Recall and Consumer Consideration Sets: Influencing Choice without Altering Brand Evaluations

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Although there is ample evidence that consumers consider only a small proportion of the available alternatives when making choices (see, e.g., Campbell 1969; Hauser, Urban, and Roberts 1983), little attention has been devoted to the process by which they arrive at this constrained set prior to choice. Most choice studies ignore effects of the "choice set" and present respondents with a fixed set of alternatives for choice. Research then centers around how brand evaluation and conscious decision rules affect choice from within this set. This focus on post-choice-set processes results from the mistaken perception that choice sets are relatively static (cf. Haaser and Wernerfelt 1990; Silk and Urban 1978). As a result of early work on the evoked set (Howard and Sheth 1969), consumers are thought to create and store a set of preferred brands to simplify routine decision making (Narayana and Markin 1975). In a similar vein, most explanations of choice variability, such as context effects (e.g., Belk 1975; Lutz and Kakkar 1975), variety seeking (e.g., Venkatesan 1973), and satiation (McAlister 1982), also resort to utility-based interpretations and neglect the possibility of changes in the choice set itself.

Another recent stream of research in consumer behavior eschews the use of stimulus-based task environments, where all relevant information is available to subjects, and emphasizes the role of memory-based choice (Lynch and Srull 1982). In this research, subjects are typically provided with all relevant choice alternatives but are required to retrieve from memory some or all of the "informational inputs" required for brand evaluation (see, e.g., Biehal and Chakravarti 1986; Lynch, Marmorstein, and Weigold 1988). Results suggest that decision making may proceed quite differently when choice is even partially memory based.

In this article, the interest lies at the conjunction of these two streams of research. The premise here is that, outside the stimulus-based experimental environment, choice sets are not fixed but can change across choice occasions. Consequently, this article asserts that the influence of memory will not be confined to the informational inputs used for brand evaluation but will extend to the retrieval and consideration of the brands themselves. Brand retrieval will play a role in a variety of instances either because choice is made when the alternatives are not physically present (e.g., in choosing one restaurant over another) or because the consumer must know what s/he is looking for to find it in a complex display or simply because s/he lacks the motivation to locate and examine multiple brands (see, e.g., Hoyer 1984). Conversely, any meaningful examination of choice set effects should account for the role of brand memory in determining their composition.

Accordingly, the objectives of this article are to examine the role of dynamic memory processes in (1) determining the nature of brands considered during choice and (2) accounting for subsequent variability in the final probabilities of brand choice. The article
is organized into three parts: first, a discussion of how memory may affect brand consideration and thus influence choice; then, identification of factors that determine accessibility in memory, "bringing to mind" brands other than those perceived externally; finally, a description of two experiments that manipulate the accessibility of alternatives and examine effects on the probabilities of brand consideration and choice.

THE CONSIDERATION SET

The consideration set is defined as the set of brands brought to mind on a particular choice occasion.\(^1\) When choice is memory based, it is clear that brand memory constrains retrieval and membership in the consideration set. More central to this article is the notion that memory organization shapes brand retrieval, determines the nature of the consideration set, and thus influences brand choice. The reason for this is simple. Memory factors not only aid retrieval of the brand itself but also determine its comparison set. For instance, advertising cues that help the consumer retrieve and consider a target brand could simultaneously increase the likelihood of considering other (similar) competitors. If the consumer prefers any of these competing brands, the target brand may not be chosen. Thus, an enhancement in retrieval probability will translate into a positive choice effect only if preferred competitors are not concurrently included in the consideration set.

This illustration highlights the need to understand both memory organization and memory retrieval processes to anticipate consideration-set effects on brand-choice probabilities. With this objective in mind, the choice process has been divided into the stages of brand consideration and brand evaluation. It is in the brand-consideration stage that the retrieval and formation of the consideration set occurs and in the brand-evaluation stage that the consumer deliberates about the brands included in the consideration set to arrive at a final choice. Such a two-stage representation of the choice process serves two important functions. First, it highlights the separate contributions of the brand-consideration stage hitherto ignored in most choice research. Second, it facilitates examination of the processes underlying brand consideration as distinct from those known to guide brand evaluation and choice.

The Brand-Evaluation Stage

Having brought a circumscribed consideration set of brands to mind, the consumer is in a position to evaluate these brands for choice. This is the stage in which the choice process would most approximate the stimulus-based choice studies previously conducted. The evidence suggests that consumers could use a variety of decision rules to arrive at a choice. The precise choice process notwithstanding, most current judgment and decision-making approaches to choice characterize brand evaluation as a function of brand utility. That is, brand evaluation depends on a brand's value on the attributes considered important for choice.

To recapitulate, brand consideration can be distinguished from brand evaluation, and the brand-consideration stage may be influenced by factors other than

\(^1\)Terms such as choice set or evoked set are not used in this article, largely so that the static connotations traditionally accorded these sets can be avoided.
those traditionally believed to affect brand choice. This distinction is often blurred by the observed correlation between brand retrieval and evaluation. Despite the ecological correlation that preferred brands are likely to be more accessible if only because they are instantiated more frequently, it is important to recognize that the two concepts are different and can be independently affected. A similar distinction has recently been drawn in the area of attitudes (see, e.g., Berger and Mitchell 1989; Fazio et al. 1982), where the accessibility of an attitude is seen to have effects separate from its valence or, rather, the utility of the attitude object itself. In these studies, manipulations such as direct experience increase attitude accessibility while keeping relative attitude unchanged.

The studies described in this article use innocuous brand primes to increase brand accessibility and consideration while holding brand evaluation constant. The remainder of this article is organized around a test of the central proposition that brand-choice probabilities can be influenced without changing brand evaluation merely by altering the probability of brand retrieval and the contents of the consideration set.

RETRIEVAL FROM A PRODUCT CATEGORY

The effect of a brand prime is not merely to increase the probability of retrieving the brand. As discussed at the outset, memory organization shapes retrieval, and the influence of a brand prime varies as a function of the nature of retrieval within a product category. As a result, the first step toward examining the proposition is a fuller understanding of the retrieval process and the effect of priming within a product category.

A rudimentary model of the events occurring during retrieval from a product category will be developed. Consider a simple, hierarchical category structure where a product category (P) consists of subcategories (e.g., A and B) and brands (e.g., a1 and a2 in subcategory A, b1 and b2 in subcategory B). Our model is based on a spreading-activation view of memory, most closely following Collins and Loftus (1975). That is, activation facilitates the transfer of information from long-term to working memory. Sufficient levels of activation may exist in some (frequently or recently seen) brand nodes or could "spread" from internally generated or external retrieval cues. The probability of retrieving a brand is thus a direct function of nodal strengths of activation.

We assume that a consumer retrieving brands for a consideration set begins at the product class node P. S/he will cross the link to a subcategory node A with a probability that is directly proportional to the activation strength of that node. Similarly, s/he will go from subcategory node A to brand a1 with probability proportional to the strength of node a1. The pattern of brand retrieval will thus follow the activation strengths of nodes within the particular subcategory and category structures. Activation strength is also influenced by the external cues or primes. Thus, the probability of retrieving brand j in subcategory I, given an external prime i, P(ij), may be simply expressed as

$$P(ij) = P(Ij) \times P(iI),$$

where $P(Ij)$ is the probability of retrieving subcategory I when j is primed, and $P(iI)$ is the probability of retrieving brand i, given that subcategory I is retrieved.

The probabilities of retrieving a brand can be influenced by affecting either or both of the quantities on the right-hand side of Equation 1. First, marketing stimuli (e.g., advertising for brand a1) may prime the brand directly, increasing its strength of activation. Thus,

$$P(iI) = \begin{cases} \beta_i & \text{if } i \neq j, \\ \beta_i^+ & \text{if } i = j, \quad 0 \leq \beta_i \leq \beta_i^+ \leq 1. \end{cases}$$

Further, activation will spread from the primed brand node (e.g., a1) to the immediate subcategory node (e.g., A). Thus,

$$P(Ij) = \begin{cases} \alpha_j & \text{if } j \notin I, \\ \alpha_j^+ & \text{if } j \in I, \quad 0 \leq \alpha_j \leq \alpha_j^+ \leq 1. \end{cases}$$

When taken together for all brands in the product category, this model suggests a dynamic process by which memory factors shape the retrieval and consideration of brands during choice.

The probability of retrieving a particular brand is a multiplicative function of brand and subcategory strengths of activation. Highly accessible subcategories are more likely to be retrieved. In the absence of any additional external cues, the consideration set is most likely to consist of the more salient brands within these subcategories.

An external cue, such as a brand prime, will directly increase the probability of retrieving, and thus considering, the brand ($j \in I$ and $i = j$). This effect occurs because both the probability of retrieving subcategory I is increased (to $P(I|j) = \alpha_j^+ > \alpha_j$) and the probability of retrieving the brand, given recall of the subcategory, is increased (to $P(i|I) = \beta_i^+ > \beta_i$).

Brand priming could indirectly facilitate retrieval and consideration of other brands in the same subcategory as the primed brand ($j \in I$ but $i \neq j$). This effect occurs because activation spreads to the subcategory node and the probability of retrieving subcategory I is increased (to $P(I|j) = \alpha_j^+ > \alpha_j$).2

2Although this rudimentary model does not capture the effect of priming on brand retrieval in other subcategories (see Alba and Chattopadhyay 1985), a simple extension of the model (Nedungadi 1990) is able to test for such across-subcategory effects.
HYPOTHESIS DEVELOPMENT

Following a brief description of the stimuli used, the implications of the retrieval model are translated into specific, testable hypotheses for brand retrieval and choice. Product classes with an unambiguous category structure familiar to student subjects were selected for study. Four brands (a1, a2, b1, b2) within the product class were then chosen to serve as brand primes due to their particular positions within the category structure (see Fig. 1). Specifically, two of these brands (brands a1 and a2) belonged in a highly accessible or Major Subcategory (subcategory A) within the product class, while the other two brands (brands b1 and b2) belonged in a less accessible or Minor Subcategory (subcategory B). Further, brands a1 and b1 were Major Brands (most accessible) within their subcategories and brands a2 and b2 were Minor Brands (least accessible) within their subcategories. Thus, the diverse positions occupied by brands a1, a2, b1, and b2 were representative of a range of accessibilities within the product class. In terms of Equations 2 and 3, the accessibility of subcategory A, \( \alpha_A \), is greater than that of subcategory B, \( \alpha_B \). Similarly, the within-subcategory accessibility of brand a1, \( \beta_{a1} \), is greater than that of brand a2, \( \beta_{a2} \), and likewise \( \beta_{b1} > \beta_{b2} \). Although subjects were free to choose any brand in the product category, the analysis and discussion now focuses on these four brands and the effects of priming (any one) on their retrieval and choice probabilities.

Brand Retrieval

Direct Priming Effect. It is clear that the probability of retrieving a brand is likely to increase when it is primed. However, for some of brands a1, a2, b1, and b2, this direct priming effect may be very small. Specifically, if the activation strengths of a brand (\( \beta_i \)) and its subcategory (\( \alpha_j \)) approach 1 in the absence of priming, the increase in the corresponding probabilities—\( P(i|I) \) and \( P(i|j) \), respectively—due to priming and the net effect on \( P(i|j) \) will necessarily be small (see Eq. 1). This is most likely to happen for brand a1, the most accessible or Major Brand in the most accessible or Major Subcategory.

Indirect Priming Effect. By increasing subcategory activation (\( \alpha_j \)), a brand prime can also increase the probability of retrieving other brands in the same subcategory. Again, as \( \alpha_j \) approaches 1 for some highly salient subcategories, the effect of priming on subcategory accessibility will become necessarily small. Therefore, the indirect effects of priming may be difficult to detect for the brands in the most salient or Major Subcategory, A. In addition, note that the probability of brand retrieval is a multiplicative function of subcategory accessibility, \( P(I|j) \), and within-subcategory brand accessibility, \( P(i|I) \), and that the brands in the experiment were chosen such that \( \beta_{a1} > \beta_{a2} \) and \( \beta_{b1} > \beta_{b2} \). This suggests that recall of the Major Brands in each subcategory (a1 and b1) will benefit more (indirectly) from the priming of the Minor
Brands in their subcategories than the Minor Brands (a2 and b2) will benefit from the priming of their Major Brand counterparts.

It follows from this reasoning that the indirect effect of priming on brand retrieval should be most evident in the Minor Subcategory, and for the Major Brand in that subcategory (i.e., for brand b1 in subcategory B when brand b2 is primed).

Brand Choice

Brand priming influences brand accessibility during the brand-consideration stage, thus affecting the probability that a brand is included in the consideration set for choice. Thereafter, subjects choose the most positively evaluated of all considered brands. This suggests that the effects of priming on brand retrieval will carry over to brand choice only for the most positively evaluated brand in the consideration set.

Brand Evaluation

As discussed, an objective of the study was to influence brand retrieval and consideration without altering brand evaluations. To ensure this, brands were primed unobtrusively in the context of another task. The primes were also designed to be quite neutral in terms of their evaluative content.

The following four hypotheses summarize the discussion of the effects of priming on brand retrieval, choice, and evaluation.

H1: (Retrieval—Direct Effect) Priming of a brand will directly increase the likelihood of retrieving that brand. This effect is likely to be small and least noticeable for the most accessible brands in highly accessible subcategories.

H2: (Retrieval—Indirect Effect) Priming of a brand will indirectly increase the probability of retrieving other brands in the same subcategory as the primed brand. This effect is likely to be most pronounced for the most accessible brands in (otherwise) inaccessible subcategories, when the less accessible brands in these same subcategories are primed.

H3: (Choice) The direct and indirect effects of priming on retrieval of a brand will carry over to increase its probability of choice only when better-liked brands in the category are not simultaneously retrieved.

H4: (Evaluation) Brand priming can affect accessibility without any effect on brand evaluations.

EXPERIMENT 1

Subjects

One hundred and five undergraduate business students from a large southeastern university participated in the experiment in exchange for course credit.

Design

Brand Prime and Brand were manipulated in the experiment. The Brand Prime factor consisted of five levels. Subjects in the first four levels were each primed with one of the four brands, a1, a2, b1, or b2, selected from the product class (see Fig. 1). The fifth level served as a control group and was not primed with any of these brands. The Brand factor, in turn, consisted of the same four brands, as they were the focus of these analyses. Each subject repeated the task for three separate product classes presented in counterbalanced order. Thus, the relevant design was a $5 \times 4$ mixed factorial.

Tests of the hypotheses entailed comparisons between a no-prime control group and other primed groups. Since one control group was used in all tests, increasing the number of subjects in this group ensured a more stable estimate of the baseline probabilities, thus enhancing the power of each test. For this reason, almost twice as many subjects were assigned to the control group (33) as were assigned to each of the primed groups (18).

Stimulus Selection

In a first set of pretests, subjects were required to list familiar brands in a large number of product classes. They were then asked to cluster these brands into groups based on their perceived similarity and to label their groups. Twelve product categories with category structures familiar to student subjects were chosen for further examination. Next, two subcategories and two brands within each subcategory that were differentially accessible were identified. A second pretest was used for this purpose. To ensure maximum applicability of this pretest to the main study (and thus control error variance), it was run on the same group of subjects that later participated in the first experiment. However, since it was not necessary to establish the precise ordering of brand and subcategory accessibility at this stage (accessibility is measured directly in the experiment), and so as to minimize carryover from the pretest to the main study, accessibility was measured only indirectly. Subjects were provided with a randomly ordered list of 119 brands from the 12

3In reality, subjects were nested in product class (three levels) and presentation order (three levels), which leads to a $5 \times 4 \times 3 \times 3$ mixed factorial.
product categories and were required to rate their usage of, and liking for, each of these brands. In accordance with Nedungadi and Hutchinson (1985), brand usage rate and liking were then used to provide clues to the accessibilities of each brand and subcategory. For instance, a rarely used and poorly liked brand is likely to be less accessible than an often-used or well-liked brand, and subcategories containing only inaccessible brands are likely to be less accessible than subcategories containing accessible brands.

Following from this pretest, three product categories (and subcategories) of fast-food outlets (hamburger places, sandwich shops), hamburger condiments (mustards, pickles), and alcohol mixers (orange juices, mixes) were selected for the experiment. Twelve brands (four from each category) were chosen to serve as brand primes.

Procedure

On arrival, subjects were seated in front of a computer terminal controlled by an IBM PC XT, which was used to present the information. The cover story was that certain companies were interested in their opinions of some commonly available brands. For this purpose, subjects would be required to agree or disagree with a number of statements about these brands. They were asked to maintain a fair speed, but to ensure that their answers were accurate.

Priming. The computer then randomly assigned subjects to 15 cells (five brand-prime conditions by three product-class presentation orders). Brand priming was achieved by embedding three statements about the target brand (a1, a2, b1, or b2) within nine control statements—three each about three brands from other product classes. The statements were designed to be evaluatively neutral in content (e.g., “McDonald’s has adequate seating capacity,” or “Irish Spring is a laundry detergent”). Once the subject responded to the first statement that appeared on the screen (by depressing a key marked “true” or one marked “false”), the statement was replaced by the next one, and so on. In the space of a minute or two, subjects in the primed groups responded to 12 fairly similar, innocuous statements about four different brands. Subjects in the control group did not see any statements about the target brand and thus responded to only nine statements about three brands.

Choice, Consideration, and Recall. Immediately after they had responded to the statements, subjects were informed that the first phase of the experiment was complete and were requested to go on to the second phase, for which responses were obtained on paper. Subjects were presented a specific situation and asked to consider using brands in the relevant product class (the product class containing the target brand that had just been primed). The computer then presented them with three tasks, one at a time, in the following sequence. First, they were required to indicate their brand choice for that situation. Next, they were given 30 seconds to list the names of other brands, if any, that they had considered while they were making their choice. Then they were given two minutes to recall and list any other brands that they could remember in the product class, regardless of whether they evaluated them favorably for choice.

The choice, consideration, and recall tasks were deliberately ordered as described. Although the experiment pertains to the effect of priming on all three variables, our ultimate interest lies in influencing the probability of brand choice. For this reason, it was considered important not to force any mediating processes between brand priming and brand choice.

Once subjects had completed the second phase of the experiment for the first product class, they were informed that they would be required to repeat the same tasks for another product class. When they had completed both phases for all three product classes, they were informed that there was one additional task.

Intentions. For this evaluation task, subjects were presented with a more complete list of brands from each product category and were required to rate their choice likelihood for these brands for the same situation they had been given earlier. Intentions were collected last to avoid any possibility of carryover to the recall and choice tasks.

Once they had completed this rating task for all three product categories, subjects were informed of the true nature of the study and thanked for their participation. Subjects typically took between 25 and 30 minutes to complete the entire experiment.

Dependent Measures

The brands listed by each subject for each task served to assign retrieval, consideration, and choice scores for each of the four target brands in each product class. Measures on these variables are binary (1 if the brand was chosen/retrieved and 0 otherwise). Subjects’ intention scores for each of these brands were inferred from responses on the nine-point rating scale (“not at all likely to choose” to “very likely to choose”).

Results

Since all major hypotheses deal with the direct and indirect effects of priming, the five-level Brand Prime factor was collapsed into three levels for purposes of analysis. The No Prime level consists of the score of each brand when none are primed. The Direct Prime
level consists of the score of each brand when it is directly primed. The Indirect Prime level consists of the score of each brand when the other brand in the same subcategory is primed.

Since scores on the dependent variables of choice, consideration, and retrieval are binary, with one observation per subject, log-linear models were used to analyze the data for these two variables (Bishop, Fienberg, and Holland 1975). CATMOD (SAS 1985), a categorical modeling procedure that uses the maximum-likelihood method, was used to fit the log-linear models and to estimate parameters. The CATMOD procedure computes generalized Wald statistics, which are approximately distributed as a chi-square (SAS 1985). The intention scores were analyzed by ANOVA.

As a first step, the data were examined for effects of presentation order and product class. No significant differential effects were detected on any of the dependent variables. The data were thus collapsed across the three levels of presentation order and product class, enabling a relatively powerful test of the various hypotheses. Table 1 presents the retrieval, consideration, choice, and intention data for the four brands and three levels of the Brand Prime factor.

### Category Structure and Evaluations Prior to Priming

The method used in the pretests was, at best, a rough indicator of brand and subcategory accessibilities. Retrieval proportions in the No Prime group are a direct measure of accessibility prior to priming (see, e.g., Mervis, Catlin, and Rosch 1976; Tulving 1985). The data in Table 1 have been organized to reflect the category structure discussed earlier (i.e., subcategory A is the Major Subcategory and subcategory B is the Minor Subcategory, while brands a1 and b1 are the Major Brands and brands a2 and b2 are the Minor Brands in their respective subcategories). Brand a1 was more accessible than brand a2 ($X^2 = 31.29, p < .001$), brand b1 was more accessible than brand b2 ($X^2 = 39.56, p < .001$), and subcategory A was retrieved more often than subcategory B ($X^2 = 40.62, p < .001$).

In conformity with results from previous studies (e.g., Barsalou 1985; Nedungadi and Hutchinson 1985), brand accessibility and evaluation were closely related at the subcategory level. Intention scores in the No Prime group revealed that the most accessible or Major Brands were preferred to their Minor counterparts in both subcategories. Brand a1 was preferred over a2 ($t = 4.56, p < .001$) and brand b1 over b2 ($t = 9.91, p < .001$).

### Brand Retrieval

Significant direct effects of priming were hypothesized (Hypothesis 1) and observed for brands a2 ($X^2 = 14.17, p < .001$), b1 ($X^2 = 28.71, p < .0001$), and b2 ($X^2 = 27.92, p < .0001$). Similarly, as expected, the direct effect of priming on brand a1 was small and not significant ($X^2 = 0.97, p < .35$).

Entirely in conformity with our reasoning for Hypothesis 2, brand b1—the Major Brand in the Minor Subcategory—was the only brand that enjoyed any significant indirect increase in its probability of retrieval ($X^2 = 13.42, p < .001$) when another brand in its subcategory (b2) was primed. Indirect priming effects were not significant for either brand in the Major Subcategory ($X^2 < 1$ and $X^2 = 1.81, p < .20$, respectively) since this subcategory was already accessible prior to priming, or for the Minor Brand in the Minor Subcategory ($X^2 < 1$) since this brand was weakly associated to its subcategory node.

In sum, as hypothesized, direct effects of priming favored retrieval of brands a2, b1, and b2, although brand b1 was the only brand that experienced any indirect facilitation.

### Brand Choice and Consideration

As suggested in Hypothesis 3, effects on brand retrieval will carry over to choice only if more preferred brands are not considered. Of the three brands (a2, b1, and b2) that experienced increases in retrieval, only brand b1 is a preferred brand in its subcategory. Retrieval of brands a2

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3. When within-subject factors were involved, the results of the CATMOD analysis were compared with repeated-measures analyses of variance. The diagnosis was the same in all instances.

4. Presentation order had no significant effects on retrieval ($X^2(72) = 72.67, p < .50$), choice ($X^2(72) = 73.9, p < .45$), or intention ($F(100, 680) = 1.17, p < .15$). Further, the interaction of product class with brand and brand prime is not significant for retrieval ($X^2(12) = 11.82, p < .50$), choice ($X^2(12) = 11.54, p < .50$), or intentions ($F(12, 528) = 1.60, p < .10$).
TABLE 2
EXPERIMENT 1: RESULTS BY PRODUCT CLASS

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<td>3.22</td>
<td>4.12</td>
</tr>
<tr>
<td>Indirect Prime</td>
<td>McDonald’s 5.49</td>
<td>6.05</td>
<td>6.72</td>
</tr>
<tr>
<td></td>
<td>Wendy’s 6.00</td>
<td>4.77</td>
<td>5.24</td>
</tr>
<tr>
<td></td>
<td>Joe’s 6.05</td>
<td>5.11</td>
<td>5.87</td>
</tr>
<tr>
<td></td>
<td>Subway 2.77</td>
<td>4.33</td>
<td>2.58</td>
</tr>
</tbody>
</table>

Note.—Reported tests are differences between scores in each Prime condition and in the No Prime condition.

*p < .10.

*p < .05.

and b2 is likely to be accompanied by retrieval of the more accessible brands in their subcategories (i.e., brands a1 and b1, respectively). As noted, the more accessible brands are also the better-liked brands in each subcategory. As a result, both direct and indirect priming effects were expected to facilitate choice only for brand b1, the preferred brand in its subcategory.

It is clear from Table 1 that this was indeed the case. The probability of choosing brand b1 increased, both when it was primed directly ($X^2 = 14.51, p < .0001$) and when it was primed indirectly (when its competitor, the Minor Brand b2, is primed, $X^2 = 6.42, p < .01$). Further, as hypothesized, brand priming appears to have had little effect on the probability of choosing either brand a2 or brand b2, the Minor Brands (and therefore less preferred) in each subcategory ($X^2 < 1$ and $X^2 = 1.43, p < .25$, respectively).

An unexpected result was the significant direct effect of priming on choice of brand a1 ($X^2 = 5.93, p < .02$). It may be the case that, while priming effects on retrieval of brand a1 were suppressed because of ceiling effects, the fairly low probability of choosing this brand in the control group left room for an effect of priming on choice.

As shown in Table 1, the effects of priming on brand consideration were very similar to the results obtained for retrieval and choice and were therefore not discussed in detail.

Intention. In agreement with Hypothesis 4, priming had no effect on overall brand evaluations. The main effect of Brand Prime and the Brand Prime by Brand interaction were not significant ($F(2,264) = 1.64, p < .20$ and $F(6,264) < 1$, respectively). Focused comparisons of each cell with the control group revealed a marginally significant increase in the evaluation of brand b1 in the indirect prime cell ($F(1,49) = 3.54, p < .10$). It is important to note that the indirect priming effect on choice of brand b1 remained significant ($X^2 = 4.44, p < .05$) when this change in evaluation was taken into account.

Table 2 contains data for each product class. These results were largely consistent with the aggregate analyses (as evidenced by the nonsignificant interaction with Product Class). Obviously, since the individual product-class results were based on only one-third of the data, statistical significance was weaker than in the aggregate analysis.

Discussion

Experiment 1 was designed to address the basic proposition that, for positively evaluated brands, the probability of brand choice could be increased without influencing their evaluation but merely by altering the probabilities of retrieval and consideration. Specifically, it was proposed that, when choice was memory based, cues such as brand primes could differentially activate brands in memory, shape brand retrieval, and thus influence brand choice without any changes in brand evaluation.

The results of experiment 1 are consistent with this proposition. In three separate product categories, brand priming was seen to influence brand retrieval in predicted ways. These effects on retrieval translated into choice for preferred brands in the consideration set, but had no effect on purchase intentions for any of the brands. The data from experiment 1 were also used to test the rudimentary model of retrieval used to generate the earlier hypotheses (Nedungadi 1990).
A result that serves to dramatically illustrate the subtle effects of memory factors on choice is the indirect (positive) effect of priming a Minor Brand in a Minor Subcategory on retrieval and choice of the Major competitor in the same subcategory. It should be noted that, as with all the results, this indirect priming effect was predicted and obtained in carefully selected product categories with predefined category structures. However, the interest in this article is not on the effects per se but on the role of these effects in exemplifying the often unanticipated effects on memory and thus on choice that may occur in practice.

Experiment 1 is subject to some limitations. First, since subjects were not presented with an actual choice, it could be argued that a more involving choice situation would erasure the effects of memory on choice. Second, the brand choice, consideration, and recall tasks followed one another, in the same order, and used the same implicit measure (probability of listing) for all subjects. Although results indicate that this measure captured different effects for each task, it is possible that indicating brand choice first may have affected the subsequent listing of brands and thus influenced brand consideration and retrieval. Third, the choice-likelihood scale used in this study is likely a less appropriate measure of brand evaluations than the traditional attitude scales.

A final concern may be that, since subjects were presented with three product classes in turn, they could have guessed the nature of the manipulation, increasing the probability of demand effects. To assess the nature of these effects, the data were first separated by ordinal position (i.e., first, second, third position) of presentation. The three-way interaction of Ordinal Position by Brand Prime by Brand is not significant for retrieval ($X^2(12) = 8.11, p < .80$), choice ($X^2(12) = 10.79, p < .55$), or evaluation ($F(12,246) = 0.71, p < .75$), which indicates that there were no differential effects across ordinal positions of presentation. If operative, demand effects would also have lead to uniform priming effects across brands. However, the obtained priming effects were different and clearly depended on prior brand accessibilities. Most important, demand cannot account for the indirect effect of priming on retrieval and choice of brands other than the brand primed.

**EXPERIMENT 2**

Experiment 2 focused on the indirect priming effect obtained in the previous study and attempted to replicate this result while addressing the limitations of experiment 1. Accordingly, subjects faced an actual choice situation, and thus more realistic measures of brand choice and consideration were collected. Further, the order of the brand-consideration and brand-choice tasks was varied, brand accessibility was measured separately, and brand evaluations were measured directly on a traditional attitude scale. Finally, subjects were primed for only one product class.

**Subjects**

One hundred and eighteen undergraduate business students from a large northeastern university took part in the experiment as part of a class exercise.

**Design and Stimulus Selection**

The product category of fast-food outlets was chosen for study. To recapitulate, the indirect priming effect involved an increase in the consideration and choice of a Major Brand in a Minor subcategory when a Minor Brand in the same subcategory was primed.

In a separate pretest to explore category structure, 44 subjects were required to list all accessible brands and groups of brands or subcategories within the product class. The subcategory of chicken places was a Minor Subcategory (retrieval proportion of .50 versus .81 for the Major Subcategory of hamburger places; $X^2 = 14.49, p < .001$). Swiss Chalet was the most accessible or Major Brand within this subcategory, and St. Hubert's was the least accessible or Minor Brand (.54 and .20, respectively; $X^2 = 10.26, p < .001$). The measure of accessibility for Kentucky Fried Chicken (the third member of the subcategory) was .43. In line with the focus of the experiment, our interest was in the effect of priming St. Hubert's (a Minor Brand in a Minor Subcategory) on choice, consideration, and accessibility of all three brands within this subcategory.

As before, Brand Prime (No Prime versus Prime) and Brand (three brands) were the two factors manipulated. An additional factor in this study was the order in which the choice and consideration tasks were presented to subjects. Subjects were randomly assigned to two task orders. Thus, the design was a $2 \times 3 \times 2$ mixed factorial.

**Procedure**

Subjects were given a booklet that contained all experimental material and were informed that the experiment concerned target marketing and was intended to measure the suitability of different ads for specific types of magazines. In keeping with this cover story, subjects were first asked to list all magazines they could remember in three specific subcategories—fashion, news, and trade. Their next task was to rate the appropriateness of five ads for each of three types of magazines. That is, subjects were asked to study each ad carefully and then rate its appropriateness for fashion, news, and trade magazines, respectively. To ensure that they paid some attention to the advertised product, subjects were provided a space to write down the name of the advertised brand prior to rating the appropriateness of the ad.
**Priming.** For subjects in the Prime condition, the fifth ad consisted of a mock-up trade ad for St. Hubert’s Chicken that described the ability of St. Hubert’s to increase franchise owners’ profits. Subjects in the No Prime condition saw a similar trade ad for a carbonated soft drink. Once subjects had rated all five ads, they were asked to turn to the next blank page.

**Choice and Consideration.** The experimenter then informed subjects that they could have a $1 coupon for the fast-food place of their choice and a can of carbonated soda as gifts for their participation. Although fast-food outlets were the focus of the study, the product class of carbonated sodas was added to all tasks to reduce the possibility of demand effects. Subjects in the choice-first condition were asked to write down the name of the fast-food outlet for which they would like a coupon. They were then asked to write down the names of all other fast-food outlets they would consider taking a coupon for, in case the experimenter did not have a coupon for the brand they had chosen. Subjects were given 30 seconds for the consideration task. In contrast, subjects in the consideration-first condition were first asked to write down the names of all outlets they would consider taking a coupon for, and then asked to circle the outlet that would be their first choice. Subjects then repeated both tasks for the product class of carbonated sodas.

**Accessibility.** Next, brand accessibility was measured by means of a word-fragment completion task (e.g., Horowitz, White, and Atwood 1968; Tulving, Schacter, and Stark 1982). In this procedure, subjects were presented with a string of letters such as “M_____O_____A_____D_____” and required to fill in the blanks to identify the name of the fast-food outlet (McDonald’s). Incomplete fragments of the names of 12 fast-food outlets were listed on a single page (followed by a page for sodas). Subjects were informed that they had three minutes for the task and asked to pace themselves but were told when 30 seconds had elapsed.

**Evaluation.** Subjects were then provided with a list of fast-food outlets (followed by carbonated sodas) and required to rate their liking for these brands on an eight-point (“like very much” to “dislike very much”) scale.

Finally, subjects were asked for some usage information, asked to guess the purpose of the study, and then told its true intent. They were given $2 in lieu of the products promised them during the study.

**Dependent Measures**

Dependent measures consisted of the proportion of subjects choosing and considering the brand and the evaluation rating given to each brand. Brand accessibility was inferred from the proportion of subjects correctly completing the fragment and identifying the brand. It should be noted that the probability of fragment completion is a function of both accessibility and the ease with which a chosen fragment can be completed and, thus, cannot be treated as an absolute measure of accessibility. Comparisons across brands are thus not possible.

**Results**

As before, log-linear models (CATMOD, SAS 1985) were used to analyze the choice, consideration, and accessibility data, while the evaluation data were subjected to ANOVA. First, the data were analyzed to examine whether the order in which the brand choice and consideration tasks were presented affected subjects’ choice and consideration probabilities. Task Order had no differential effect on choice of Swiss Chalet ($X^2 = 1.80, p < .15$), Kentucky Fried ($X^2 = 1.86, p < .15$), and St. Hubert’s ($X^2 = 1.02, p < .30$), or on consideration of Swiss Chalet ($X^2 = 1 < 1$) and Kentucky Fried ($X^2 < 1$). Task Order did have a differential effect on consideration of St. Hubert’s (the Task Order by Brand Prime interaction was significant at $X^2 = 4.97, p < .03$). Thus, probabilities of choice and consideration were unaffected by whether subjects chose first or listed their consideration set prior to choice (except for consideration of St. Hubert’s, which is dealt with separately later). The data were thus collapsed across the two levels of this factor, allowing for a stronger test of the basic hypothesis. Accordingly, Table 3 presents the accessibility, consideration, and choice data for the three brands and the two levels of the Brand Prime factor.

**Brand Accessibility.** The proportion of subjects correctly completing the brand-name fragment is an indicator of brand accessibility in each group. As ex-
pected, priming with St. Hubert’s directly increased its accessibility ($x^2 = 41.61, p < .001$) and indirectly increased the accessibilities of Kentucky Fried ($x^2 = 5.06, p < .02$) and Swiss Chalet ($x^2 = 3.06, p < .08$).\(^7\)

**Brand Choice and Consideration.** Although priming with St. Hubert’s increased the accessibility of all three brands in the chicken places subcategory, only the preferred brand in the subcategory experienced an increase in choice. There was a threefold increase in the probability of choosing Swiss Chalet ($x^2 = 4.57, p < .03$), but no significant increase in the probability of choosing either Kentucky Fried ($x^2 < 1$) or St. Hubert’s ($x^2 < 1$), the less preferred brands in the subcategory (see Table 3). Finally, brand priming had a positive effect on the probability of considering Swiss Chalet ($x^2 = 3.34, p < .07$) and St. Hubert’s ($x^2 = 6.72, p < .01$) but no significant effect on consideration of Kentucky Fried ($x^2 = 1.77, p < .18$). The direct effect of priming on the probability of considering St. Hubert’s was qualified by the Task Order by Brand Prime interaction mentioned earlier. Priming of St. Hubert’s had an effect on brand consideration when subjects were required to list their consideration set first ($x^2 = 5.15, p < .02$) but no effect when this task was preceded by choice ($x^2 < 1$). It is possible that, when brand consideration was the first task given to subjects following priming (of St. Hubert’s), subjects treated the consideration task similarly to the retrieval task, which made the brand-consideration task more susceptible to the effects of priming.

**Brand Evaluation.** As before, brand priming had no effect on evaluation of St. Hubert’s ($F(1,186) = 1.21, p < .27$), Kentucky Fried ($F < 1$), or Swiss Chalet ($F < 1$).

**Demand Effects.** Subjects’ responses to a final question that required them to guess the true purpose of the experiment suggested that demand effects were not driving these results. None of the subjects alluded to the indirect effect of priming one brand on other brands in the category.

**Discussion**

Experiment 2 strengthened the findings of the first experiment and underscored the importance of considering memory factors when brand choice is memory based. Unlike experiment 1, a separate measure of brand accessibility was collected, and subjects were given the consideration and choice tasks in different orders. Further, subjects were required to make an actual choice. Nevertheless, the direct and indirect effects of priming on brand memory and choice remain strong.

Experiment 2 also introduced a new measure of accessibility to consumer research. Researchers in cognitive psychology have recently used the word-fragment completion task to measure the accessibility of concepts in memory, and evidence suggests that this task is particularly sensitive to priming effects (e.g., Bassili and Smith 1986; Tulving et al. 1982). Use of the word-fragment completion task has largely been confined to episodic memory tasks in which concepts have been directly activated prior to the task. The present study is among a few that confirm the efficacy of the fragment completion task for measuring indirect, mediated effects on semantic memory. Finally, this task would appear particularly suited to measuring brand accessibility (as opposed to information accessibility), since the visual image of the brand name in the completed word is most likely to correspond to the representation of the brand in memory.

**GENERAL DISCUSSION**

This article began with the contention that choice researchers had largely ignored a vital component of the choice process—the stage of consideration-set formation prior to evaluation and choice. This view was predicated on the belief that factors other than those traditionally examined could often influence brand consideration and then carry over to affect brand choice. Specifically, it was proposed that when choice is memory based, memory factors could shape brand retrieval and consideration and could affect choice without any changes in brand evaluations.

Brand accessibilities, brand organization in memory, and external brand primes were chosen as examples of factors operating on retrieval from a product category. To examine how these factors influenced memory, simple assumptions were made about the process of category retrieval. A model of retrieval based on these assumptions enabled precise predictions of the nature of priming effects not only on brand retrieval but also, more importantly, on brand choice. To test these predictions, brand accessibility was systematically varied in a number of product classes and effects on brand choice, consideration, retrieval, and evaluation were measured.

Taken together, the results of experiments 1 and 2 provide substantial evidence that brand choice has been significantly altered outside the traditional evaluation-based route, through variation in the retrieval and consideration of brands. When brand consideration was examined separately, some unique findings emerged. (1) External cues had separate and different effects on brand consideration and evaluation. (2) Probability of brand choice was a function not only of brand evaluation, but also of the accessibilities of the brand and its subcategory. More generally, brand-

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\(^7\)Since brand evaluations for Swiss Chalet were slightly higher in the control group, they were used as a covariate when evaluating the effects of priming on accessibility, choice, and consideration of Swiss Chalet.
choice probabilities will depend on the brand's link to any cues used to access brands in a purchase situation. (3) Cues intended to increase the accessibility of one brand had indirect and positive effects on the choice of favored competitors. Before the implications of these findings are discussed in further detail, it is necessary to point out some limitations of these studies.

Limitations

This research demonstrated that in order to anticipate the effects of external brand primes on choice probabilities, it is necessary to have a detailed understanding of both retrieval processes and the organization of brands in memory. As with most experimental designs, strict controls were maintained on the stimuli and manipulations used in the studies. To facilitate prediction and measurement of retrieval effects and to obtain unanimity within subjects, structured and familiar product categories served as stimuli. Similar memory processes are likely in other product classes, but the empirical effects of brand primes may be difficult to anticipate in categories for which memory organization and preference are heterogeneous across consumers.

A second limitation is that the analysis was restricted to choice situations in which brands were retrieved from memory. Fazio, Powell, and Williams (1989) recently reported evidence suggesting that the differential effects of accessibility could also extend to stimulus-based choice situations. In their study, physical salience of brands was shown to affect stimulus-based brand choice (presumably by affecting inclusion in the consideration set) when brand attitudes were relatively inaccessible but not when they were accessible.

Implications and Future Research

Hauser (1978) used an information-theoretic measure of uncertainty to show that his relevant set/response model of the evoked set was able to account for as much as 78 percent of the explainable uncertainty in purchase data, while only 22 percent was explained by data on preference within the set. The present studies highlight the significance of this phase prior to brand evaluation, where a set of alternatives is brought to mind and considered for further processing. The framework proposed in this article distinguishes between the separate roles of brand consideration and brand evaluation in any choice process. In so doing, it provides conceptual and empirical support for research that attempts to incorporate consumer choice sets into the brand choice process (e.g., Hauser and Wernerfelt 1990; Silk and Urban 1978). However, it suggests that successful incorporation requires a closer examination of the dynamic nature of consideration set formation. This general framework is applicable to many aspects of consumer behavior, wherever consumers are believed to access and then evaluate items prior to a final decision.

The impact of most external influences on brand choice have been interpreted chiefly in terms of effects on brand evaluations. For instance, the usage situation is believed to affect choice by altering the weights assigned to different attributes within a multiattribute framework (see, e.g., Miller and Ginter 1979; Srivastava, Shocker, and Day 1978). In a similar vein, consumer promotions are often thought to work through their effect on the utility attached to the promoted brand (see, e.g., Cotton and Babb 1978; Thaler 1983). The results of these studies highlight the possibility that these factors may have important and quite separate influences at the brand-consideration stage. For instance, each usage situation may provide certain cues that bring situation-specific sets of brands to mind. Or consumer promotions may work through increasing the accessibility of a brand, causing it to be included in a consumer's consideration set on a specific occasion. These are just two of many examples of external influences that could be re-examined under this framework.

Finally, since membership in a choice set has historically been predicated on awareness (see, e.g., Howard and Sheth 1969; Narayana and Markin 1975), researchers have failed to realize the dynamic nature of the brand-consideration process. It is rare for advertising research to consider the possibility that advertising for one brand could increase retrieval and choice of a competitor, while having no noticeable effect on choice of the advertised brand. Yet, as both studies indicated, such competitive effects are not unlikely. In general, this research suggests that the brands that will benefit the most from awareness advertising, both their own and that of highly similar competitors, are the leading brands in minor subcategories.

In conclusion, this article suggests an alternative perspective on the brand choice process. Further, it offers a simple framework whereby formation of the consideration set can be incorporated into a more comprehensive picture of choice.

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REFERENCES


RECALL AND CONSIDERATION SETS

Spontaneity of Trait Attribution: Converging Evidence
for the Role of Cognitive Strategy,” Journal of Person-
ality and Social Psychology, 50 (2), 239–245.
Belk, Russell W. (1975), “Situational Variables and Con-
sumer Behavior,” Journal of Consumer Research, 2
(December), 157–164.
Biehal, Gabriel and Dipankar Chakravarti (1986), “Con-
sumers’ Use of Memory and External Information in
Choice: Macro and Micro Perspectives.” Journal of
Consumer Research, 12 (March), 382–405.
of Advertising on Attitude Accessibility, Attitude Con-
fidence, and the Attitude-Behavior Relationship,”
Journal of Consumer Research, 16 (December), 269–
279.
Bishop, Yvonne M.M., S.E. Fienberg, and P.W. Holland
(1975), Discrete Multivariate Analysis: Theory and
Practice. Cambridge, MA: MIT Press.
and Determinants of Its Magnitude in Brand Choice
Behavior,” unpublished dissertation, Joint Committee
on Graduate Instruction, Columbia University, New
York, NY 10027.
Collins, Allan M. and Elizabeth F. Loftus (1975), “A
Spreading-Activation Theory of Semantic Processing,”
Psychological Review, 82 (November), 407–428.
Cottone, B.C. and Emerson M. Babb (1978), “Consumer Re-
sponses to Promotional Deals,” Journal of Marketing,
42 (July), 109–113.
(1982), “Attitude Accessibility, Attitude-Behavior
Consistency, and the Strength of the Object-Evaluation
Association,” Journal of Experimental Social Psychol-
ogy, 18 (4), 339–357.
———, Martha C. Powell, and Carol J. Williams (1989),
“The Role of Attitude Accessibility in the Attitude-to-
Behavior Process,” Journal of Consumer Research, 16
(December), 280–288.
Representations of Associative Memory Structures,” in
Memory Organization and Structure, ed. C.R. Puff, New
Gruenewald, Paul J. and Gregory R. Lockehead (1980), The
Free Recall of Category Examples,” Journal of Exper-
imental Psychology: Human Learning and Memory, 6
(May), 225–240.
and Significance of Probabilistic Choice Models: An In-
formation Theoretic Approach,” Operations Research,
Sales of a New Consumer Durable,” in Advances and
Practices of Marketing Science, ed. Fred S. Zufry-
den, Providence, RI: Institute of Management Sciences,
115–128.
Hauser, John R. and Birger Wernerfelt (1990), “An Eval-
uation Cost Model of Consideration Sets,” Journal of
Consumer Research, 16 (March), 393–408.
Horowitz, Leonard M., Margaret A. White, and Douglas W.
Atwood (1968), “Word Fragments as Aids to Recall:
The Organization of a Word,” Journal of Experimental
Psychology, 76 (February), 219–226.
Howard, John A. and Jagdish N. Sheth (1969), The Theory
of Buyer Behavior, New York: Wiley.
Decision Making for a Common Repeat Purchase
Product,” Journal of Consumer Research, 11 (Decem-
ber), 822–829.
of Free Recall,” in Advances in Consumer Research.
Vol 10, ed. Richard P. Bagozzi and Alice M. Tybout,
Ann Arbor, MI: Association for Consumer Research,
585–589.
Kahneman, Daniel and Dale T. Miller (1986), “Norm The-
ory; Comparing Reality to Its Alternatives,” Psycho-
Kintsch, Walter and Sheryl R. Young (1984), “Selective Re-
call of Decision-Relevant Information from Texts,”
Memory and Cognition, 12 (March), 112–117.
LaVigne, Robert J. and Gary A. Steiner (1961), “A Model
for Predictive Measurements of Advertising Effective-
ness,” Journal of Marketing, 25 (October), 59–62.
Influence in Interpersonal Behavior,” in Advances in
Consumer Research. Vol. 2, ed. M.J. Schlinger, Chicago:
Association for Consumer Research, 370–378.
Lynch, John G., Jr., Howard Marmorstein, and Michael F.
Weigold (1988), “Choices from Sets Including Remem-
bered Brands: Use of Recalled Attributes and Prior
Overall Evaluations,” Journal of Consumer Research,
15 (September), 169–184.
——— and Thomas Srull (1982), “Memory and Attentional
Factors in Consumer Choice: Concepts and Research
Methods,” Journal of Consumer Research, 9 (June), 18–
37.
Model of Variety-seeking Behavior,” Journal of Con-
sumer Research, 9 (September), 141–150.
McKoon, Gail and Roger Ratcliff (1986), “Automatic Ac-
tivation of Episodic Information in a Semantic Memory
Task,” Journal of Experimental Psychology: Learning,
“Relationships among Goodness-of-Example, Category
Norms, and Word Frequency,” Bulletin of the Psycho-
nomic Society, 7 (2), 283–294.
Miller Kenneth E. and James L. Ginter (1979), “An Inves-
tigation of Situational-Variance in Product Choice Be-
havior and Attitude,” Journal of Marketing Research,
16 (February), 111–123.
Narayana, L.L. and R.T. Markin (1975), “Consumer Be-
havior and Product Performance: An Alternative Con-
ceptualization,” Journal of Marketing, 39 (October),
1–6.
Nedungadi, Prakash (1990), “Test of a Model of Brand Re-
treival,” working paper, Faculty of Management, Uni-
versity of Toronto, Ontario MSS 1V4, Canada.
——— and J. Wesley Hutchinson (1985), “The Prototypi-
cality of Brands: Relationships with Brand Awareness,
Preference and Usage,” in Advances in Consumer Re-
search, Vol. 12, ed. Elizabeth C. Hirschman and Morris
B. Holbrook. Provo, UT: Association for Consumer
Research, 498–503.


