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Source: Management Science, Vol. 48, No. 6 (Jun., 2002), pp. 765-781

Published by: INFORMS

Stable URL: http://www.jstor.org/stable/822628

Accessed: 26/09/2011 04:02

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Breaking Through the Clutter: Benefits of Advertisement Originality and Familiarity for Brand Attention and Memory

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Rising levels of advertising competition have made it increasingly difficult to attract and hold consumers' attention and to establish strong memory traces for the advertised brand. A common communication strategy to break through this competitive clutter is to increase ad originality. However, ad originality may have detrimental effects when consumers pay more attention to the ad at the expense of the advertised brand. Moreover, the positive effects of originality may quickly wane when the ad becomes familiar. Surprisingly, no research to date has examined such brand attention and memory effects of ad originality and familiarity. The current study aims to fill this void. We use a stochastic model of the influence that ad originality and familiarity have on consumers' eye fixations to the key elements of advertisements—brand, text, and pictorial—and how the information extracted during eye fixations promotes memory for the advertised brand. The model explicitly accounts for heterogeneity due to consumers and advertisements. Infrared eye tracking was applied to collect eye fixation data from 119 consumers who paged through two general-audience magazines containing 58 full-page advertisements. Memory for the advertised brands was assessed with an indirect memory task. The model was estimated using Markov Chain Monte Carlo (MCMC) methods. In support of our hypotheses, original advertisements drew more attention to the advertised brand. More importantly however, advertisements that were both original and familiar attracted the largest amount of attention to the advertised brand, which improved subsequent brand memory. In addition, original and familiar ads were found to promote brand memory directly. Implications of these findings for communication and media planning strategy are discussed.
(Bayesian Models; Attention and Brand Memory; Advertising Effectiveness; Originality)

1. Introduction
It has become increasingly difficult for advertisements to break through the clutter of competing ads to gain consumers' attention and to build memory for the advertised brands. Commercial time on television and radio has soured. In many consumer magazines half or more of the pages carry advertisements. As an extreme case in point, the Fall 2000 issue of
Vogue contained 512 pages of ads, 77% of the publication, which is a 34% increase since 1993. At the same time, media costs are rising, which enhances media inflation even further. The cost of a one-page four-color ad placement in that Fall 2000 Vogue issue was almost $70,000, which is a 21% increase since 1997 (http://www.phaseone.net).

This challenges advertisers and ad agencies to maximize attention and memory for their brands under highly competitive conditions (Batra et al. 1996, Gorn et al. 1997, Rossiter and Percy 1997). To achieve their goal, advertisers and ad agencies need to understand which factors influence consumers’ attention to advertising and how attention to advertising drives memory for the advertised brands. One strategy of breaking through the clutter is to outspend the competition (Rossiter and Percy 1997) by running more and larger ads than other brands. For example, one firm ran a 12-page ad in the previously cited Vogue issue. This manuscript focuses on another strategy: outsmarting the competition by running more original ads.

Copywriters and art directors consider original advertising to be the key to break through the competitive clutter. They believe that originality of ads is at the heart of advertising effectiveness because it captures consumers’ attention and makes ads more memorable (Caples 1997, Kover 1995, Moriarty 1986, Reid et al. 1998). Not remarkably, in view of his vested interest, prize-winning creative director John Bartle is confident that “creativity is what makes ads effective” (http://www.fm.co.za), and that therefore the focus in advertising should be on originality. Yet a focus on ad originality in advertising strategy presents dangers as well. It is argued that original ads may attract attention to the pictorial and copy elements but distract attention away from the advertised brand, which would reduce subsequent brand memory. Then, originality would be counterproductive and lower ad effectiveness. Moreover, attention to original ads may dissipate quickly once they become familiar and the novelty wears off. In that case, original ads hold a double danger. They may distract attention from the brand when unfamiliar, and may attract lower overall levels of attention when familiar; both of which would reduce memory for the advertised brand (for discussions see, e.g., Haberland and Dacin 1992, Shimp 1997).

Surprisingly, these ideas about the role of ad originality in attention and memory for the brand have largely remained untested (Blasko and Mokwa 1986, Zinkhan 1993). There is a large body of marketing research on the influence of specific execution tactics, such as humor, eroticism, and famous spokespeople, on consumers’ attitudes towards ads and brands. Also, some research has examined the influence of ad originality on ad and brand attitudes under forced exposure (Ang and Low 2000). However, to our knowledge no research has examined the influence of ad originality on attention to advertising and memory for brands. Generally, the volume of attention research in marketing and management has been limited (Janiszewski and Bickart 1994), despite the importance to ad effectiveness of gaining and retaining attention. Moreover, the available studies have relied heavily on memory measures of attention (Finn 1988) or on aggregate attention measures such as the total time spent on an advertisement (Pechmann and Stewart 1989, 1990), and they have not used formal models of the influence of advertising characteristics on attention and memory. This state of affairs provides little support to advertisers and ad agencies planning and testing advertising campaigns with an emphasis on originality.

Only recently, studies on the perceptual processing of ads have begun to appear (Janiszewski 1998, Olney et al. 1991, Rosbergen et al. 1997). Our study builds on this emerging stream of research and aims to make the following contributions. First, it is the first to examine the influence of ad originality and familiarity on attention and memory for the advertised brands. Second, rather than analyzing the influence of a specific creative tactic with a single ad, we investigate a sample of 58 magazine advertisements that vary in perceived originality. Instead of focusing on the rare cases of award-winning ad originality, we examine differences in “garden variety” originality (Amabile 1983) as they occur normally in magazines. This allows us to draw generalizable conclusions across specific tactics in regular advertisements. Third, we employ infrared eye-tracking methodology to collect disaggregate information about attention to the brand, the text, and the pictorial elements of 58 advertisements that appeared in two magazines, for a
sample of 119 regular consumers. The level of detail about ad attention that the specific methodology provides cannot be obtained otherwise, and consumer and ad samples of this size have rarely been used. Fourth, the effects of ad originality and familiarity are incorporated in a recently proposed formal model of attention and memory for advertising (Wedel and Pieters 2000). The model is explicitly derived from visual attention and memory theory. It is extended by specifying the influence of ad originality and familiarity on consumers’ eye fixations to advertisements and their direct and indirect effects on the subsequent retrieval of the brands from memory. We adopt a hierarchical Bayesian approach to estimate the model, which provides exact inferences for finite samples and achieves optimal pooling of the attention and memory data of consumers across the advertisements.

The next section discusses the influence of ad originality and familiarity on attention and memory for the advertised brand, and proposes specific hypotheses. Next, our formal model of attention and memory processes and the tests of hypotheses are described. Then the methodology and results of the empirical study are offered. In support of the hypotheses, we observe a double advantage of ad originality in building memory for brands by raising attention to the brand and pictorial in advertisements and by lowering the threshold for memory retrieval when original ads become familiar. Implications of the findings for advertising management and research conclude the manuscript.

2. Originality and Familiarity Effects

Originality in advertising involves, as Zinkhan (1993, p. 1) formulated, “thinking up (dreaming up) new ways to present selling propositions.” Advertisers apply various techniques of “defamiliarization” to stimulate the audience to think “about a familiar issue from an unexpected perspective” (Scott 1994, p. 254), such as metaphors, wordplay, or humor. These techniques use the perceptual features of advertisements like the number, size, colors, positions, and types of words and pictorials (Gorn et al. 1997, Moriarty 1986).

Some researchers have tried to explain the experience of originality from the cognitive appraisal of incongruities between the target advertisement and consumers’ mental representations of typical advertising executions (Heckler and Childers 1992). Others have focused more broadly on “collative properties” which should promote the experience of originality, such as ambiguities in the meanings communicated by a stimulus (Berlyne 1971, 1974), or on novelty (Ang and Low 2000). These conceptualizations are not very satisfying, because they are neither unique nor sufficient for the experience of originality. Humor, for example, is also defined in terms of incongruity, and not all incongruities are considered original (Blasko and Mokwa 1986, Godkewitsch 1974).

Following Amabile’s (1983) consensual definition of creative products such as advertising, we argue that the experience of originality is shared, graded, and irreducible to a specific aspect of advertisements. That is, consumers know advertising originality when they see it and tend to agree on this (Plucker and Renzulli 1999). Original ads deviate in some way from the norm for the product, brand, medium, or advertising at large, and are experienced to be unique, different from other ads, and original, which stimulates surprise. Instead of being an all-or-nothing phenomenon, advertisements vary in the degree to which they are original. Finally, no specific creative technique or perceptual feature can be uniquely associated with advertising originality.

The fact that the experience of originality is generally shared within cultures (Albert and Runco 1990) allows advertisers to create original ads that are experienced as such by a mass audience. It has led to measurement techniques that are based on consensus between raters (Amabile 1983, Haberland and Dacin 1992). This study will use the shared consumer experience of ad originality as a starting point, and examines its effects on attention and memory.

2.1. Ad Originality Effects on Attention and Memory

Print advertisements typically contain three main elements—the brand, text, and pictorial. The brand element in advertisements relates to all pictorial and textual references to the brand, including the name, logo, symbols, and packshot. The pictorial element includes all illustrations, graphics, and pictures in the ad, but excludes brand symbols. The textual element
HYPOTHESIS 1. Ad originality promotes attention to the advertised brand.

Attention to the advertisement allows for more elaboration and strengthening of existing brand associations in memory. Therefore, if Hypothesis 1 is supported, ad originality should promote brand memory indirectly through increased levels of attention. There is reason to believe that ad originality also promotes brand memory directly. For the same amount of attention, original ads promote more new associations to the advertised brand in memory (Mandler 1979, 1982). These new associations distinguish brands in original ads from other brands in memory, and they provide multiple retrieval cues that lower the memory threshold of these brands (Baddeley 1990, Heckler and Childers 1992). This should increase the likelihood of retrieving the brands from memory, independent of the amount of attention devoted to the advertisements. Therefore, we conjecture:

HYPOTHESIS 2. Ad originality promotes brand memory, independent of attention.

A firm case for the benefits of original advertising is made when both Hypotheses 1 and 2 are supported. Then, more attention is paid to the brands in original ads, which indirectly promotes brand memory, while simultaneously the brands in original ads become more memorable directly, independent of the amount of attention.

2.2. Originality Effects of Familiar Advertisements

Like originality, familiarity is a subjective experience. Familiar advertisements are experienced as having been seen or heard before, due either to actual prior experience, or to context effects, which create a feeling of familiarity. Familiar ads require and attract less attention than unfamiliar ads because they are easier to process and there is less to learn from them. For instance, familiar texts are fixated on less and read faster (Hyönnä and Niemi 1990, Kolers 1976) because a quick glance confirms their familiarity and induces people to page further (Rayner 1998). Pieters et al. (1999) found that across three exposures to print ads, the overall amount of attention dropped more than 50%.

Will the attention decrement that is due to ad familiarity be the same for original and ordinary advertisements? We conjecture that the subtleties of original advertising are not immediately understood and will continue to attract attention when ads become familiar. In support of this, Pechmann and Stewart (1990) showed that novel and complex ad executions required more exposures for the consumer to understand what is communicated. In addition, we believe that the originality of advertisements does not diminish when they become familiar. The large volume of ordinary advertisements will make original advertisements stand out, even when the latter have become familiar. In line with this, Friedman (1979) found that incongruent elements in familiar visual...
scenes continued to attract more attention than congruent elements. Therefore we propose the following hypothesis:

HYPOTHESIS 3. Ad originality moderates the decrement in attention due to ad familiarity.

Memory research finds that the elements of a familiar stimulus are stored and accessed in memory as a single, integrated unit, which improves memory performance (strong within-unit organization: Mandler 1979, 1982). If this finding generalizes to advertisements, it should promote better memory for the brands in familiar, as compared to unfamiliar, ads. Will this memory increment due to ad familiarity be the same for original and ordinary advertisements? Research indicates that original stimuli, in general, promote more associations with other information in memory than ordinary stimuli do (strong between-unit organization: Mandler 1979, 1982). These distinct associations improve memory performance because they act as multiple pathways through which the stimuli can be accessed and retrieved. If this finding generalizes to advertisements, it should promote better memory for the brands in original, as compared to ordinary, advertisements. Combined, ad familiarity and originality should produce the best memory performance, as the former facilitates immediate retrieval and the latter stimulates multiple retrieval paths for the brand from memory. Therefore, we hypothesize:

HYPOTHESIS 4. Ad originality moderates the increment in brand memory due to ad familiarity, independent of attention.

A strong case for the benefits of original advertising is made when Hypotheses 3 and 4 are simultaneously supported. Then, ad familiarity has a less negative effect on attention for original than for ordinary ads, and it has a more positive effect on memory for original than for ordinary ads.

3. Modeling Advertisement Originality and Familiarity Effects on Attention and Memory

We extend the model proposed by Wedel and Pieters (2000) to describe how information from the ads is extracted during eye fixations, stored across multiple eye fixations to the ads, and retrieved from memory, and to explain how these processes are affected by ad originality and familiarity. The model is calibrated to infrared eye-tracking data of 119 consumers who are exposed to 58 print advertisements in two magazines, and their subsequent recognition of the advertised brands in a perceptual memory task. During exposure to the ads, the fixation frequency of each consumer to each of the three ad elements is recorded. During the memory task the accuracy of brand memory is assessed.

The current model, which is graphically presented in Figure 1, comprises three components: attention and information extraction, information accumulation and memory storage, and memory retrieval.

The first model component specifies attention and information extraction, and how ad originality and familiarity influence this. When exposed to print advertisements, consumers visually explore and extract information from them. Eye movements are sequences of fixations, discrete periods of relative immobility of the eye, and saccades, which are quick jumps between fixation locations. Consumers extract information from advertisements and their elements during eye fixations, which reflect the moments of visual attention (Sperling and Weichselgartner 1995). While the amount of information extracted per fixation on an ad element is approximately constant, it varies across advertisements and consumers (cf. McConkie et al. 1994). Therefore, the information $\phi$ extracted by consumer $i$ at the $k$th fixation from the $j$ elements of the $l$th ad, is represented using a "dual heterogeneity" formulation:

$$\phi_{ijkl} = \mu_j + \zeta_{jl} + \nu_{ij}. \tag{1}$$

Here, $i = 1, \ldots, I$ denotes the 119 consumers in the study, $j = 1, \ldots, J$ denotes the three elements of advertisements, brand, text and pictorial; $l = 1, \ldots, L$ denotes the 58 print advertisements, and $k = 1, \ldots, n_{ijl}$ denotes fixations. In Equation (1), $\mu_j$ is the expected contribution of information extracted from ad element $j$. In addition, $\zeta_{jl} \sim N^\mu_0(0, \sigma^\mu_2)$ and $\nu_{ij} \sim N^\nu_0(0, \sigma^\nu_2)$ are random contributions to the information extracted from element $j$, for advertisement $l$. 

and for consumer $i$, respectively. They follow normal distributions truncated at zero to accommodate the nonnegativity of extracted information. The parameters $\sigma^2_d$ and $\sigma^2_j$ represent the variability in information extracted from the ad elements across ads and across consumers.

This formulation extends previous attention research by allowing the amount of extracted information per fixation to vary systematically across the brand, textual, and pictorial elements, and randomly across advertisements and consumers (e.g., Chun and Wolfe 2001). It extends the model proposed by Wedel and Pieters (2000) by including an a priori nonnegativity constraint on the individual-level parameters. In the former formulation, the extracted information was not constrained to be positive, which may lead to logically inconsistent estimates.

If the information from an ad element cannot be extracted during a single fixation, consumers refixate (Henderson 1992). The frequency of fixations thus is a measure of the intensity of visual attention and the information in ads and ad elements (Loftus 1972, 1983, Rayner 1998). We describe the frequency of fixations, $n_{ijk}$, for consumer $i$ at element $j$ of ad $l$ to follow a Poisson distribution. To account for heterogeneity, we let the parameter of the Poisson distribution follow a gamma distribution, which leads to the negative binomial distribution (NBD) for the fixation frequency (Pieters et al. 1999). We parameterize the log-mean fixation frequency of each ad element as a function of ad originality, ad familiarity, and its interaction. We control for potential differences in the size of the three ad elements between ads (Size) and for differences between the contexts provided by the two magazines (Magazine). This leads to:

$$
\ln(E[n_{ijk}]) = \rho_{d1} + \rho_{i1}\text{Size} + \rho_{j1}\text{Originality} + \rho_{j2}\text{Familiarity} + \rho_{j3}\text{Originality} \times \text{Familiarity} + \rho_{j4}\text{Magazine}.
$$

(2)

The second model component specifies information accumulation and memory storage. The information of each ad element $j$ that is extracted during a fixation is added to the information that is already present in long-term memory. There, it forms new, and strengthens existing, memory traces and forms associations with other memory traces (Hintzman 1988; Raaijmakers and Shifrin 1992). Then, after having
attended to an ad, the total amount of information that a consumer \( i \) has stored on ad \( l \) is:

\[
\phi_{il} = \sum_{j=1}^{J} \sum_{k=1}^{K} \phi_{ijkl} = \sum_{j=1}^{J} (n_{ijl} \mu_j + n_{ijl} \gamma_j + n_{ijl} v_j). \tag{3}
\]

The third model component specifies memory retrieval, and how ad originality and familiarity influence this. An advertised brand is retrieved from memory if the total amount of the stored information about the brand exceeds a threshold, \( \theta_{il} \).

\[
\theta_{il} = \eta + \vartheta_i + \omega_l. \tag{4}
\]

Here, \( \vartheta_i \sim N(0, \psi^s) \) and \( \omega_l \sim N(0, \psi^a) \), are random effects for consumer \( i \) and advertisement \( l \), respectively. The parameters \( \psi^s \) and \( \psi^a \) represent the standard errors (se) of the threshold distribution across consumers and ads, respectively, and \( \eta \) is the expected value of the threshold across ads. This specification, consistent with the work in psychology on memory thresholds (e.g., Dougherty et al. 1999, Kruschke 1996, Nelson et al. 1991), we extend by allowing the threshold to vary across both advertisements and consumers. We describe the expected memory threshold across ads as a function of ad originality, familiarity, and the interaction, as well as the context provided by the magazine:

\[
\eta = \kappa_0 + \kappa_1 \text{Originality} + \kappa_2 \text{Familiarity} + \kappa_3 \text{Originality} * \text{Familiarity} + \kappa_4 \text{Magazine}. \tag{5}
\]

Advertisement characteristics that lower the memory threshold promote memory retrieval accuracy independent of the amount of information extracted during the previous advertisement exposure.

The memory indicator, \( y_{il} = 1 \) if the advertised brand in ad \( l \) is accurately retrieved from memory, and \( y_{il} = 0 \) if not, is assumed to follow a Bernoulli distribution with probability:

\[
\pi_{il} = \Pr(\phi_{il} + \epsilon_{il} > \theta_{il}), \tag{6}
\]

where \( \epsilon_{il} \) is the error occurring in memory retrieval (Hawley and Johnston 1991), assumed to follow a standard normal distribution. Hence, the probability of accurate memory retrieval increases when the amount of information about the brand in long-term memory increases, when the memory threshold decreases, or both. Through the proposed model we may isolate the contribution of these two mechanisms on memory accuracy.

In summary, we have extended the model by Wedel and Pieters (2000) to enable us to estimate the influence of ad originality, ad familiarity, and their interaction on attention to the three ad elements (Hypotheses 1 and 3) and their influence on the memory threshold (Hypotheses 2 and 4). Using the model, we test the four hypotheses simultaneously. This allows us to identify the direct and indirect effects that ad originality, familiarity, and their interaction have on memory for the advertised brands. We control for consumer and advertisement heterogeneity in both information storage and retrieval. The model is essentially a combination of an NBD regression model for the fixation frequencies and a hierarchical binary probit model with dual heterogeneity for the memory indicators. It is estimated using an MCMC estimation algorithm (Gelman et al. 1995, Gilks et al. 1996), details of which are provided in the Appendix.

4. Study

4.1. Advertising Stimuli and Participants

The stimulus material comprised all 58 full-page advertisements inserted in two consumer magazines. The first magazine was an issue of a popular weekly (Elsevier) similar to Time and Newsweek. It contained 144 pages, including 31 with full-page ads. The ads featured a range of products including insurance, banks, cameras, cigarettes, home entertainment, watches, travel, clothing, furniture, and mail and telephone services. The second magazine was an issue of a weekly magazine of a large retailer (Allerhande). The magazine featured articles about food preparation and homemaking, as well as advertisements for brands that the retailer carries. It contained 112 pages, including 27 with full-page ads. The ads promoted a range of products including cereal, coffee, bread, sauces, spreads, detergents, alcoholic beverages, and personal care products. Advertisements were located throughout the two target magazines with different
facing editorial material. All ads appeared only once in the two target magazines. Data collection took place before the target issue of the magazines reached the stores, newspaper stands, or subscribers’ mailboxes.

One hundred and nineteen consumers participated in the study, 64 males and 55 females. Average age of the participants was 38 years (se = 9.6). Thirty-five percent had a college or university degree. Participants were selected by a market research company, and were paid U.S. $20. None of the participants had ever participated in eye-tracking research before, and all had normal or corrected-to-normal vision.

4.2. The Eye-Tracking Procedure
Participants engaged in a visual exploration task (Janiszewski 1998). Upon entering the test room, participants were seated at a table in front of the eye-tracking instrument. They paged through four magazines, including the two target magazines. The other two magazines differed across participants and their test results are proprietary. Order of the magazines was randomized across participants. Magazines were fixed to the table, with a small steel wire through the center. This ensured that participants could freely leaf through the magazines at their own pace, while the position of the magazines remained stable on the table, which is required to reliably identify eye positions on the details of the print ads. Participants read the following instruction: “We ask you to page through several magazines. You can do this at your own pace, as you would do at home or in a waiting room.” Overall, the paging task took about 30 minutes to complete.

During the task, participants’ eye movements were recorded using infrared corneal reflection eye tracking (e.g., Muller et al. 1993 for details). The specific eye-tracking apparatus we used has been developed by Verify International in Rotterdam (The Netherlands). It leaves participants free to move their heads (within a virtual box of about 30 centimetres) when paging through the magazines. Cameras track the position of the head and eye, allowing continuous correction for position shifts. Another camera tracks the opened pages and links these with the eye-tracking data. Measurement precision of the eye-tracking instrument is better than 0.5 degree of visual angle. The instrument registered the fixation frequency per participant and ad element.

4.3. Brand Memory Task
After completing the visual exploration task, participants engaged in an unrelated task that took 10 minutes, before performing an implicit memory test (Krishnan and Chakravarty 1999, Richardson-Klavehn and Bjork 1988). Participants were seated individually in front of a NEC 21-inch touch-sensitive monitor to assess their memory for the advertised brands. One hundred and seventy-eight advertisements, including the 58 from the target magazines, were shown in random order on the screen. The image of the advertisements on the monitor was pixelated to perceptually degrade it (Hawley and Johnston 1991). Pixelation is such that fine print and pictorial details disappear, but the main forms, colors, and layout of the ad remain visible. Each image was accompanied by four brand names in the same product category, one of which was correct. The participants’ task was to identify which brand was featured in the advertisement by touching the correct alternative on the screen. Accurate identification of the brand was recorded for each advertisement and participant. For further detail see, e.g., Krishnan and Chakravarty (1999) and Wedel and Pieters (2000).

4.4. Ad Originality and Familiarity
Two independent sets of four judges (trained graduate students) assessed the originality and familiarity of the advertisements. Using two independent sets of judges ensured that the two ad judgement tasks did not influence each other, and that ad judgement did not influence the attention and memory tasks (Olney et al. 1991). Four judges assessed ad originality on four 7-point response scales (not original–original, looks like other ads–does not look like other ads, not surprising–surprising, ordinary–unique) (Amabile 1983, Cox and Cox 1988, Haberland and Dacin 1992, Plucker and Renzulli 1999). Four other judges assessed ad familiarity on two 7-point scales (seen before never–often, familiar not at all–very much) (e.g., Schlenger 1979). Ads were randomised across judges to control for order and fatigue effects. Reliability coefficients alpha across items and
judges were 0.86 and 0.84 for ad originality and familiarity, respectively. Scores were averaged across items and judges, and standardised to form overall originality and familiarity scores per ad. The correlation between ad originality and ad familiarity was insignificant \((r = -0.10, p = 0.44)\). 

5. Results

5.1. Descriptive Results

Descriptive results are reported in Table 1. The average size of the ads was 3.79 \(dm^2\), with 0.40 \(dm^2\) devoted to the brand element, 0.77 \(dm^2\) devoted to the textual element and 2.62 \(dm^2\) devoted to the pictorial element. Consumers fixated on average 7.16 times on each of the 58 full-page ads (average gaze duration 1.42 seconds). They fixated on average 1.36 times on the brand element of the advertisements, 2.81 times on the text element, and 2.99 times on the pictorial element. In addition, on average 24.1% of the advertised brands were identified accurately in the memory task. This percentage is low and not significantly different from the 25% expected frequency (as the memory task was to indicate one out of four).

5.2. Ad Originality and Familiarity

Effects on Attention

Table 2 shows the substantial effects of ad originality and familiarity on attention to the three elements of magazine advertisements.

In support of Hypothesis 1, increased levels of ad originality promote increased attention to the brand in advertisements, as indicated by the positive credible interval \((\rho_{21}, \text{posterior median 0.252})\). In addition, the interaction between ad originality and familiarity is positive and substantial \((\rho_{41}, \text{posterior median 0.285})\), which supports Hypothesis 3. Ad familiarity does not reduce attention to the brand in our print advertisements (the credible interval covers zero). To explore the interaction in more detail, Figure 2a illustrates the estimated effects of ad originality and familiarity on fixation frequencies to the brand (based on the median values of significant model parameters).

Inspection of the interaction effect shows that brand elements receive most attention in ads that are both original and familiar, and least attention in ads that are familiar but not original. This result is revealing. It implies that ad originality may not just mitigate the attention decrement due to ad familiarity, but that higher levels of ad familiarity actually may increase the positive effect of ad originality on attention to the brand.
How do ad originality and familiarity affect attention to the pictorial and text in advertisements? Table 2 shows that ad originality also increases attention to the pictorial ($\rho_{21}$, posterior median 0.095), that ad familiarity has no effect (credible interval covers zero), and that the interaction between ad originality and familiarity is positive and substantial ($\rho_{43}$, posterior median 0.153). Most attention to the pictorial is provided in original and familiar advertisements. Figure 2c displays the estimated fixation frequencies on the pictorial for ad originality and familiarity. As for the brand, attention to the pictorial is lowest for ordinary, familiar ads and highest for original, familiar ads, and the performance of unfamiliar ads is in-between.

The effects of ad originality and familiarity on fixation frequency to the text are different from those for the brand and pictorial, and they add further detail. Ad originality and the interaction between ad originality and familiarity have no systematic effect on attention to the text (credible intervals cover zero). However, the decrement in attention to the text of familiar advertisements is substantial ($\rho_{32}$, posterior median $-0.126$). Figure 2b displays this effect. Jointly, these findings indicate that attention decrements due to ad familiarity are largely captured by reduced attention to the text of our print advertisements. Also, attention increments due to ad originality and the interaction between ad originality and ad familiarity are largely captured by the brand and pictorial element of print ads.

Instead of hurting attention to the brand element, ad originality promotes more intense attention to the brand element, which supports our predictions. However, in the event that original ads would promote even more attention to the pictorial than to the advertised brand, originality may still hurt the brand. In that case, more attention in an absolute sense but less attention in a relative sense would be devoted to
the advertised brand in original as compared to less original advertisements. The results in Table 2 show that this is clearly not the case. The effect of ad originality on attention to the brand, controlled for the size of the elements, is about 2.5 times higher than the increase in attention to the pictorial (0.252 versus 0.095), and the two credible intervals do not overlap. Likewise, the effect of the interaction between ad originality and familiarity for the brand is, controlled for ad element size, about 1.5 times higher than the effect for the pictorial (0.285 versus 0.153) and the two credible intervals do not overlap. In other words, the attention increment of ad originality for the advertised brand dominates. These findings provide systematic support for Hypotheses 1 and 3.

Before turning to the memory effects of ad originality and familiarity, some descriptive results deserve mention. While the absolute fixation frequencies on the brand element are low (Table 1), the estimated frequencies per unit size are substantial, and about two times larger than for the text and pictorial element (Table 2: posterior medians 1.800 versus 0.717 and 0.717). This illustrates the informativeness of the brand when consumers explore print advertisements. Table 2 also reveals differences between the two magazines in amount of attention attracted. As one might expect, the business magazine (Elsevier) attracted more attention to the text, while the retail magazine (Allerhande) attracted more attention to the brand and pictorial elements of the print advertisements it contained. Because the effects are obtained while controlling for the size of ad elements and the originality and familiarity of the ads, they indicate specific media context effects captured by the model.

### 5.3. Ad Originality and Familiarity

**Effects on Memory**

Table 3 shows that attention to the three ad elements promotes subsequent memory for the advertised brand.

While attention to each of the three ad elements contributes significantly to accurate brand memory, the contribution of attention to the brand element is the largest. The positive influence of attention to the brand is about five times as large as the contribution of attention to the text element (median estimates 0.056 versus 0.011), and about three times as large as the contribution of attention to the pictorial element (0.056 versus 0.017). The credible interval for the brand element does not overlap with the credible intervals for the text and pictorial elements.

These findings reveal the indirect effects of ad originality and familiarity on brand memory through the effects that they have on attention to the three ad elements, in particular to the brand. Attention to the brand, text, and pictorial increases the total amount of information available in memory, which improves brand memory.

Table 4 shows the direct effects that ad originality and familiarity have on accurate brand memory by lowering the memory threshold.

Counter to Hypothesis 2, ad originality did not lower the threshold for accurate brand memory.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Contribution of Fixation Frequency at the Ad Elements to Brand Memory: Median and Credible Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameters</td>
<td>0.050</td>
</tr>
<tr>
<td>Brand</td>
<td></td>
</tr>
<tr>
<td>$\mu_1$ (mean)</td>
<td>0.045</td>
</tr>
<tr>
<td>$\sigma^2_1$ (ad s.e.)</td>
<td>0.012</td>
</tr>
<tr>
<td>$\sigma^2_2$ (consumer s.e.)</td>
<td>0.008</td>
</tr>
<tr>
<td>Text</td>
<td></td>
</tr>
<tr>
<td>$\mu_2$ (mean)</td>
<td>0.005</td>
</tr>
<tr>
<td>$\sigma^2_2$ (ad s.e.)</td>
<td>0.012</td>
</tr>
<tr>
<td>$\sigma^2_2$ (consumer s.e.)</td>
<td>0.008</td>
</tr>
<tr>
<td>Pictorial</td>
<td></td>
</tr>
<tr>
<td>$\mu_3$ (mean)</td>
<td>0.011</td>
</tr>
<tr>
<td>$\sigma^2_3$ (ad s.e.)</td>
<td>0.012</td>
</tr>
<tr>
<td>$\sigma^2_3$ (consumer s.e.)</td>
<td>0.008</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Influence of Ad Originality and Familiarity on Memory Threshold: Median and Credible Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold Parameter</td>
<td>0.050</td>
</tr>
<tr>
<td>$k_0$ (mean)</td>
<td>0.851</td>
</tr>
<tr>
<td>$k_1$ (originality)</td>
<td>$-0.130$</td>
</tr>
<tr>
<td>$k_2$ (familiarity)</td>
<td>$-0.276$</td>
</tr>
<tr>
<td>$k_3$ (originality + familiarity)</td>
<td>$-0.175$</td>
</tr>
<tr>
<td>$k_4$ (magazine)</td>
<td>0.265</td>
</tr>
<tr>
<td>$\phi^*(ad\ residual\ s.e.)$</td>
<td>0.196</td>
</tr>
<tr>
<td>$\phi^*(consumer\ residual\ s.e.)$</td>
<td>0.096</td>
</tr>
</tbody>
</table>

Note: Negative sign indicates a decrease of the memory threshold.
directly, as indicated by a credible interval that covers zero. However, as we expected, ad familiarity did lower the memory threshold significantly (κ₂, posterior median −0.206). This means that familiar ads are more accurately identified in the memory task, independent of the amount of attention that consumers paid to the three ad elements in the previous ad exposure. It is evidence for the memory traces that prior advertising builds for brands.

Moreover, in support of Hypothesis 4, there is a significant positive interaction effect of ad originality and familiarity on the memory threshold (κ₃, posterior median −0.092). This indicates that the lowest memory threshold, and hence the highest memory accuracy, is attained by original, familiar ads. Inspection of Figure 2d with the estimated memory threshold for ad originality and familiarity corroborates this. It shows that the memory threshold for low levels of originality is rather constant, but that the memory threshold varies strongly for high levels of originality, with the best performance for high originality and high familiarity and the worst for high originality and low familiarity.

The positive estimate for magazine (κ₄, posterior median 0.141) expresses that the memory threshold was inherently higher, and hence the memory accuracy lower for brands in the business magazine (Elsevier) than for brands in the retail magazine (Allerhande).

5.4. Ad Originality Follow-up
The findings demonstrate how the brand and pictorial elements gain from ad originality, either as a main effect or in interaction with ad familiarity. They also show that the text is hurt most by ad familiarity and does not gain from ad originality, either as a main effect or in interaction. One might argue that perhaps the text element did not gain from ad originality because ad originality in our target advertisements resided mostly in the pictorial element. In addition, perhaps certain structural characteristics of our original ads may have differed from those of unoriginal ads, which could diminish potential positive effects of ad originality on attention to the text element. If, for instance, the text in original ads would more often have a large pitch size ("big type"), less attention would be required to process them.

To examine these issues, a sample of four trained judges rated the originality of only the text of the ads, and a second sample of four trained judges rated the originality of only the pictorial of the ads. Ads were rated on the same four items used in the main study. Raters were instructed to either "focus on the text in the advertisement only" or to "focus on the pictorial and illustration in the advertisement only." Reliability coefficients alpha across items and judges were 0.96 for the pictorial-only and 0.89 for the text-only task. Scores were averaged across items and judges, and standardised to form overall picture-original and text-original scores for each of the 58 ads. Correlation between text originality and picture originality was −0.015 (p = 0.912).

Next, the overall originality score for the ads was regressed on text originality and picture originality and on the dummy variable distinguishing the two magazines (1 = Elsevier, 0 = Allerhande). Both text originality (b = 0.253, p = 0.040) and picture originality (b = 0.345, p = 0.008) contributed significantly to the overall originality of print advertisements, while magazine did not (b = 0.106, p = 0.401). Moreover, a Wald test demonstrated that the contributions of text originality and picture originality to overall ad originality did not differ significantly from each other (F(1, 54) = 0.01, p = 0.904).

Next, the overall originality score of each ad was regressed on structural ad features that could influence attention: serial position, left-right, and cover position (inside, outside versus rest), number of pictures, presence of a packshot, number of brand mentions, whether the ad was in big type, whether it was a heavy copy ad, and number of colors (Finn 1988, Gorn et al. 1997). The overall regression model was not significant (F(9, 48) = 0.53, p = 0.840), nor were any of the structural ad characteristics.

These findings support that text originality and picture originality contributed equally to the overall originality of the print advertisements, and that the overall originality of print ads was not systematically related to one or more structural ad characteristics, thus providing additional validity to our findings on the effects of originality and familiarity.
6. Conclusion
The contribution that advertising can make to brand equity is increasingly challenged in today’s markets and media, where competition for the consumers’ scarce attention is fierce. Potential benefits and risks of original advertising have been discussed frequently by advertising practitioners, but seldom, if ever, investigated empirically. In Reid et al.’s (1998, p. 14) words “few, if any, areas of advertising study are more in need of systematic and focused research attention.”

To our knowledge this is the first study to document the eye-catching qualities of ad originality and familiarity under natural conditions in cluttered media vehicles. The findings illustrate a potential double benefit of ad originality for brand memory. First, ad originality enhances information storage about the advertised brand in memory by increasing the amount of attention devoted to it. The positive impact of ad originality on information storage was found to further increase for familiar, original advertisements. Second, ad originality in interaction with ad familiarity enhanced the retrieval of information about the advertised brand by lowering the threshold for accurate memory. Hence, ad originality promoted significant indirect and direct improvements in memory for the advertised brands. The findings demonstrate that original ads can break through the clutter of competing ads and wear out more slowly than ordinary ads do. This is important in view of the rising levels of competitive clutter, the risks of wear out, and the increasing production and media costs of advertising. The findings were obtained across a substantial sample of advertisements and consumers while accounting for heterogeneity in both, which adds to their credibility. They have several implications for advertising management and research.

There is a long-standing debate in the advertising industry about potential conflicts between the originality and effectiveness of advertising (Kover 1995, Kover et al. 1995, Moriarty 1996). On the one hand, art directors and copywriters sometimes believe that originality is a key requirement for advertising to be effective and that, in fact, originality is effectiveness. Some believe that a focus on ad effectiveness is dangerous because it minimizes the creative dimension of advertising, which eventually reduces ad effectiveness. On the other hand, advertisers and account managers believe that an emphasis on ad originality may diminish the effectiveness of advertising, and that original advertising may win creative awards but lose markets. While such a tension between originality and effectiveness may exist for extreme levels of originality, the present findings show the opposite for the garden-variety originality encountered in a proportion of everyday advertisements. The finding that higher ad originality systematically stimulated attention for the advertised brand and promoted brand memory should be reassuring to both creative people and advertising managers, and may mollify advertiser-agency relationships. The results systematically support the beliefs of copywriters and art directors about the effectiveness of original advertising, which may prompt more efforts into developing and running such campaigns.

However, another popular belief among creative people is contradicted by the current findings. It is sometimes believed that ad originality defies testing, and that originality is “crushed” by advertising research (Moriarty 1996). While the creative process in advertising may sometimes be elusive and mysterious (Blasko and Mokwa 1986, Reid et al. 1998), the creative product, i.e., original advertisements, is not. The results demonstrate how eye-tracking and memory measures can register the subtle but crucial influences of originality and familiarity on ad effectiveness. The level of detail about consumer information acquisition during the first few seconds of exposure to advertisements cannot be obtained otherwise. While subtle, these immediate effects of advertising can be substantial, which should encourage the joint application of eye-tracking and memory techniques more systematically in pre-tests and in post-tests.

Eye-tracking research has long held the promise of providing unprecedented insights into consumers’ information-acquisition behaviors, in particular into the rapid and automatic processes during ad exposure (Bettman et al. 1991, Rossiter and Percy 1997). But the laboratory nature of typical data collection procedures led to small samples of tested ads and consumers, while the lack of formal models prevented the accumulation of generalizable findings. This has severely
limited the contributions of eye tracking to marketing theory and managerial practice. Recent developments in data collection methodologies handle large samples of ads and consumers, and allow for more natural viewing conditions. In addition, our mathematical model presents a step towards a formal conceptualization and representation of attention processes that build memory for brands. Rather than being a mere data analysis technique, our model is based on recent developments in attention and memory theory, and its parameters have a substantive interpretation. The model allows managers to identify the two routes through which advertising can contribute to brand memory, directly by lowering the memory threshold and indirectly by increasing attention to the ad elements, and it quantifies the determinants of each route. As a case in point, while ad familiarity reduced attention to the advertised brand but improved brand memory directly, ad originality improved both simultaneously, either by itself or in interaction with familiarity. The hierarchical Bayes method that we adopted allows optimal pooling of data across advertisements and consumers. Thus, the model can lead to better insights into the impact that characteristics of advertisements and consumers have on advertising effectiveness, and thus may improve management decisions.

6.1. Limitations and Future Research
There are several important limitations of the present research. Our findings suggest that originality should be useful for campaigns that have brand awareness as the primary communication objective. They do not speak directly to the issue of forming positive brand associations, beliefs, and attitudes (Keller 1998). While some initial research suggests that attention to the elements of product packages is predictive of subsequent brand choice (Pieters and Warlop 1999), the mediating processes are not yet known, nor whether and under which conditions the findings generalize to attention to advertising. Attention to advertising is a necessary but insufficient condition for ad effectiveness. More research is needed to examine under which conditions, if at all, attention to the elements of advertisements may positively influence final brand attitudes and choice.

A second limitation concerns the presently somewhat crude conceptualization of attention and memory processes. Future research can provide more detail for several of the model components. Possible extensions of our research may, for instance, specify the influence of competition between advertisements and editorial content in magazines for attention and memory, and forgetting due to the passage of time. Follow-up studies may also accommodate the influence of consumer characteristics, such as product involvement or expertise.

The present research represents an initial attempt to investigate the influence of ad originality on attention to, and memory for, the brand in advertising. The firm but untested belief of advertising practitioners that original ads have systematic attention and memory advantages over ordinary ads prompted it. Our focus was not on a comparison of specific techniques to create original ads, but on a comparison of a fairly large sample of regular ads that vary in originality, as assessed through expert judgement. Also, the focus was on degrees of originality defined within the set of ads available in the experiment, rather than on ad originality in an absolute sense. The findings support advertising practitioners' beliefs about the benefits of original advertising for awareness building, which we consider to be a starting point for future research. Yet, generalising the findings beyond the range of ad originality and familiarity levels of the present study is not recommended. Further work may analyze, among others, the conditions upon which ad originality may have detrimental instead of beneficial effects for brand attention, memory, and attitudes. It may examine the influence of other ad characteristics besides familiarity that may interact with ad originality, such as the complexity of the ads and the appropriateness of originality. It may also prospect the boundaries of the originality spectrum by examining the effectiveness of the rare cases of award-winning original advertising and how they differ from the mundane cases that consumers encounter in everyday life.

Acknowledgments
Verify Nederland, Rotterdam, the Netherlands, collected the eye-tracking and memory data for this study, for which the authors thank Dominique Claessens.
Appendix: MCMC Estimation

The parameters of the model were estimated using Markov Chain Monte Carlo (MCMC) methods (cf. Gelman et al. 1995). All prior distributions are standard conjugate distributions, with the exception of the priors for the parameters of the NBD, which we specify to be normal. In developing the MCMC algorithm, we have $\alpha = (\alpha', \alpha'')$, $\beta = (\eta, \mu')$, and the block diagonal matrices

$$
\Psi^2 = \begin{pmatrix}
\varphi^2 \\
\Sigma^2
\end{pmatrix}, \quad \Psi^3 = \begin{pmatrix}
\varphi^3 \\
\Sigma^3
\end{pmatrix},
$$

with $\Sigma^i = diag(\sigma^2)$. We assume the ad-level descriptor variables, familiarity, originality, the familiarity-time-originality interaction and the Magazine-dummy to be contained in the $(L \times 5)$ matrix $z = (z_i)$. We use the following prior distributions:

$\alpha_{2j} \sim N(A_{2j}, B_{2j}^{-1})$, $k \sim N_2(A_{2j}, B_{2j}^{-1})$, $\mu \sim N_2(A_{2j}, B_{2j}^{-1})$, $\rho \sim N_2(A_{2j}, B_{2j}^{-1})$, $\Psi^{-1} \sim W(G_0, H_0)$, $\Psi^{-1} \sim G_0(G_0, H_0)$, with $A_0 = 0, B_0 = 10^{-2}, G_0 = 1, H_0 = 10^{-2}$.

We sample the parameters successively from their full conditional posterior distributions:

1. $\alpha_{2j} | n_{2j} \sim N(A_{2j}, B_{2j} \times NBD(n_{2j} | \rho_{2j}, \alpha_{2j}))$, and $\rho_{2j} | n_{2j} \sim N(A_{2j}, B_{2j} \times NBD(n_{2j} | \rho_{2j}, \alpha_{2j}))$. Since the prior and the likelihood are not conjugate, we employ a Metropolis-Hastings step to sample from the posterior distribution.

2. $D_{ij} | y_{ij} \sim N_2((\theta_{ij} - \theta_{ij} | y_{ij} = 1)$, truncated normal distributions, where $D_{ij} = \theta_{ij} - \theta_{ij} + \epsilon_{ij}$.

3. $\beta_{ij}^2 \sim N_2((X_i X_i^T + \Psi^{-1})^{-1} (X_i X_i^T + \Psi^{-1})^{-1} - X_i X_i^T + \Psi^{-1})^{-1}$, truncated normal, where $X_i = (1, n_{ij}, n_{ij}, n_{ij}),$ with $Q_i = (D_{ij} - B_{ij} = \sum n_{ij} \beta_{ij}),$ and $\lambda = (z_i, \mu')$.

4. $\beta_{ij}^3 \sim N_2((X_i X_i^T + \Psi^{-1})^{-1} (X_i X_i^T + \Psi^{-1})^{-1} - X_i X_i^T + \Psi^{-1})^{-1}$, truncated normal, where $X_i = (1, n_{ij}, n_{ij}, n_{ij}),$ with $W_i = (D_{ij} - B_{ij} = \sum n_{ij} \beta_{ij})$.

5. $\mu \sim N((L \Sigma^{-1} + I \Sigma^{-1} + B_0)^{-1} (\Sigma^{-1} + \Sigma^{-1} \Sigma^{-1} - \Sigma^{-1} + B_0), (L \Sigma^{-1} + I \Sigma^{-1} + B_0)^{-1})$ with $\gamma_i^2 = (\beta_{ij}, \beta_{ij}, \beta_{ij})$ and $\gamma_i^3 = (\beta_{ij}, \beta_{ij}, \beta_{ij})$.

6. $\Psi^{-1} \sim W(L + G_0, \sum (\beta_i - \lambda) (\beta_i - \lambda) + H_0)$, where $G_0 = \sum \delta_i (\beta_i - \lambda) + H_0$.

7. $\Psi^{-1} \sim W(L + G_0, \sum (\beta_i - \lambda) (\beta_i - \lambda) + H_0)$, where $G_0 = \sum \delta_i (\beta_i - \lambda) + H_0$.

8. $\kappa \sim N((\nu^{-2} z^2 + B_0)^{-1} (B_0 A_0 + \nu^{-2} z^2 B_0), (\nu^{-2} z^2 + B_0)^{-1}$, with $B_0 = (\beta_{ij}^2)$.

In the applications, we used starting estimates obtained from maximization of approximate likelihood functions, and ran the MCMC Chain for 15,000 iterations with a burn-in of 5,000 iterations. Every tenth draw was retained. Stabilisation of time-series plots of the quantiles of the samples was used to assess convergence. After the burn-in, all chains were stationary. We take the posterior median and 95% credible regions as characterizations of the posterior distributions of the parameters.

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Accepted by Dipak Jain; received January 27, 2001. This paper was with the authors for 2 revisions.