**

One strategy for accessing relevant knowledge is to provide a context for interpreting brand information. Because many visual and verbal stimuli are ambiguous in isolation (Johnson and Malgady 1980), communication is facilitated by providing a context for processing the stimuli (Bower, Karlin, and Dueck 1975; Bransford and Johnson 1972, 1973; Carpenter and Just 1977). For example, Edell and Staelin (1983) found that when pictures in ads were framed (i.e., had a verbal label), consumers used the label as a framework for interpreting the pictures. In comparison with an unframed ad (picture only, without a verbal label), ads that were framed created more brand cognitive responses, greater recall of brand information, and less response time to questions about brand information. Kamins and Marks (1987) found that exposure to a framed ad followed by an unframed ad resulted in more consistent attitudes and stronger behavioral intentions than exposure to an unframed ad followed by a framed

ad. The explanation is that the framed ad created a context for interpreting the unframed ad. Lang and Lanfear (1990) report research indicating that both print and TV messages with (vs. without) narrative structures enhance comprehension and message recall.

The effect of context on processing ability also can be achieved by the general communication context in which the ad is embedded. Ward and Gaidis (1990) for example, propose that the general media vehicle (e.g., a sports magazine) may enhance comprehension of metaphors that may be difficult to process (e.g., Nissan truck, the Hardbodies). Such findings are consistent with those of Alesandrini (1983), who notes that ads using advance organizers alert viewers to the appropriate knowledge structure, guiding interpretations of subsequently presented information. Hence:

P<sub>10</sub>: The greater the use of brand-relevant context, the greater consumers' ability to process brand information.

### *Creating New Knowledge Structures*

When advertisers must communicate information for which prior knowledge is unavailable, the information-processing strategy consists of creating relevant knowledge structures via exemplar-based learning. This principle involves building on present knowledge networks so as to make new information interpretable (Wittrock 1974). An effective approach for such a strategy is the use of concrete examples and words, as opposed to more abstract information, to illustrate attributes or benefits. Studies reviewed by Belch, Villarreal, and Belch (1985) show that concrete words in advertising are associated with higher recall and greater brand comprehension (see also MacLaughlan 1983). MacKenzie (1986) also found that the concreteness of an attribute in ad copy influenced the consumers' attention to that attribute.

Other techniques also use examples to create new knowledge. Demonstrations show consumers, by way of example, product attributes and their associated emotional or cognitive benefits. Stewart and Furse (1986) report considerable gains in recall and comprehension tied to ads using demonstration appeals. Analogies, though they have received little study in an advertising context, are a method of exemplar learning, drawing a linkage between a well-learned and a to-be-learned concept. In essence, they facilitate inference-making for product attributes/benefits by their comparison with a well-defined example (Brooks 1978; Rummelhart and Norman 1980). Hence:

P<sub>11</sub>: The greater the use of brand-related executional cues that promote exemplar-based learning (e.g., demonstrations, analogies, concrete examples), the greater consumers' ability to process brand information in an ad.

## **Measurement of Motivation, Opportunity, and Ability**

Though the preceding framework has numerous advantages, its value in an academic context would be greatly enhanced by the availability of measures of MOA in both pre-exposure and post-exposure contexts. Pre-exposure measures are important because consumers who differ in their MOA levels should differ in their responses to ads, memory processes (Mitchell 1981), and brand attitude formation processes (MacInnis and Jaworski 1989). Post-exposure measures would allow critical tests of the mediational linkages between information-processing goals, executional cues, MOA, processing, and communication outcomes. Assessing those links is particularly important for research on novel cues.<sup>5</sup> Unfortunately, guidelines for the measurement of MOA are still emerging. We next critically review representative operationalizations of MOA.<sup>6</sup> Subsequently, we rely on emergent methodologies and additional issues to make recommendations for assessing each construct.

### **Measuring Motivation to Process Brand Information**

*Review/critique.* Though advertising researchers assign considerable importance to motivation in directing processing, it has been operationalized in at least three distinct ways (see Table 1). First, some operationalizations reflect factors that *affect* motivation, such as the importance of the purchase decision (Celsi and Olson 1988; Lutz, MacKenzie, and Belch 1983; Maheswaran and Sternthal 1990) and the extent to which brand choices matter to respondents (Batra and Ray 1985, 1986). Unfortunately, those operationalizations ineffectively tap the construct domain by measuring the antecedents to motivation, not the construct itself. Furthermore, the antecedents are imprecise indicators as they do not tap motivation's arousal function. Though the antecedents *should* enhance motivation, evidence should be presented to show that they *do* in a given situation.

A second method for operationalizing motivation is to assess processing *outcomes* thought to stem from motivation. Such outcomes may include consumers' attention to and comprehension of salient stimuli (Celsi and Olson 1988) and the number of cognitive responses after ad exposure (Roberts and Maccoby 1973).

<sup>5</sup>Though the audience for this article is academicians, such measures are also important in applied contexts. Measures of pre-exposure MOA would allow advertisers to determine whether executional cues are indeed needed to enhance MOA. Post-exposure measures would provide diagnostic information about the "enhancing" impact of specific cues on MOA.

<sup>6</sup>Our review is restricted to authors who have explicitly used the motivation, ability, and/or opportunity constructs.

**TABLE 1**  
**Representative Operationalizations of Motivation, Opportunity, and Ability**

Construct/Selected Studies	Operationalization	Context
<b>I. Motivation to Process</b>		
A. Motivation operationalized as processing antecedents		
Batra and Ray (1985, 1986)	• Measured extent to which product category is one in which brand choices matter to respondents	Advertising
Celsi and Olson (1988)	• Measured intrinsic motivation with Zaichkowsky's (1985) Personal Involvement Inventory	Advertising
Lutz, MacKenzie, and Belch (1983)	• Manipulated situational motivation by chance to win products in a lottery	Advertising
Maheswaran and Sternthal (1990)	• Measured involvement by evaluating the importance of the purchase decision	Advertising
	• Manipulated motivation by informing subjects they were participating in a large opinion survey (low) or were part of a select group of people whose opinions were being solicited by a manufacturer	Advertising
	• Measured motivation by involvement with the task and motivation to process the message (no further elaboration provided)	
Petty and Cacioppo (1986) <sup>a</sup>	• Typically manipulate motivation antecedents, including personal relevance, personal responsibility, number of message sources, and need for cognition	Persuasive communications
B. Motivation operationalized as processing outcomes		
Celsi and Olson (1988)	• Measured attention and comprehension of salient stimuli	Advertising
Petty and Cacioppo (1986) <sup>a</sup>	• Typically measure attitudes; cognitive responses sometimes included	Persuasive communications
Roberts and Maccoby (1973)	• Measured actual counterarguing as the mean number of comments produced by subjects during and after exposure; also measured comment type, directionality, and intensity	Persuasive communications
C. Motivation operationalized as goal-directed arousal		
Moorman (1990)	• Measured enduring motivation prior to exposure by asking consumers to rate their general interest in reading nutritional information	Information disclosure
	• Measured stimulus-induced motivation after exposure by asking subjects to rate interest in attending to nutritional information	
<b>II. Opportunity to Process</b>		
A. Opportunity operationalized as the disruption of cognitive responses		
Festinger and Maccoby (1973)	• Manipulated opportunity with sound track about fraternity abolition with humor video or abolition video	Persuasive communications
	• Measured number and nature of cognitive responses	
Krugman (1967)	• Manipulated sociopolitical or celebrity bracketing around ads	Advertising
	• Measured connections between self and ads	
Osterhouse and Brock (1970)	• Measured counterargument and support argument production	Persuasive communications
Petty, Wells, and Brock (1976)	• Measured counterargument and support argument production	Persuasive communications
Roberts and Maccoby (1973)	• Manipulated opportunity by varying time available to subjects to generate and rehearse comments as they listened to messages	Persuasive communications
Wright (1980)	• Measured cognitive responses and accessibility of thoughts	Advertising
B. Opportunity operationalized as the distraction of attention		
Batra and Ray (1986)	• Manipulated opportunity by the number of attribute arguments in an ad: high number (high opportunity) or low number (low opportunity)	Advertising
	• Measured manipulation of opportunity by evaluating ad's informativeness	
	• Measured brand familiarity, ad recall, brand attitudes, and brand purchase intentions	
Webb (1979)	• Measured attention to ad, recall of ad material, cognitive responses, attitudes, and purchase intent	Advertising

This approach is problematic, however, because the indicators reflect outcomes and not motivation itself. Furthermore, such indicators are imprecise because processing outcomes are affected by motivation, ability, and opportunity.

The third method for measuring motivation is to assess directly consumers' goal-directed arousal to

process brand information in an ad. Moorman (1990), for example, measured subjects' desire to process nutrition information generally (enduring motivation) and desire to process nutrition information after exposure to a stimulus (stimulus-induced motivation). Though this measure may be criticized as a self-report measure, it shows greater correspondence with the con-

**TABLE 1 (continued)**  
**Representative Operationalizations of Motivation, Opportunity, and Ability**

Construct/Selected Studies	Operationalization	Context
<b>III. Ability to Process</b>		
A. Ability operationalized as usage experience		
Anderson and Jolson (1980)	• Measured experience by asking respondents to rate experience with products	Advertising
Batra and Ray (1985)	• Manipulated ability to process through prior knowledge and usage as reflected in market share; two levels of brand share manipulated	Advertising
Bettman and Park (1980)	• Measured knowledge by asking subjects whether they ever searched for information on, used, or owned product; "yes" on ownership placed subjects in high knowledge/experience condition	Choice
Monroe (1976)	• Measured experience and classified in three levels: recent-use experience, purchase-use experience in past two years, no prior purchase experience	Preference
B. Ability operationalized as subjective knowledge		
Batra and Ray (1986)	• Measured knowledge by extent to which subjects considered themselves knowledgeable about category through usage or otherwise	Advertising
Brucks (1985)	• Measured knowledge by asking subjects to rate their knowledge as compared to the average person	Search
Johnson and Russo (1984)	• Measured knowledge by asking subjects to rate familiarity with product knowledge compared to the rest of population	Learning
Lutz, MacKenzie, and Belch (1983)	• Measured knowledge by asking subjects to assess how knowledgeable they were about the product class	Advertising
Moorman (1990)	• Measured ability to process by assessing subjects' perceptions of stimuli meaning and confidence in using information	Information disclosure
Park and Lessig (1981)	• Measured knowledge by asking subjects their opinions on which product features would be important in making a choice	Choice
C. Ability operationalized as objective knowledge		
Brucks (1985)	• Free response questions to tap XYZ knowledge in five areas: terminology, available attributes, criteria for evaluating attributes, perceived covariance between attributes, and factors of XYZ usage situations that determine attribute importance • Structured questions were also asked in each of 5 domains • Measured knowledge by combining all items (except one) into overall knowledge scale	Search
Kanwar, Grund, and Olson (1990)	• Measured knowledge with a series of factual multiple-choice questions	General
Maheswaran and Sternthal (1990)	• Measured product knowledge through knowledge questionnaire; median split to divide novice and expert; also measured subjects' self-reports of knowledge and found convergence with objective measure	Advertising
Moorman (1990)	• Measured nutritional knowledge by asking subjects to match 10 nutrients to 10 health-related outcomes	Information disclosure
Park, Gardner, and Thukrhal (1985)	• Manipulated knowledge by providing different amounts of product information to subjects	Choice
Sujan (1985)	• Measured knowledge with an objective knowledge scale	Evaluation
D. Ability operationalized as combinatorial knowledge indices		
Rao and Monroe (1988)	• Measured knowledge with a composite multi-item scale combining an assessment of information in memory (objective knowledge) with self-assessment perceptions of familiarity (subjective knowledge)	Evaluation

<sup>a</sup>Based on several studies testing the elaboration likelihood model.

struct definition than do the other two measures discussed. Hence, it allows for assessment of causal linkages between processing antecedents (e.g., self-relevance, importance of the decision), motivation, and the processing consequences that stem from it (e.g., attention, cognitive responses).<sup>7</sup>

<sup>7</sup>Though some researchers do not conceptually distinguish motivation from involvement (Lutz, MacKenzie, and Belch 1983) or see motivation as a broader conceptualization of involvement (Park and Mittal 1985), others have not referred to the motivation construct *per se*, but to involvement. We focus on operationalizations of motiva-

*Measurement implications.* With the preceding review and critique in mind, we identify several approaches to measuring motivation. Following Table 2, we articulate potential measures in both pre- and post-exposure contexts. First, self-report measures of willingness and/or desire to process brand information in an ad (see Moorman 1990) could be used as indicators of motivation, as those measures clearly indicate the motivation construct. Such desire/willing-

tion, but a similar critique of the involvement literature could also be made (see Laczniak, Muehling, and Grossbart 1989).

**TABLE 2**  
**Measurement of MOA in Pre- and Post-Exposure Contexts**

<b>Construct</b>	<b>Definition</b>	<b>Assessment Context</b>	<b>Measurement</b>
1. Motivation to process brand information	Goal-directed arousal; desire/willingness to process brand information	Pre-exposure	<ul style="list-style-type: none"> <li>• Self-report measures of desire to process brand information</li> <li>• Physiological responses</li> <li>• Norms for ad avoidance behavior</li> </ul>
		Post-exposure	<ul style="list-style-type: none"> <li>• Self-report measures of desire to process brand information</li> <li>• Physiological responses</li> <li>• Desire to shift from secondary task to ad/brand</li> </ul>
2. Opportunity to process brand information	Distraction or limited time to attend to brand information	Pre-exposure	<ul style="list-style-type: none"> <li>• Norms for likely attention to/distracted from ad               <ul style="list-style-type: none"> <li>—diaries</li> <li>—people meters</li> <li>—actual monitoring</li> </ul> </li> </ul>
		Post-exposure	<ul style="list-style-type: none"> <li>• Actual monitoring</li> <li>• Self-reports</li> <li>• Eyetracking</li> </ul>
3. Ability to process brand information	Presence and accessibility of brand knowledge	Pre-exposure	<ul style="list-style-type: none"> <li>• Objective brand knowledge tests</li> </ul>
		Post-exposure	<ul style="list-style-type: none"> <li>• Objective brand knowledge tests</li> </ul>

ness could be assessed in a pre-exposure context by giving consumers product category, brand, or attribute/benefit information and asking their willingness or desire to see an ad containing that information. Machleit, Madden, and Allen (1990) developed a four-item scale measuring consumers' interest/intrigue in learning brand information and consumers' curiosity in learning more about the brand. Though they label their construct "brand interest," the measure they develop clearly fits the motivation construct. Self-report measures could be used also in a post-exposure context (as a function of cues designed to enhance motivation).

To avoid the problem with the use of self-report measures, the extent to which stimuli are capable of evoking arousal-related responses could be assessed by physiological responses such as GSR measures (Shimmell 1988). In a pre-exposure context, the level of arousal generated by questions about the product, brand, or specific attributes could be assessed. Likewise, arousal could be assessed in a post-exposure context through partial viewing of the ad. Unfortunately, the precise construct corresponding to physiological responses is not clear as physiological arousal could reflect emotion (possible outcomes of processing) as well as motivation. Furthermore, if physiological responses do reflect motivation, it is unclear whether they reflect motivation to process the *ad* or motivation to process *brand* information in the ad. One

way of avoiding the ambiguities of physiological measures and the problems of self-report is to use both measures and assess their convergent validity.

Several other measures also might be useful in a pre-exposure context. First, as motivation is defined as goal-directed arousal, one could assess the extent to which ad processing generally represents a consumer's primary goal. Interestingly, though not previously considered in the context of measuring pre-exposure motivation, research has profiled groups of consumers who continually show ad avoidance behavior (e.g., "zapping" and related behaviors) and for whom processing of commercial messages is low. Such research not only profiles people likely to exhibit ad avoidance (Heeter and Greenberg 1985), but also suggests the types of programs and time in a program in which ad avoidance is greatest (Kaplan 1985; Yorke and Kitchen 1985). Future research using commercial-audience measurements may also indicate specific types of ads that prompt ad avoidance (Mandese 1988). By means of the preceding techniques, research may yield norms for types of consumers, programs, segments, or commercials for which pre-exposure processing motivation is very low.

In a post-exposure context, an ad's success at enhancing motivation could be assessed by the effects of partial ad presentation on processing motivation. One such method makes use of VCR zipping technology. Specifically, consumers could be exposed to

a set of commercial tapes playing on fast forward and given the chance to stop the tape when they so desire. Motivation to process would be indicated by consumers' voluntarily switching from fast forward to normal speed so that the ad could be processed. Another method is to simulate the motivational value of outdoor advertising by monitoring consumers' tendencies to shift from one processing goal (driving) to the ad (Young 1984).

Unfortunately, several of the measures noted focus on consumers' motivation to switch from a secondary task to the ad. They do not unambiguously differentiate consumers' motivation to process the ad from their motivation to process brand information in the ad. For example, though a consumer who slows an ad from fast forward to normal speed may do so because of a motivation to process brand information in the ad, he or she may also do so because elements of the ad (but not the brand) are of interest. Measures clearly differentiating those two processing goals therefore should be the focus of future research.

### **Measuring Opportunity to Process Brand Information**

*Review/critique.* Because lack of opportunity reflects the extent to which distractions or limited exposure time affect consumers' attention to brand information in an ad, we review previous measures of disruptions of cognitive responses and distraction.

Measuring opportunity as the disruption of cognitive responses has several advantages. Most notable are the availability of measures and cognitive response typologies and the ease of implementation. However, the use of this approach raises several concerns. First, though the drawing of attention from the brand to a secondary task may subsequently reduce cognitive responses, those responses might be viewed more appropriately as outcomes of low opportunity. Second, and relatedly, the extent of cognitive responding is affected by motivation, ability, and opportunity, not just opportunity alone. Third, in defining opportunity in terms of the disruption of cognitive responses, one assumes that consumers are already responding to brand elements in the ad. However, at low levels of processing opportunity, distraction may be so severe that consumers are not even attending to the ad, let alone generating brand-related cognitive responses.

A second approach is to measure distraction in the viewing context. As Table 1 indicates, Webb (1979) comes closest to measuring distraction by focusing on the environmental characteristics of the medium. Though not a typical approach, this measurement approach (1) maps directly onto the opportunity construct, (2) focuses squarely on the processing mechanism that lowers opportunity rather than on the

outcomes of low opportunity, and (3) is an improvement over cognitive response measures. Unfortunately, directly measuring distraction in applied settings is very difficult and consequently no measures of distraction from attending to brand information are available. Hence, though the approach is conceptually appealing, operational barriers are significant.

*Measurement implications.* As opportunity is defined in terms of attention to brand information, its indicators in pre- and post-exposure contexts should reflect attention-based measures. Assessing opportunity in a pre-exposure context is difficult as the distraction or time pressure in a given exposure context is idiosyncratic across individuals and situations. It is possible, however, to develop general insights into the level of distraction or time pressure in various exposure contexts (e.g., dayparts). In that way norms for processing opportunity across various exposure contexts can be developed (see Bearden et al. 1981).

Diaries or actual viewing of attention to ads in various contexts could be used to develop such norms. Diaries, for example, ask respondents to note the number of people present during exposure (Abernathy 1989; Radio Advertising Bureau 1967). Other syndicated data services (e.g., Nielsen/Arbitron Diaries, People Meters) also have been used to monitor viewing habits to assess the extent of non-viewing-related activity during commercial exposure (Lu and Kiewit 1987; Soon 1988) and the likelihood of repeated exposure to programs (Ehrenberg and Wakshlag 1987). Unfortunately, diaries may measure distraction imprecisely in a viewing context as they involve retrospective reports, rely on subject motivation to complete, and are difficult to collect in some exposure contexts (e.g., radio and outdoor ads). To overcome some of the limitations, Anderson (1985) directly monitored distraction by placing video cameras in consumers' homes. His research indicates consistent effects of time of day on consumers' tendencies to focus on TV versus other aspects of the viewing environment. Though the most accurate, such measures are expensive and also prompt ethical issues related to privacy. Also, this class of measures are limited in that each assesses attention to the ad, not brand information in an ad.

In a post-exposure context, actual monitoring (during exposure) could be used to assess consumers' opportunities to attend to the ad versus other aspects of the exposure context (Thorson, Friestad, and Zhao 1987) and to assess the extent to which consumers attend to brand-relevant versus other (distracting) information in the ad. A second approach is to gather opportunity assessments through self-report measures. Self-reports of attentional focus should be used with caution, however, as consumers may not be cognizant

of their attentional focus and hence may be unable to report it (Ericsson and Simon 1980). Third, consumers' opportunities to process brand information can be assessed by such methods as eye-tracking measures that reveal whether and for how long consumers focus on brand information in the ad.

In sum, the barriers to opportunity measurement are significant, largely because of (1) the idiosyncratic nature of opportunity and (2) the need to focus on brand, rather than ad, processing. Despite these significant problems, the preceding discussion provides a reasonable starting point for its operationalization in pre- and post-exposure contexts.

### **Measuring Ability to Process Brand Information**

*Review/critique.* Ability reflects prior knowledge that enables consumers to interpret brand information in an ad (see Table 2). Though ability is rarely assessed in advertising, it has been examined in the context of decision making and choice (see Table 1) where it has been measured or manipulated in four ways. One is by consumers' extent of usage experience, operationalized as product ownership, length of ownership, extent of usage, or amount purchased. Though measures of usage experience are easy to collect, usage experience does not map neatly on ability to process brand information as individuals may have extensive usage experience yet have little understanding of brand attributes, benefits, attribute correlations, and related information that can be communicated in advertising. Brucks (1985) further notes that usage experience is inconsistent with an information-processing perspective because it is likely that different individuals learn and hence store different amounts of information in similar consumption settings. Thus, experience-based measures are less likely than other knowledge measures to be linked to processing.

A second method for assessing ability is to obtain information on consumers' subjective knowledge—specifically, how much a person thinks he or she knows about a product, brand, or consumption situation. Most measures of subjective knowledge ask consumers to rate their knowledge in relation to that of the average person. Measures of subjective knowledge are easy to collect; however, as in the case of usage experience, the mapping of this construct to “ability” is weak. Park and Lessig (1981) note that subjective knowledge may actually measure self-confidence rather than knowledge of a given domain. Moreover, current subjective knowledge measures have questionable measurement properties as they are often based on single-item indicators.

Ability also is assessed by measures of objective knowledge. Objective knowledge, defined as actual knowledge stored in memory, typically is measured

by a series of factual knowledge tests (e.g., Kanwar, Grund, and Olson 1990), though some researchers have also manipulated the extent of objective knowledge (see Park, Gardner, and Thukrhal 1985). The most comprehensive objective knowledge measure is provided by Brucks (1985), who assessed five domains of product knowledge: terminology, available attributes, criteria for evaluating attributes, perceived covariance between attributes, and factors related to usage situations.

A fourth approach uses a combination of subjective and objective items (Rao and Monroe 1988). Given problems inherent in the subjective knowledge measure, however, the value of this approach can be questioned. Furthermore, previous work on subjective and objective knowledge (e.g., Cole, Gaeth, and Singh 1986; Kanwar, Grund, and Olson 1990) suggests the constructs can and should be separated.

*Measurement implications.* Objective knowledge has the greatest conceptual correspondence to the processing ability construct, as it is actual knowledge that should influence whether encoded information can be processed. Though such measures have a degree of subjectivity (see Brucks 1985 discussion), objective scales have undergone extensive pretesting, have high reliability, and appear to be unidimensional. With minor adjustments, available measures can be modified to focus on knowledge of brand information as well as product class information. Furthermore, it is relatively easy to apply objective knowledge measures to both pre- and post-exposure contexts. In a pre-exposure context, consumers with high versus low ability could be identified by objective knowledge tests that in essence diagnose the extent to which consumers are novices or experts. In post-exposure contexts, objective knowledge tests could be administered similarly so as to determine whether and the extent to which executional elements within the ad enhanced the knowledge of low ability consumers (see Table 2).<sup>8</sup>

## **Discussion**

### **A Framework for Advertising Executional Cues**

Despite the plethora of research on (1) the relationship between executional cues and communication outcomes and (2) the impact of brand information pro-

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<sup>8</sup>Measuring ability in a post-exposure context requires care. For example, it may be difficult to administer knowledge measures in a pre-versus post-test context as preassessment knowledge measures may provide some information. An alternative would be to test knowledge of an experimental group exposed to an ad relative to a control group. If pre- versus post-test methods are used, one must allow sufficient time between pre- and post-test assessments to avoid contamination, or use relatively open-ended measures in pre- and post-test contexts so that learning in the pre-test context does not occur.

cessing on communication outcomes, few investigators have studied the mediational role of MOA on the executional cue/brand-processing relationship. Investigating this mediational role is critical, however, as (1) MOA in the typical exposure setting is often low, (2) executional cues are controllable aspects of ad design that can enhance MOA, and (3) enhancing MOA in ads can produce enduring brand attitudes and memories. Past research on ad executional cues makes our understanding of the mediational role of MOA in the executional-cue-processing/communication outcome relationship difficult because cues are often described individually, not as similar in their MOA implications. As there is no theoretical framework for describing classes of executional cues, understanding which cues affect brand processing and why becomes difficult.

The purpose of our article is to provide such linkage. Our framework organizes the literature on advertising executional cues into categories of cues similar in their effects on consumers' motivation, opportunity, or ability to process brand information from an ad. We further identify within each general category the underlying principles by which such cues have their effects. For example, some cues enhance motivation to attend to the ad by the principle of complexity, others do so by the principle of figurality, and still others do so by the principle of novelty. In addition to its value in organizing previously disparate research, our framework provides a basis for identifying which executional cues are similar in their implications for MOA and brand processing and why they are similar. Thus, it brings broader theoretical insight to bear on the study of ad executional cues. To our knowledge, no framework for organizing ad executional cues has been introduced previously. Reorganizing executional cue research according to higher level information-processing goals and strategies may also encourage the discovery of executional cues that have not yet been the subject of research.

### **Research Issues in the Study of Advertising Executional Cues**

Our framework raises several previously unaddressed questions about executional cues—specifically, whether (1) a given cue has reciprocal or tradeoff effects on MOA, (2) researchers need to refine cues further to understand their MOA effects, and (3) interactions among cues produce unique MOA responses.

*Tradeoff effects of executional cues on MOA.* One interesting set of issues relates to the question of whether executional cues that positively affect one processing antecedent (i.e., motivation, opportunity, or ability) negatively affect another. Some evidence supports the occurrence of such tradeoffs.

First, some research suggests that cues designed to enhance consumers' motivation to process the *ad* (e.g., Figure 2) may distract from their opportunity to process *brand* information. For example, though sexual/decorative models enhance motivation to attend to the ad (Bello, Pitts, and Etzel 1983) and ad recognition (Chestnut, LaChance, and Lubitz 1977), those same cues have been found to produce less brand recall (Chestnut, LaChance, and Lubitz 1977; Steadman 1969), less attention to ad copy (Reid and Soley 1983), and fewer thoughts about the brand (Severn, Belch, and Belch 1990). Humor has been found to positively affect attention to and interest in an ad (Duncan and Nelson 1985; Madden 1984; Madden and Weinberger 1982); however, it also has been found to have null or negative effects on brand recall (Gelb et al. 1986; Lammers et al. 1983; Madden 1984) and negative effects on message recall (Madden and Weinberger 1982). These findings are interesting because they suggest potential tradeoffs between motivation and opportunity in processing. Thus, cues designed to enhance motivation to process the *ad* may reduce opportunity to process the *brand*. If such tradeoffs do occur, research examining the net effect of the cues on processing is needed. The questions involved are complex, as the net effect may depend on such factors as the initial level of motivation/opportunity, the strength of the cue in attracting attention, and the availability of other cues to enhance opportunity.

Certainly the occurrence of such tradeoffs poses problems to advertisers. However, in some situations such tradeoffs may be mitigated. Specifically, the use of attention-getting executional cues need not negatively affect processing opportunity provided they are also brand *relevant*. Kamins (1990) indicates that though physically attractive celebrity endorsers can influence attention to an ad, they also can enhance brand-related responses when they are relevant for the product category/message. Similarly, Kahle and Homer (1985) found that when source attractiveness was relevant to the message, attractive sources resulted in higher recall of the brand and higher recall of message arguments. The same outcome has been observed with the use of sexual sources (Richmond and Hartman 1982; Tinkham and Reid 1988; see also Courtney and Whipple 1983).<sup>9</sup> Stewart and Furse (1986) found greater levels of comprehension and memory for ads using (vs. ads not using) a relevant setting. Finally, Krishnan (1991) notes that the inconsistent set of findings in the humor literature for the effects of humor on attention, comprehension, and recall may be partially

<sup>9</sup>DeSarbo and Harshman (1985) discuss a method for identifying salient characteristics of sources, and hence which sources are likely to be perceived as "relevant" for a given product/message.

explained by differences in the relevance of humor to the message.

In general, previous findings suggest tradeoffs between motivation and opportunity can be minimized. Future research should establish that brand relevance moderates the motivation-opportunity tradeoff. To date that hypothesis can only be inferred from available data, as researchers have not measured motivation or opportunity. Furthermore, study of this moderating effect requires greater understanding of just what constitutes a "brand-relevant" cue. DeSarbo and Hartman's (1985) scheme for identifying dimensions along which sources can be brand relevant could be generalized for this purpose in addition to the ideas noted previously.

Though any potential tradeoffs between motivation and opportunity could be reduced by the use of brand-relevant cues, other cues may cause other MOA tradeoffs. Specifically, it is interesting to note that the same cues that enhance processing opportunity or ability may reduce subsequent processing motivation. For example, cues that create new knowledge structures by demonstrating product usage or drawing analogies to more concrete examples make the ad comprehensible, but they also may reduce consumers' motivation to process on subsequent exposure occasions. Relatedly, though repetition can enhance processing opportunity, too much repetition can make the ad boring and thus reduce subsequent processing motivation (Batra and Ray 1986; Petty and Cacioppo 1979, 1980; Rethans, Swasy, and Marks 1986). At high (vs. moderate) levels of repetition, consumers have been found to generate fewer cognitive responses (Cacioppo and Petty 1979; Corlett 1984) and have lower brand recall (Corlett 1984). In general, this finding is consistent with the general literature on novice/expert differences in processing, which suggests that as expertise increases, processing motivation is reduced because consumers (1) are already confident in their knowledge, (2) do not believe intensive processing is worth the effort, and (3) can search and process information more efficiently (Bettman and Park 1980; Brucks 1985; Lutz, MacKenzie, and Belch 1983).

Several factors should be noted about this tradeoff, however. First, unlike the tradeoff described previously, these cues trade ability/opportunity to process in the present ad with motivation to process brand information in future ads. Hence they do not represent concurrent tradeoffs. Given that opportunity/ability does not trade off with motivation in a concurrent time period, this "tradeoff" does not appear to be a serious problem. Furthermore, this tradeoff does not appear to engender major information-processing consequences. As long as the ad creates opportunities and promotes consumers' ability to learn brand information in the first place, high levels of motivation are

not necessary to reactivate such knowledge because the information can be readily primed (Bruner 1957). Hence, once information has been learned, even consumers for whom processing motivation is low should be able to retrieve and reactivate stored knowledge with minimal exposure to ad cues. If it is deemed necessary for consumers to relearn the information initially provided in the ad, techniques can be developed to enhance subsequent motivation. For example, Schumann (1983, cited by Petty and Cacioppo 1985) shows that wearout due to repetition can be forestalled by using different ad executions. Note, however, that this technique is not without added production expense. Such expense should be weighed against the potential benefits in engendering greater processing motivation.

Unlike its effects on motivation, using executional cues to increase opportunity to process brand information does not adversely affect processing ability. In fact, opportunity and ability are complementary because increased exposure to brand information in ads encourages the creation of new knowledge structures and the ability to access currently held, relevant knowledge structures. However, these reciprocal effects could be hampered if ad complexity is increased along with ad length (a cue strategy that increases opportunity).

*Refinement in the characterization of executional cues.* Our framework also raises several issues about advertising executional cues themselves. First, the research reported in Figure 2 identifies relatively broad cue characteristics, such as humor, celebrities, pictures, interactive images, incongruent stimuli, and demonstrations. However, each of those executional cues can be distinguished further. For example, humor can be characterized according to its type, such as satire, surprise, parody (Speck 1990), brand relevance (Krishnan 1991), and strength (Krishnan 1991). Interactive images can be discussed in terms of their concreteness, the extent to which they communicate benefits about the product, and so on (Childers and Houston 1984). Richmond and Hartman (1982) have identified several types of sex appeals in advertising.

Research that considers finer characterizations of the cues identified in Figure 2 may resolve inconsistencies in the literature about the effects of such cues and may identify effects of executional cues that build on the framework in Figure 2. For example, humor type may affect motivation, whereas humor strength and relevance may affect opportunity. Though incongruent cues may enhance motivation, the level of their incongruity may affect processing opportunity or ability. Hence, additional research is needed to examine the MOA implications of finer characterizations of executional cues beyond those identified in Figure 2.

*Understanding the relationships among cues.* For the most part, past research on executional cues has examined the impact of single, isolated cues on communication effects. Knowledge about the MOA implications of cue combinations is underdeveloped, though notable exceptions include recent research on the relationships between visual and verbal ad cues (e.g., Childers and Houston 1984; Edell and Staelin 1983; Houston, Childers, and Heckler 1987). Our framework addresses issues of interactions by prompting researchers to consider the possible differing effects of interactions (1) among brand-relevant cues, (2) among non-brand-relevant cues, and (3) between brand-relevant and non-brand-relevant cues. Interactions among brand-relevant cues may have very different information-processing consequences than interactions among the latter two cue combinations. Because ads represent combinations of cues, research on cue interactions is critical to generalizations from executional cue research.

### **Issues Related to MOA Measurement**

Considerable work is needed in developing MOA measures. We discuss two issues related to that development. One issue stems from the lack of match between the MOA operationalizations and the definitions, which typically occurs when MOA are defined as distinct from antecedents and consequences but then are measured in terms of antecedents and consequences. That approach is problematic for sev-

eral reasons. First, it leads to ambiguity in the definition of the construct. Second, and relatedly, it dilutes attempts to organize MOA's antecedents and consequences systematically (see MacInnis and Jaworski 1989 for one organization). Third, it does not foster the assessment of linkages between antecedents, MOA, and processing outcomes.

The second set of issues pertain to the implementation of MOA measures and take the form of several recommendations for using the proposed measures. One critical issue with MOA measures is the use of measures to maximize the explanatory power of the research. Three general guidelines can be considered. First, given sufficient resources, both pre- and post-exposure measures should be used. Doing so will allow for the assessment of the effectiveness of specific cues in enhancing each MOA component. Second, because MOA measures are still being validated, using multiple measures of each may prove useful. In that way, their convergence could be assessed. Third, because MOA measures are interrelated, it would be advantageous to measure all three constructs to control statistically for "net effects" on each measure.

Elements of the conceptual framework and its associated research issues identify state-of-the-art concerns in the study of executional cues. We hope that they serve to both organize and stimulate research on executional cues, their MOA and brand-processing implications, and their impact on communication objectives.

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