

A DUAL-PROCESS MODEL OF ADVERTISING REPETITION EFFECTS

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Introduction

The question of what is the optimal number of exposures to an advertisement and the particular elements within it would seem to be a crucial one. Advertisers must determine how long and how frequently they will employ a single advertising execution, package design, logo, and other aspects of their communications. Hence, substantial research has sought to identify the optimal level of exposure under a variety of conditions. Researchers who have explored this issue have termed the outcome typically produced by overexposure to an advertisement as advertising *wearout*, meaning that at some level of repetition, people's affective response to an advertisement is either no longer positive or it shows a significant decline (Pechman and Stewart 1988, p. 286). Several experimental studies found that wearout of specific ads occurred after three to 10 exposures (e.g., Batra and Ray 1986; Belch 1982), although the precise point at which wearout occurs presumably depends on a variety of advertising-specific (e.g., advertising complexity) and/or context-related factors. Nonetheless, the typical relationship between advertising exposure and affective response is believed to display an inverted U-shaped pattern, where initial exposures generate increasing familiarity and positive affect, but subsequent exposures eventually lead to wearout and a decrease in positive affect.

To stave off such wearout, advertisers frequently develop a pool of ads that employ different executions but convey the same basic material and claims. These executions typically share a number of common features, such as the brand name, logo, tagline and advertising border or background, while other features such as the storyline, headline, ad copy and setting are varied. The logic is that by introducing ample variation in such advertising executions, the onset of wearout will be greatly

delayed. At the same time, the continued use of certain features of the advertisement (e.g., the logo, tagline or advertising background) across advertising executions establishes advertising consistency and presumably builds brand identity or equity.

Consistent with the preceding logic, several experimental studies have found that varying ad executions can effectively delay the onset of wearout (e.g., Calder and Sternthal 1980; Grass, Wallace and Winters 1969), and this appears to hold true for print advertisements (McCullough and Ostrom 1974), for children's television ads (Gorn and Goldberg 1980) and for ads embodying variations of both a cosmetic and substantive nature (Schumann, Petty and Clemons 1990). For example, work by Calder and Sternthal (1980) found that increasing from one to three the number of different executions presented in a pool of repeated ads had a significant positive impact on product evaluations. Moreover, Unnava and Burnkrant (1991) found that repetition of different versus identical print ads significantly heightened brand recall.

To date, however, research that has investigated the wearout phenomenon has consistently examined people's affective response to repeated exposures of a stimulus as a whole such that an advertisement or a product package was the repeated item. That is, repetition effects generally have been studied by varying levels of repetition of a single advertisement (Batra and Ray 1986; Belch 1982) or series of ads (Cacioppo and Petty 1979; Calder and Sternthal 1980). Accordingly, little attention has been devoted to how repetition of a particular *feature* within an advertisement might influence people's affective responses to that ad. This latter issue would seem to be important because if repetition of a particular feature of an advertisement leads to wearout of that feature, this may have a negative impact on affect toward the advertisement as a whole. If this is indeed the case, it is possible that a new

advertisement that contains a previously viewed feature may wear out more quickly than an ad that does not contain such a feature.

Furthermore, if repetition of a particular feature across several advertisements has such an impact on affective response, then the use of a pool of ads that have common features may not optimally address the problem of wearout. This is because advertisers often strive to achieve some level of feature repetition across executions because this consistency helps to establish a uniform brand image. To achieve a consistent image, advertisers typically maintain key features such as a logo, typeface, and other design elements across all elements of the marketing mix. Moreover, achieving a strong and consistent brand image has become even more important in recent years as various media are increasingly cluttered. Hence, it appears that while advertisers actively seek to minimize the possibility of wearout of particular ads, they just as actively seek to maximize exposure to particular features of those ads, ignoring the possibility of feature wearout.

The preceding discussion suggests that an important question to be addressed is whether the relationship between repetition of a particular feature in an advertisement and affective response exhibits the same inverted U-shaped pattern as has been observed between repetition of an ad as a whole and affective response. The purpose of this chapter is to examine this question of how repeated exposure to specific features in a communication may influence people's affective response to the communication as a whole, why this occurs, and what factors may moderate such outcomes. The thesis that is developed is that the impact of repeated exposure to particular ad features on people's affective response is determined by how those features are processed. Specifically, it is hypothesized that when a feature is processed in a relatively shallow, "perceptual" manner, the exposure-affect

relationship is monotonically increasing, but when a feature is processed in a “conceptual” manner where people elaborate on its semantic meaning, the relationship between frequency of feature exposure and affective response will exhibit an inverted U-shaped pattern.

The Impact of Feature Repetition

A critical assumption of this thesis is that the repetition of a particular *feature* of an advertisement can have a unique, separable impact on people’s affective response to the advertisement as a whole. That is, by considering people’s past exposure to a particular feature, we can better predict their affective response to a new ad that contains this feature. This *feature-based* model of repetition effects proposes that affective response to a stimulus is a function of people’s response to the individual features of that stimulus. This model may be compared to the more dominant *holistic* model, which suggests that affective response to a stimulus is solely a function of frequency of exposure to that stimulus as a whole. By manipulating people’s frequency of exposure to a particular feature in an advertisement, we can explore the possibility that, provided that viewers engage in limited yet sufficient encoding or elaboration of the content in an advertisement, repeated exposure to a particular feature of the advertisement that is likely to be processed perceptually (e.g., ad background) should result in monotonically increasing affective responses.

The results of two studies examining this hypothesis are consistent with the idea that repetition of particular advertising features can have a different effect on advertising effectiveness than does repetition of the advertisement as a whole (Nordhielm, 1996). In one study, participants were presented with a series of

geometric patterns and asked to assess liking on a seven point scale. These patterns were constructed using four features: shape (square or circle) color (red or blue), border (black or colored), and pattern (open or filled). Each geometric pattern assumed one of two possible values associated with each feature. The number of exposures to each feature value that each participant saw was varied randomly, as was overall order of stimulus pattern presentation. Two regression models were then tested to assess the predictive accuracy of either feature exposure (feature-based model) or pattern exposure (holistic model) on affective response. The results of this comparison indicate that the feature-based model outperformed the holistic model under a variety of conditions.

In a second study, female respondents were exposed randomly to a number of pictures of jewelry displayed against either a horizontal or a vertical background. The level of exposure to the background was manipulated, with respondents viewing a particular background either 80 or 8 times. Following these exposures, respondents viewed one additional novel piece of jewelry displayed against either the high (80) exposure or the low (8) exposure background, and asked to indicate liking and purchase intent on a 9-point scale. Results indicate that participants' liking and intent to purchase the piece of jewelry was significantly higher when it was presented against the high-exposure background (see Table 1).

Insert Table 1 About Here

The results of this study suggest that consumers' affective reactions to products that appear in ads can be influenced by how frequently they have been exposed to a specific feature of that advertisement. Female participants' liking for and intention to purchase an unfamiliar product was greater when the product was

displayed against an ad background that they had viewed previously a relatively high rather than low number of times. Of particular interest is the fact that the relationship between feature repetition and affective response remained positive as repetition of the background ad feature increased from eight to 80 exposures. This observation is ostensibly noteworthy as it contrasts with the results of many previous advertising repetition studies, which have reported a downturn in affective response after *advertisement* repetition levels of as few as five exposures (e.g., Calder and Sternthal 1980).

These experiments offer several interesting observations, but also leaves unanswered questions. First, the studies suggest that repeated exposure to a particular feature of a stimulus heightens familiarity and liking for that stimulus as a whole. This finding is in contrast to the inverted U-shaped relationship commonly observed when the repeated element is the ad as a whole. Indeed, this apparent inconsistency echoes the more general one observed in the repetition literature as a whole (e.g., Crandall, Montgomery and Rees 1973, Experiment One; Kail and Freeman 1973; Zajonc, Crandall, Kail and Swap 1974, Experiment Two). Interestingly, while most repetition studies performed using advertising stimuli report an initial increase followed by a downturn in affective response as the number of exposures increases, studies that examine repetition of non-persuasive stimuli—particularly studies involving relatively short exposure durations—generally report monotonically increasing affect with repeated exposure, which is the same outcome observed in the present study, although here the stimuli were presumably persuasive, if only because they were advertisements. These different patterns of outcomes have given rise to two alternative theories about the relationship between repeated exposure and affective response.

Theories of Repetition Effects

The dominant explanation for the commonly observed inverted U-shaped relationship between exposure and affect is offered by modified two-factor theory (Cacioppo and Petty 1979). Modified two-factor theory is derived from Berlyne's (1970) two-factor theory, which proposes that two-factors, positive habituation and tedium, mediate the relationship between repetition and affective response. Initially, repeated exposure to an unfamiliar stimulus prompts positive habituation toward that stimulus as familiarity and comfort with the stimulus increases. Yet, as the number of exposures mounts further, the second factor, tedium, exerts a negative influence on affective response as familiarity gives way to boredom. Presumably, the overall favorableness of affective response at a given level of repetition reflects the net effect of these two factors, with positive habituation exerting a positive influence on affective response, while tedium has a negative influence.

Modified two-factor theory builds on Berlyne's two-factor model by associating positive habituation and tedium with positively and negatively valenced thoughts. That is, affective response to the repeated presentation of a message is mediated by the number of positive and negative thoughts that are generated in response to that message, and the valence of these thoughts depends on the relative magnitude of the positive habituation and tedium the respondent experiences (Cacioppo and Petty 1979). Because initial repetitions generate mostly positive habituation, the number of positive thoughts is presumed to increase over these initial presentations, whereas later repetitions are presumed to generate increasing tedium and therefore more negative thoughts. Affective judgments are presumed to be the net of both positive and negative thoughts, and will therefore increase initially as the

number of positive thoughts increases with increasing exposure, then decline as the influence of negative thoughts exceeds that of positive thoughts.

While the inverted U-shaped relationship between exposure and affective response is prevalent, this relationship appears not to hold under certain conditions. Bornstein and D'Agostino (1992) report that when respondents process the same semantic content of a persuasive message repeatedly, their affective response to the content increases and then decreases after some number of repetitions, resulting in the expected inverted U-shaped relationship between repeated exposure and affect. However, when exposure durations are extremely short (i.e., less than one second) so that processing the semantic content of a message remains a constant challenge despite relatively high exposure frequency, a monotonically increasing relationship between repeated exposure and affect emerges.

This finding suggests that when respondents engage in minimal or no semantic processing of a stimulus but instead process it only in a perceptual manner, no downturn in affective response is likely to occur even at relatively high levels of repetition. In other words, affective judgments increase with repeated exposures, even though incremental learning is probably not taking place. The modified two-factor model doesn't really consider the mechanism that presumably underlies this type of increase in affective response, namely, an increase in the ease of with which the stimulus is processed perceptually, or perceptual fluency (Mandler, Nakamura and Van Zandt 1987). This is because modified two-factor theory is predicated on the assumption that conscious semantic processing mediates affective response, whereas this type of conscious processing is presumed not to occur in the case of extremely short or subliminal exposure durations (Bargh, 1992). Thus, when ability to process the stimulus is limited, a model that considers the influence of increased

perceptual fluency may provide a better account of the mechanism that is responsible for the increasingly monotonic relationship observed between exposure and affect.

A model of this type has been suggested by Bornstein and D'Agostino (1994), and it is commonly called the perceptual fluency/misattribution model (see also Jacoby, et. al. 1992; Mandler, Nakamura and Van Zandt 1987). According to this model, the perceptual fluency of a stimulus, which refers to the ease with which people perceive, encode and process it, can be heightened by factors such as prior stimulus exposure, or it can be impeded by other factors such as the degraded visibility of a stimulus. Yet, while people often experience fluctuations in their perceptual fluency of stimuli, they generally lack insight into the true cause of such experiences. Thus, if after experiencing such variations in perceptual fluency, they are asked to assess a stimulus on a dimension that is difficult to judge (e.g., they are asked whether they like the stimulus), they often misattribute the cause of the perceptual fluency to the stimulus' status on the dimension in question. Stated otherwise, people tend to misattribute the cause of perceptual fluency to a potential cause that happens to be salient at that moment and can be perceived to be a plausible source of the perceptual fluency.

This perceptual fluency/misattribution phenomenon has been demonstrated by Mandler, Nakamura and Van Zandt (1987) who found that people misattributed enhanced perceptual fluency, which actually was caused by prior exposure to a stimulus, to their heightened liking of the stimulus, the lightness of the stimulus, or the darkness of the stimulus, depending on which of these potential causes was queried. Thus, it appears that people's misattribution of perceptual fluency is not limited to the affective dimension of a stimulus. Rather, it extends to non-affective descriptive dimensions as well.

Bornstein and D'Agostino (1994) examined the implications of the perceptual fluency/misattribution model when applied to a repeated stimulus exposure situation where participants were given an opportunity to adjust for possible misattribution. The authors hypothesized that when participants were told that they were evaluating stimuli they had seen before, they would correct for their tendency to misattribute heightened perceptual fluency to stimulus liking.

Participants in the Bornstein and D'Agostino study first took part in a familiarization task where they received brief (100 ms) exposures to 15 different line drawings (Welsh figures) repeated randomly 10 times each. Then they were presented with 18 target stimuli to evaluate, three of which had been presented in the familiarization stage. However, prior to indicating their liking of the target stimuli, participants were either informed that none of the drawings they were about to see had been presented before (new condition) or that all of them had been presented previously in the familiarization phase (old condition).

As expected, liking for familiar drawings (i.e., drawings that truly had been viewed in the familiarization phase) was greater than liking for unfamiliar drawings in the "new" condition. Yet, this apparent misattribution effect disappeared in the "old" condition. Here, liking for familiar and unfamiliar drawings was the same across "old" and "new" conditions. Hence, the authors concluded that when participants are given an opportunity to adjust for misattribution by receiving explicit information about previous stimulus exposure, such "mere exposure effects" disappear. Similar results were also reported in the same study for subliminal stimulus presentations.

The Dual Process Model

The preceding discussion suggests that while modified two-factor theory accounts for a considerable portion of the mere and repeated exposure effect findings, perceptual fluency/misattribution theory may provide a more appealing model when deeper processing of stimuli is impeded. Bargh (1992) has proposed that this perceptual fluency/misattribution model applies when two conditions prevail: 1) people experience a variation in their perceptual fluency (e.g., possibly due to repeated exposure of a stimulus), and 2) they are unable to accurately identify the source of that fluency. In the aforementioned study by Bornstein and D'Agostino (1994), this inability to identify the source of perceptual fluency was caused by lack of opportunity, that is, the exposure durations were so short that respondents presumably could not determine whether or not they had been exposed to a particular stimulus previously. In essence, they were only able to engage in perceptual processing of the stimuli (i.e., shallow processing of the surface features of the stimuli), as opposed to conceptual processing of the semantic content of those stimuli.

This distinction between perceptual and conceptual processing has been made previously in the cognitive literature.¹ Jacoby and Dallas (1981) define perceptual processing as that which involves encoding of the surface features of the stimulus, whereas conceptual processing involves evaluation of the semantic content of the stimulus (see also Whittlesea 1993). Thus, compared to conceptual processing, perceptual processing appears to involve much less elaboration.

As discussed earlier, two-factor theory and perceptual fluency/misattribution theory represent the dominant explanations for why and how repeated exposure to an

object or feature influences people's affective responses. At the same time, neither theory alone seems to provide the best explanation for the findings of all studies that have examined the effects of repeated stimulus/feature exposure on affective judgments. Given the inherent viability of both theories and the observation that each appears to account for some but not all findings, an important question that emerges is what determines when the mechanisms proposed by each of these theories operate.

Examination of the extant literature provides some support for the notion that the type of processing people employ during stimulus or feature exposure might determine when repeated exposure produces effects that are more consistent with those suggested by either modified two-factor or perceptual fluency/misattribution theory. Specifically, the mechanism described by perceptual fluency/misattribution theory would seem to operate when stimuli or features are processed perceptually and result in a monotonically increasing repeated exposure-affective response function. However, the modified two-factor theory may operate when stimuli/features are processed conceptually and thereby receive more elaborate meaning-based analysis. Thus, in the latter case, the repeated exposure-affective response relationship would exhibit an inverted U-shaped pattern.

Some research seems to support this view that type of processing can moderate repetition effects. For example Hawkins and Hoch (1992) found that repeated exposure to trivia statements heightened the perceived truth of these statements – a phenomenon called the “truth effect,” and that this relationship between repetition and assessed truth was moderated by the type of processing participants employed during statement exposure. Specifically, the truth effect was strongest for participants who processed the information in a perceptual, non-elaborative manner (e.g., rote rehearsal) as opposed to a more elaborative conceptual

manner (e.g., evaluating meaning and veracity) or extremely minimal manner (e.g., completing an orthographic task). The stronger truth effect in the perceptual versus conceptual processing condition may have resulted from the statements' heightened perceptual fluency with increased exposures, which was then misattributed as being due to the enhanced truth of the repeated statement. In contrast, a different process is implicated in the conceptual processing condition. In this condition, conceptual processing likely produced increased elaboration of the stimulus, and thus an increase in the number of positive thoughts generated. As predicted by modified two-factor theory, however, at higher exposure levels continued elaboration on the same stimulus may result in tedium and the generation of fewer positive thoughts and more idiosyncratic thoughts. This in turn may have contributed to the observed weakening of the truth effect at higher exposure levels when the stimuli were processed conceptually.

The thesis proposed here is that type of processing determines whether repetition produces a monotonically increasing or an inverted U-shaped pattern of affective response. This is based on the hypothesis that the type of processing people engage in determines whether perceptual fluency/misattribution theory or modified two-factor theory best represent the mechanism which underlies the relationship between exposure and affect. Figure 1 delineates these relationships graphically. When stimuli and/or features are encoded perceptually, repeated exposure to such items is likely to enhance perceptual fluency of these stimuli/features. In turn, the mechanism described by the perceptual fluency model should apply. That is, individuals are likely to misattribute the enhanced perceptual fluency of the items to any aspect (e.g., liking) of the items that is salient and appears to be a plausible cause of the enhanced fluency. On the other hand, when stimuli are processed

conceptually, more elaborative processing is implicated, and the mechanism outlined by the modified two-factor model should apply. As such, initial exposures should increase familiarity with and comprehension of the stimulus, prompting predominately positive thoughts. But as exposure increases further and message processing reaches a satiation point, the number of positive thoughts that are generated should decline as relatively negative idiosyncratic thoughts grow, resulting in net negative affect.

Insert Figure 1 About Here

Support for this general hypothesis that the type of processing respondents engage in mediates the relationship between repeated exposure and affective response is provided in three studies that manipulates type of processing, predominantly perceptual or conceptual, that respondents engaged in when presented with print advertisements at various levels of repetition (Nordhielm, 1996; Nordhielm, 2000). In these studies, participants engaged in a training session in which they viewed a series of advertisements at varying levels of repetition. In the conceptual processing condition, participants were encouraged to elaborate on the advertisement by clicking on any elements of the ad that they felt made the brand unique or preferable. In the perceptual processing condition, participants were asked to click on a small red x anytime it appeared on the screen. Individual advertisements were exposed either 0, 3, 10, or 25 times. In a subsequent test session, participants evaluated these advertisements on several nine-point scales. Converging evidence from these studies supports the thesis that when participants processing is conceptual, the, exposure-affect relationship follows an inverted U-shaped pattern, whereas when processing in perceptual, the pattern of reponse is generally increasing, with no downturn observed.

These findings are consistent with the view that during perceptual processing, repeated exposure to a feature of a stimulus is likely to elevate how fluently respondents perceive or process that stimulus. In turn, processors may be prone to misattribute this enhanced fluency to any plausible cause that happens to be reasonably salient or accessible, which in this case was their affect toward the stimulus. To further explore the possibility that misattribution of fluency prompted by repetition might occur when perceptual processing takes place and that such misattribution could affect any salient and plausible product dimension, respondents were asked to render judgments about both affective and non-affective aspects of the product.

These judgments were collected as part of a forced-choice task where participants were presented with two products and asked which of the two possessed a descriptive characteristic (e.g. light or dark, broad or narrow distribution). Consistent with the view that misattribution of perceptual fluency is likely to mediate people's judgments when they engage in perceptual processing, ad respondents who had engaged in perceptual processing of the stimuli at encoding and were exposed to a focal product an increasing number of times, more frequently judged that the previously viewed focal product possessed a descriptive characteristic about which they were queried, regardless of the specific characteristic. For example, participants were more likely to judge a previously viewed product as either light *or* dark. This effect was not observed for respondents in the conceptual processing condition, where descriptive non-affective judgments were insensitive to how frequently they had previously viewed the products, presumably because their judgments were not based on an attribution of any enhanced perceptual fluency of the stimuli.

Further support for the dual-process model was obtained in a thought-listing task in one study (Nordhielm 2000). In this study, when respondents processed the ad stimuli conceptually, the pattern of participants' affective judgments of the focal product and the ad differed. Specifically, when respondents' frequency of exposure to the focal product content varied, the favorableness of their affective judgments of the product and the ad exhibited an inverted U-shaped pattern as frequency of exposure to the focal product mounted. This observation is compatible with the premise that when individuals are prompted to process stimuli conceptually, their understanding and appreciation tends to grow as exposure frequency and thus opportunity to process this stimulus elevates to some moderate level. Thereafter, however, further exposure to and conceptual processing of the stimulus tends to stimulate considerable idiosyncratic, tedium-related, or other less favorable thoughts that generally prompt a downturn in affective judgments.

In summary, despite the significant amount of research conducted on mere exposure and repetition effects to date, no published work has provided a theoretical model that accounts for all of the results observed in this area. The two leading models that dominate this literature each provide only a partial explanation for the observed results. Specifically, while modified two-factor theory predicts a downturn in affective response after some number of exposures, it does not predict that when stimuli are viewed at an extremely short or subliminal duration, the positive effect of repeated viewing is even stronger than when such stimuli are exposed at longer durations. Further, modified two-factor theory does not adequately explain why no downturn in affective response occurs for these extremely short or subliminal exposures. The PF/M model accounts for these characteristics of repeatedly

presented stimuli for short exposure durations, but does not predict a downturn in affective response for frequently exposed stimuli of longer durations.

The theorizing presented in this chapter has been offered to provide a more complete explanation of findings in the repetition effects literatures. It is not intended to discount either modified two-factor theory nor the perceptual fluency/misattribution model. Instead, this chapter integrates these two models in a way that provides a reasonable explanation for all results observed to date. Further, the research presented here begins to test this integrative model, and empirical results demonstrate its support.

Managerial Implications

Beyond the theoretical contributions of this work, this research also has important managerial implications. The findings suggest that the simply manipulating the exposure frequency of seemingly irrelevant elements of an ad that are likely to be processed perceptually can have an impact not only on product liking, but also on product purchase intent. These observations suggest two things. One is that it may be advisable for practitioners to keep such elements constant across ad executions. A second is that it also may be advisable to consider audiences' frequency of exposure to particular ad elements as well as the type of processing these elements are likely to receive when making assessments about possible advertising wearout effects.

Relevant to this latter issue, popular marketing wisdom encourages advertisers to employ the same logos, slogans, typefaces, and stylistic variables consistently across advertisements in the interest of fostering and maintaining brand equity. Yet, on the surface, such advice discounts any concern over wearout effects

that have been well documented empirically. That is, it would seem that a consumer could reach a satiation point processing a particular logo, slogan, typeface or the like such that continued use or exposure to this advertising feature could have a deleterious effect on brand equity. The present research, however, supports such marketing practice. Specifically, it reveals that because features like these convey little meaningful semantic information and thus are likely to be processed perceptually, their continued use can in fact promote both long-term brand equity and positive brand feelings without much risk of wearout.

This research also effectively condones many observed management practices. For example, advertisers demonstrate their concern over potential advertising wearout effects by constantly introducing new commercials that relay different content. This appears to be prudent because presumably these commercials are processed conceptually, making them subject to tedium and wearout. In contrast, advertisers exhibit no reservations about repeating particular *features* of commercials, such as logos, typeface, or even commercial characters. The present research suggests that this too is reasonable because these features are likely to be processed perceptually and are therefore much less likely to be affected by tedium and wearout.

At the same time, several caveats are in order. Application of the implications of the feature-based model suggests that marketers should take into account how frequently consumers have been exposed to their ads and those of their competitors as well as how frequently they have been exposed to key features of those ads, regardless of their source. In other words, it does not appear sufficient to consider only past exposure to a particular commercial in its entirety when attempting to estimate to possibility of wearout. Instead, past exposure to particular features of that commercial, both conceptual and perceptual, should be taken into account. This

might strike managers as being a virtually impossible task. However, as marketers' ability to collect individual-level data grows this task may become much easier simply because data about an individual's past exposure to a feature should become easier to obtain and assess. And, to the extent that marketers can obtain and record information about how often a particular individual has been exposed to various features of communications, they will be better able to assess past exposure to particular features of those communications.

For example, capturing information about what web sites an individual has visited will enable marketers to assess how frequently they have been exposed to a particular perceptual feature such as a logo, typeface, or production technique like the use of spot color.¹ Perhaps more importantly, marketers also will be able to estimate past exposure to particular *conceptual* features of communications, such as particular celebrity endorsers or certain types of product positionings that may be employed across competitors and/or product categories.² Because preliminary results of the present research suggest that conceptual features are subject to wearout, obtaining an assessment of past exposure to such features would seem to be useful.

Upon considering the managerial implications of this research, a number of important questions emerge that remain to be answered. One key issue is how time influences the relationship between feature repetition and affective response.

Research that has investigated perceptual and conceptual priming suggests that the

¹ It is acknowledged that consumers exposure to such features is not restricted to the internet, as most consumers continue to make use of mass media vehicles as well.

² It is possible, for example to use a "safety" positioning for toothpaste (protect your teeth from tooth decay), automobiles (protect your family in case of an accident) and dishwashing detergent (protect the environment from harmful pollutants). Repeated exposure to these three campaigns might result in wearout on the "conceptual feature" of safety.

effects of prior exposure on affective response can actually last as long as one year when the stimuli are processed perceptually, whereas when these stimuli are processed conceptually, these positive effects can diminish within as little as a few minutes (Roediger and McDermott 1993). Hence, repeated exposure to a feature that lends itself to conceptual processing may result in wearout and hence negative affect, but this negative response may dissipate within a relatively short period of time. In contrast, the influence of prior exposure to features that have been processed perceptually may persist for much longer.

Another important issue is the question of what factors induce individuals to process particular features either perceptually or conceptually. In both Experiment One and Two, it appeared that the amount of semantic content possessed by a particular feature tended to determine which type of processing was employed. Hence, it may be reasonable to assess features based on their semantic content and classify them as either perceptual or conceptual. At the same time, particular conditions under which an individual processes a specific feature are also likely to influence the type of processing he or she employs. In particular, if an individual's motivation or ability to process a particular feature is limited, he or she may process it consistently in a perceptual manner, regardless of that features' semantic content. On the other hand, a feature with seemingly little semantic content, such as the Nike "swoosh," may become invested with semantic content over time by virtue of the fact that it has been repeatedly associated with certain images and messages. Therefore, from a managerial perspective, knowledge about the amount of semantic content a specific feature possesses, as well as the particular conditions under which this feature has been processed, will presumably enhance marketers' ability to anticipate the onset of wearout of repeatedly viewed stimuli.

Finally, while these results as well as those of other studies involving extremely short exposure durations (e.g., Bornstein and D'Agostino 1992) suggest that when features are processed perceptually, no downturn in affective response occurs even at high exposure levels, this question merits further consideration. Whether or not a downturn in affective response will eventually occur under perceptual processing conditions when the exposure level is extremely high remains an empirical question.

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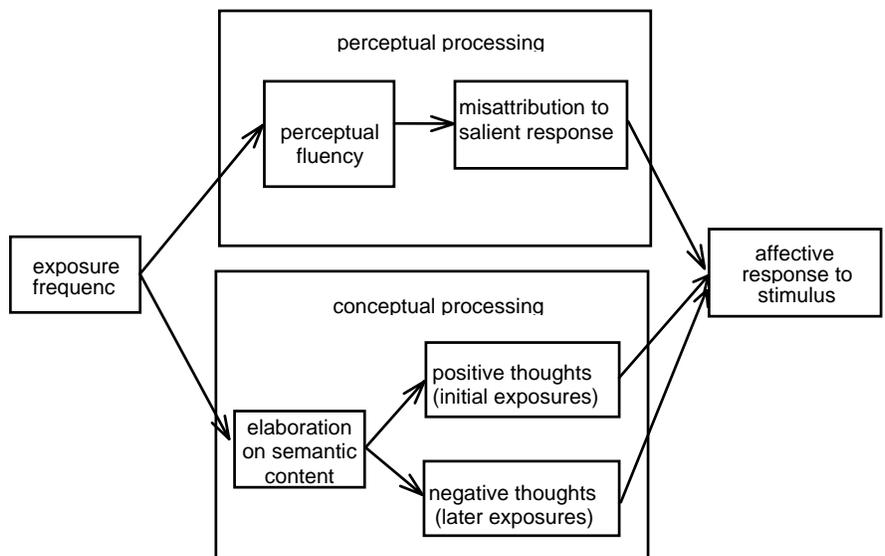
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TABLE 1: THE EFFECT OF FEATURE EXPOSURE FREQUENCY ON AFFECTIVE RESPONSE AND PURCHASE INTENTIONS FOR THE TARGET AD PRODUCT

Frequency of exposure to target ad background	Dependent measure		
	Affective response	Purchase Intention	Interestingness
High	6.40 ^a	4.92 ^a	6.24
Low	5.30 ^b	3.20 ^b	6.20

Means with different letters are different from one another at $p < .05$

FIGURE 1: DUAL PROCESS FRAMEWORK



Nordhielm/Dual Process Model

Notes

¹ Mandler (1987) and others (Bornstein and D'Agostino, 1994; Jacoby and Dallas, 1981) have proposed that repeated exposure to nonsemantic stimuli results in increased *perceptual fluency*.

Perceptual fluency is defined as the ease with which nonsemantic stimuli are processed (Jacoby et. al, 1992). In a typical test of perceptual fluency, participants are exposed to a series of words in a training session, and then presented with stems of both “new” (i.e. not previously exposed) and “old” words in a test session. For example, the stem CA_BA__ E might be presented, which should be completed as “CABBAGE.” This stem completion task is generally accomplished more quickly when participants have seen this word in the training session. Presumably, this task measures the extent to which participants are fluent with the surface features of the stimulus (the letters) as opposed to the semantic content of the stimulus.

In contrast a *conceptual fluency* task is intended to measure fluency with the semantic content of the target stimulus. In this type of task, a target word, such as “ship,” would be presented during a training session. At test, a series of semantically related pairs of words would be presented (e.g. chin-face, bird-nest), and participants would be asked to pronounce these words as quickly as possible. Among these pairs would be a target word that is semantically related to the word presented in the training session (in this case, boat-dock). Response latencies are then taken as a measure of conceptual fluency, and these times are generally shorter for word pairs that contain a target word.