TEMPORAL INSTABILITY IN THE SALIENCE OF BEHAVIORAL INTENTION PREDICTORS

David MAZURSKY *

The Hebrew University of Jerusalem, Israel

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Behavioral intentions are sometimes formed immediately after learning about the unique characteristics of an object (or person). In other instances, the need to form a decision is invoked only after a delay interval. In the present article it is hypothesized that differential modes of information processing underlie intention formation and resultant behavioral decisions as the time gap between initial exposure to the information and intention formation widens. In immediate intention measurement, specific object attribute beliefs exert a strong impact while the impact of beliefs about related knowledge is weak. This relative impact changes as a function of the time gap between exposure and intention formation. A theoretical discussion and application in product purchase decisions accompanied by two studies testing the underlying mechanism are provided.

Behavioral decisions are sometimes based on information extracted and processed during, or immediately after exposure to a stimulus object or person. Such decisions may involve, for example, an on-the-spot decision to order an item from a mail order catalog or videotex, or to purchase an exotic fruit seen in a store. In other instances, behavioral intentions are withheld and formed only after some time has elapsed from the first encounter with the object. This may occur, for example, if the need to possess and consume a product emerges only some time after the exposure. In the latter case, the product purchase intention is based on information acquired in the past and accessed from memory during the formation of the decision. In past research,

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Author's address. D. Mazursky, School of Business Administration, The Hebrew University, Mount Scopus, Jerusalem 91905, Israel.
several models have been offered to identify and isolate the factors associated with intention and predictors of behavioral intentions. The question that arises and forms the focus of the present study is whether the predictors of behavioral intentions remain invariant and stable over time.

The theory of reasoned action (see Fishbein and Ajzen (1975) and Ajzen and Fishbein (1980) for a general discussion, and Miniard and Cohen (1979, 1981, 1983) for marketing applications) which is perhaps the most established framework to date in accounting for the formation of behavioral intention as based on beliefs and normative antecedents, offers only little in addressing this issue. In general, it explains the limited correspondence between intention and behavior by the possible intervention of external factors (such as income consideration and exposure to unemployment reports, Warshaw 1980; Ajzen and Madden 1986) or the effects of direct prior experience rather than by temporal change in beliefs and product judgment. In its relation to various decision processes, therefore, this framework has been criticized for its static orientation (Meyer 1987).

The stability of cognitive predictors over time has been investigated more systematically in memory research and in studies on the relationship between cognitive responses and attitudes. Beyond the fundamental notion that information is forgotten over time, recent research distinguishes between different patterns of forgetting as a function of different types of information (Lingle and Ostrom 1979; Wyer et al. 1984; Kintsch and Van Dijk 1978). It has been suggested that the stability of cognitions over time varies according to their position along a continuum of specificity/abstractness.

According to a scheme offered by Chattopadhyay and Alba (1988; for other versions see Carlson 1980; Kardes 1986), the most specific information (i.e. lowest level of abstractness) such as factual details about the object (e.g. ‘turbocharged’ for a new car) determines attribute-based judgments. Higher order abstractions consist of simplified interpretations of facts and inferences or judgments that summarize multiple facts (e.g. ‘economical’). Global evaluations which are not specific to particular features of the object (e.g. ‘Worth considering’) appear at the upper end of this continuum. Different versions of the scheme have been proposed, most of them predicting that high level abstractions are more memorable than specific traits or attribute-based judgments, and that the advantage of memorability is its greater effect
on subsequent judgments and choice decisions. Though context effects are taken into consideration, the scheme bears mainly on information acquired about a specific brand (e.g. a particular car model).

Thus, \textit{general object class knowledge} is distinguished from \textit{specific object attribute} information by level of specificity/abstractness. General object class knowledge is generally more abstract as it does not require specific knowledge about the target object. It reflects beliefs and attitudes about individual objects within the category and about the category as a whole (Keller 1987). Such knowledge may derive from the consumer's personal experience or from normative social influence (Ajzen and Fishbein 1980). In contrast, specific object attribute information is typically more concrete as it consists of interpretations and inferences that derive directly from factual details about the object.

Thus, in considering this model in the context of product purchase behavior, it would appear that the relative impact of specific brand attribute judgments and that of general product class judgments in predicting intentions is likely to vary as time passes between brand trial (and initial judgments about its characteristics) and the point in time when intentions are formed.

When intention is formed immediately after trial, brand information is specific, concrete and vivid (Nisbett and Ross 1980) and consists of direct, firsthand information (Fazio and Zanna 1981). In such instances, brand attribute information, more recently activated than general product class information (Hannah and Sternthal 1984) is more likely to be present in short-term memory. When information relevant to the processing objective (e.g. intention) is required, the content of short-term memory is searched first (Wyer and Srull 1986). Wyer and Srull suggest that 'No more information is retrieved for use in attaining a processing objective than is sufficient to allow the objective to be attained. When this minimal amount has been retrieved, the search terminates' (1986: 331). According to this heuristic, specific brand attribute information should have a strong impact on intentions formed immediately after trial.

In contrast, since general product class judgments are not based on direct experience with the target brand itself, they are relatively pallid and poorly defined in respect of the tried brand (Tybout and Scott 1983). Hence, consumers rely on readily available judgments drawn from general product class knowledge and prefer them over 'computation' of a judgment based on individual attributes (see the 'lazy
organism’ view of information processing, Lichtenstein and Srull 1985; McGuire 1968). However, given the superior relative accessibility of brand attribute knowledge in immediate intention conditions, such a ‘judgment referral’ strategy is less likely to predominate and guide the formation of intentions. Thus, general product class knowledge exerts a relatively weak effect on intentions when these are formed immediately after trial.

Quite a different mode of processing underlies intentions if they are formed after a delay interval. As indicated earlier, specific details that underlie brand attribute inferences tend to be forgotten more rapidly. In such instances specific brand attribute information was not recently activated and, in the absence of such factual knowledge, specific brand attribute inferences may be less predictive of choices and result in erroneous choices (Chattopadhyay and Alba 1987). It has also been suggested that the assessment of these inferences vis-à-vis more abstract knowledge (e.g. general product class judgments) may result in the consolidation of the entire assembly of the relevant information (Fazio et al. 1982) with the more abstract knowledge becoming dominant in forming choice decisions.

It is therefore hypothesized that the impact of general product class judgments will increase while that of specific brand attribute judgments will decay as time elapses between the trial of a new brand and the measurement of intention. Study 1 was designed to test the major hypothesis outlined above. Study 2 extends this view by inducing subjects in one condition to consolidate all of the available information during the initial encoding stage. It was expected that compared to the ‘no consolidation’ condition, intention levels would be less sensitive to delay differences and measurement timing.

Study 1

In study 1, respondents’ judgments based on general product class knowledge were measured before the product was tried. Immediately after trial, specific brand attribute judgments and the dependent measures (intention to purchase and other global judgments), were obtained. The relative salience of the predictors was subsequently compared with salience based on judgments made in delayed measurement (both in within-subject and between-subject comparisons). In line with
the hypothesis, it was predicted that the relative explanatory power of brand attribute judgments would decrease and that of general product knowledge would increase in comparing intentions measured immediately after trial and those measured after a delay interval.

Method

Subjects
The sample consisted of one hundred and ninety-nine adults. One hundred respondents were included in the within-subject comparison and the remaining ninety-nine respondents participated in the delay condition only for between-subject comparison. Two questionnaires were administered, in respondents’ homes. Because the study entailed a two-week interval between visits, an attempt was made to minimize the opportunity for word of mouth communication among participants. Accordingly, only one person per household was interviewed.

Stimulus
The product selected for the study was a new portable electronic anti-theft alarm. This product was chosen for the study for several reasons: firstly, the device is portable and therefore easily carried to the respondents’ homes. This was important as the delayed measurement was conducted in the same environment as the immediate measurement. Thus, the potential intervention of environmental factors was minimized. Secondly, the performance of such a product is not subject to as many performance considerations as many other products (e.g. cars). The relative simplicity of the task facilitated the assumption of uniform interpretation (though not necessarily evaluation) of performance by respondents. Thirdly, the potential market for this product is not limited to unique segments within the population. In fact, except for a few cases, all respondents showed an interest in the demonstration and the trial task and cooperated in the delayed measurements. Finally, the researchers were able to obtain a brand which had not yet

1 In study 1 subjects were not assigned randomly to the ‘immediate’ and ‘delay’ conditions. Comparability was assumed based on similar levels of usage rates obtained for the two conditions. In two questions inquiring about whether they possess alarms in their homes and in their cars, no significant differences were observed. It should also be noted that no significant differences were observed on these usage measures between the participants and the remainder one hundred and twenty consumers initially interviewed in each of the two conditions.
been introduced in the tested region. (The study was conducted several weeks before the brand was launched in that region for commercial distribution.) This eliminated possible confoundings due to brand familiarity.

**Procedure**

The declared objective of the first task was to learn about consumers' opinions and beliefs concerning alarms. All respondents were handed a questionnaire in which they were first asked to indicate their agreement (or disagreement) with ten statements pertaining to general product class knowledge (i.e. product class and normative beliefs, see below). The subjects were then told that they would be participating in a marketing research project for a new product and were handed the package bearing the brand name, a picture of the product and a description of the product's characteristics. Subsequently, they were asked to try the product.

The device, which was relatively small in size (roughly two by three inches), was turned on and put in a briefcase. The moment the briefcase was moved, the device would let off a 98 decibel alarm. The last section of the questionnaire (in that session) was administered following product trial. This section listed nine brand attribute judgments (e.g. reliability, mobility, safety, perceived newness, usefulness), rated on seven-point scales, and three judgments about future intention regarding the product. The first question inquiring about intention asked: 'If this device were offered for sale, would you buy it?'. The next question pertained to inclination to recommend the product to friends. The final question was anchored by the product's price (which, in fact, was the true retail price). It stated that the company was contemplating the price of $25, and asked whether the respondent would buy it for that price (i.e. 'worth'). Responses to the three questions were based on seven-point scales (with 1 anchored by 'Certainly Not' and 7 by 'Certainly Yes'). Upon completion of the questionnaire the respondents were debriefed. They were not forewarned about a possible revisit in the future.

Two weeks later, the respondents were visited again (for the within-subject comparison). In delayed measurement, the same set of variables as in the immediate measurement was obtained without repeating the exposure to the package and the trial task.
Members of the other group (i.e. those in the ‘delay-only’ recruited for the between-subject comparison) were exposed to and tried the brand in the first session and also asked several filler questions. All the relevant judgments (general product knowledge, brand attribute and intention measures) were collected in the delayed measurement.

**Analysis and Results**

Two factors pertaining to general product knowledge were identified. The first factor comprised of three measures (‘Alarm devices are sufficient to deter thieves’, ‘Automobile alarm devices do not prevent burglary’, ‘Alarm devices make me feel safer’) and was labelled ‘Product-Class Beliefs’. The second factor contained normative (both personal and social) beliefs (‘Almost all the people I know advocate the use of alarm devices’, ‘Members of my family advocate the use of an alarm system in our home’, ‘An alarm device should be installed in every house/apartment’) and was therefore labelled ‘Normative Beliefs’. An index for the two factors was obtained by averaging scores on each item. (Alpha = 0.64 and 0.68 for the two factors, respectively). Similarly, the brand attribute judgments yielded a single factor (Alpha = 0.82) and an index was produced using the same procedure.

A regression analysis with the two factors of general product knowledge and brand attribute judgments as predictors was performed four times: in each of the first three analyses, one of the measures of future behavioral intention served as the dependent measure and in the fourth run, an aggregate measure of intention was used as the dependent variable. The results of the regression analyses in the two groups are presented in tables 1 and 2.

Table 1 summarizes the means of the analyzed measures. A series of comparisons between the immediate and delayed conditions was conducted (using between-group and paired sample t-tests). In both com-

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2 The data were first factor analyzed to enable the detection of key factors for subsequent analysis. A varimax rotation revealed that the dimensionality of general product knowledge could be best represented by two main factors (with eigenvalues exceeding 1.00).

3 Although the three dependent measures were highly intercorrelated (Alpha = 0.94), they are reported both individually and as an aggregate because in some previous studies (e.g., Mazursky and Schul, 1988) worth and intentions were not always conceptualized as pertaining to the same factor.
<table>
<thead>
<tr>
<th>Table 1</th>
<th>Brand attribute-specific, product knowledge and future behavioral intention ratings: study 1.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Brand attribute judgments</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Means</strong> (SD)</td>
</tr>
<tr>
<td><strong>Immediate</strong></td>
<td>4.29 (1.46)</td>
</tr>
<tr>
<td>Delay (between subjects)</td>
<td>4.12 (1.22)</td>
</tr>
<tr>
<td>Delay (within subjects)</td>
<td>4.03 *c (1.28)</td>
</tr>
<tr>
<td><strong>Intention</strong></td>
<td><strong>Means</strong> (SD)</td>
</tr>
<tr>
<td>Immediate</td>
<td>3.26 (2.04)</td>
</tr>
<tr>
<td>Delay (between subjects)</td>
<td>2.87 a (1.59)</td>
</tr>
<tr>
<td>Delay (within subjects)</td>
<td>2.66 a (1.51)</td>
</tr>
</tbody>
</table>

*a* Differences from the 'immediate' judgments. Sig. at *p* *<* 0.05 level.

*b* Differences from the 'immediate' judgments. Sig. at *p* *<* 0.06 level.

*c* Differences from the 'immediate' judgments. Sig. at *p* *<* 0.01 level.

Comparisons brand attribute judgments became less positive over time although this trend was statistically significant only in the within-subject comparison. A similar pattern was observed in respect of the future behavioral intention measures. In contrast, in both comparisons the general product knowledge factors remained unchanged over the delay interval.

Table 2 presents the regression models obtained in an analysis that directly assessed the major hypotheses. In immediate judgments, brand attribute judgments were shown to be a salient predictor. In this condition, product class beliefs did not predict any of the future behavioral intention measures and normative beliefs contributed only moderately to intention formation.

However, the explanatory power of brand attribute judgments decreased over time. This pattern was consistent across the two comparari-
Table 2
The relative explanatory power of brand attribute judgments versus product knowledge factors: study 1.

<table>
<thead>
<tr>
<th></th>
<th>Brand attribute judgments</th>
<th>Product class beliefs</th>
<th>Normative beliefs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Int.</td>
<td>0.51 ^b</td>
<td>0.11</td>
<td>0.30 ^a</td>
</tr>
<tr>
<td>Recomm.</td>
<td>0.60 ^b</td>
<td>0.01</td>
<td>0.29 ^b</td>
</tr>
<tr>
<td>Worth</td>
<td>0.44 ^b</td>
<td>0.03</td>
<td>0.44 ^b</td>
</tr>
<tr>
<td>Aggreg.</td>
<td>0.56 ^b</td>
<td>0.05</td>
<td>0.37 ^b</td>
</tr>
<tr>
<td>Delay (between subjects)</td>
<td>0.33 ^b</td>
<td>0.20 ^a</td>
<td>0.42 ^b</td>
</tr>
<tr>
<td>Int.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recomm.</td>
<td>0.50 ^b</td>
<td>0.16 ^a</td>
<td>0.33 ^b</td>
</tr>
<tr>
<td>Worth</td>
<td>0.35 ^b</td>
<td>0.26 ^b</td>
<td>0.37 ^b</td>
</tr>
<tr>
<td>Aggreg.</td>
<td>0.42 ^b</td>
<td>0.22 ^b</td>
<td>0.39 ^b</td>
</tr>
<tr>
<td>Delay (within subjects)</td>
<td>0.23 ^a</td>
<td>0.09</td>
<td>0.57 ^b</td>
</tr>
<tr>
<td>Int.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recomm.</td>
<td>0.50 ^b</td>
<td>0.24 ^b</td>
<td>0.37 ^b</td>
</tr>
<tr>
<td>Worth</td>
<td>0.27</td>
<td>0.07</td>
<td>0.58 ^b</td>
</tr>
<tr>
<td>Aggreg.</td>
<td>0.31 ^b</td>
<td>0.14</td>
<td>0.53 ^b</td>
</tr>
</tbody>
</table>

^a Sig. at p < 0.05 levels.
^b Sig. at p < 0.01 level.

...
interactions effects. In this analysis, the delay factor was significant \( (F(1, 191) = 7.33, \ p < 0.01) \). In addition, the significant delay \( X \) normative beliefs effect showed a positive relative change over time \( (F(1, 191) = 4.35, \ p < 0.04) \), while the marginally significant delay \( X \) brand attribute belief effect \( (F(1, 191) = 3.53, \ p < 0.06) \) showed a change in the opposite direction.

A test for comparing the coefficients in the within-subject design was carried out by employing a repeated measures with varying covariates analysis (Winer 1971). The findings of this analysis were consistent with those obtained in the previous analysis: both the brand attribute index and the normative beliefs factor were significant when their variation over the two measurements was accounted for \( (F(1, 96) = 5.92, \ p < 0.02 \) and \( F(1, 96) = 3.74, \ p < 0.05 \) for the two factors, respectively) while the product class belief factor was non-significant \( (F(1, 96) < 1) \).

Discussion

The findings of study 1 indicate that different types of information are likely to underlie future behavioral intentions as time elapses between brand trial and measurement of intentions: when intentions are formed immediately after trial, consumers tend to 'compute' and rely more on brand attribute judgments that are extracted from the stimulus product and processed during (or immediately after) trying the brand. Conversely, if intentions are formed after a delay interval, the impact of brand attribute knowledge diminishes, and general product knowledge becomes an increasingly more salient source in guiding future behavioral decisions. Thus, levels of intention are sensitive to the time of measurement and reflect relative change in reliance on the type of knowledge.

According to the above reasoning, the temporal change in processing modes employed by consumers and the resulting sensitivity of intention to measurement delay should be attenuated if the accessibility of relevant general product knowledge is enhanced during the initial encoding of brand information. Study 2 was designed to account for the variation in accessibility of general product knowledge at the encoding stage and the differential effects of such variation on immediate and delayed judgments.
It has been suggested (Fazio et al. 1982) that such variation in accessibility may be obtained if individuals consolidate their thoughts concerning brand, as well as general product information, prior to making initial global judgments (such as the immediate intentions judgments in the present study). Accordingly, if consumers elicit general product evaluations while encoding brand information, this knowledge should be more accessible in subsequent brand judgments.

Two conditions are presented in study 2: in the first condition, subjects were induced to make general product judgments on the spot, in the context of brand information acquisition. About half of the subjects were informed at the outset of the experiment, just before they made general product judgments, that they would eventually be asked to indicate their intentions with regard to buying the product. This condition was therefore termed consolidation. The second condition (no consolidation) was a version of the one utilized in study 1: namely, subjects were not informed specifically about the product trial task at the time of making general product knowledge judgments. Obviously, general product knowledge was expected to be accessible in intention judgments in the 'no-consolidation' condition given the similar domains. However, this accessibility was expected to be lower than in the consolidation condition. Since the impact of general product knowledge (which is likely to remain stable over time) on intention was expected to undermine brand attribute information effects already in immediate measurement, the temporal change in indicated intentions was expected to be smaller in the consolidation condition than in no-consolidation condition.

Study 2

Method

Subjects

Seventy students enrolled in an introductory marketing course participated in the study. Subjects were interviewed individually, in two

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4 Study 2 modified the methodology used to measure effects. In study 1, general product knowledge variables were collected prior to trial in 'immediate' measurement while for 'delayed' measurement, general product knowledge was collected after product trial. In study 2, all the predictors were measured in the same order, the only difference between the two conditions being timing of intention measurement, thus representing a conservative test of the hypotheses.
consecutive sessions, with the midterm intersession separating the immediate and delayed measurement in order to minimize communication among participants.

**Stimulus**

The stimulus product used in study 2 was a new 'portable office' - a small device (roughly two by five inches) which combines nine miniature desk tools in one unit: a stapler, staple remover, carton opener, scissors, retractable tape measure, magnifying lens, tape dispenser, hole punch, and storage compartment. The criteria for selecting the product were similar to those employed in study 1 with one exception: The 'portable office' was already available in a few selected stores at the time of the study. Appropriate measures were taken to assure that subjects were not aware of the product and to verify that no additional information about the product was acquired between the two measurements (see below).

**Design**

Study 2 consisted of four between-subject conditions. The conditions were created by crossing a consolidation manipulation (consolidation versus no consolidation) with the time of intention measurement (immediate versus delayed measurement).

**Procedure**

Subjects were handed a questionnaire consisting of judgments about the subjects' general product knowledge. The relative accessibility of input knowledge was varied by presenting different versions of the introduction to the questionnaire: subjects assigned to the consolidation condition were informed that as part of a marketing research project, they would be trying a new product that combines various desk accessories in one unit. It was stated that this kind of product follows the recent trend toward combining related functions in one product (such as combination TV/AM/FM/Clock or combination can/bottle openers). Finally, these subjects were told that after trying the prod-

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5 A pretest indicated that combination products represent the most important context defining the product domain on which subjects rely when forming judgments about this stimulus product. Other beliefs, including those about single function products (e.g. staplers), were found to be far less relevant and predictive.
uct, they would be asked several questions about their inclination to buy it.

Subjects assigned to the 'no-consolidation' condition received a version stating that the purpose of the questionnaire was to obtain their judgments about various combination products (giving the same examples as in the previous version). These subjects were not informed at this stage about the forthcoming (trial) task and the focal judgments they would be expected to indicate later. Information about the 'marketing research project' was conveyed only upon completion of this section.

The pre-trial questionnaire consisted of eight judgments, all bearing on combination products, rated on five-point Likert Scales. Some of the statements pertained to product class beliefs (e.g. reliability, performance, convenience, durability, ease of repair) while others pertained to normative beliefs (e.g. 'People I like are typically excited about buying these products' and 'The possession of such products is not considered a "plus" among the people I like'). After responding to these items, subjects were asked several questions inquiring about their familiarity with such products. 6

All the respondents were subsequently handed the 'portable office' along with a clipping which showed a picture of the product, its price, and a short message describing its features and advocating its purchase. They were then asked to examine the product and test its different functions (for up to three minutes). Subsequently, subjects were asked to make five brand attribute judgments about the product they had examined (ease of operation, efficiency, practicality, usage convenience, usefulness and reliability) as well as a global attitudinal judgment.

Part of the subjects were dismissed after this task (i.e. the delay condition). The remainder (the 'immediate' condition) were asked, at this stage, to indicate their intention to purchase the product and their inclination to recommend it to others. Finally, they were asked to recall

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6 Subjects were shown a list of combination products and asked to indicate which of them they currently possess, or have previously possessed, tried or considered buying. For each product marked as familiar, they were asked to indicate the number of brands they know and the price range of the considered brands. The latter two items were used to assess level of familiarity. Three measures of familiarity were constructed: (1) the number of products marked as familiar, (2) the number of products for which at least one brand was mentioned, and (3) the number of products for which a price range was listed. These variables were not significant when inserted as covariates in the relevant analyses below.
Table 3
Brand attribute, product knowledge and future behavioral intention ratings: study 2.

<table>
<thead>
<tr>
<th></th>
<th>Brand attribute judgments</th>
<th>Product knowledge judgments</th>
<th>Intention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>No consolidation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immediate</td>
<td>4.14 (0.60)</td>
<td>3.09 (0.35)</td>
<td>3.50 (0.98)</td>
</tr>
<tr>
<td>Delay</td>
<td>4.18 (0.46)</td>
<td>2.94 (0.52)</td>
<td>2.59 (1.20)</td>
</tr>
<tr>
<td>Consolidation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immediate</td>
<td>4.22 (0.45)</td>
<td>2.90 (0.38)</td>
<td>2.74 (1.24)</td>
</tr>
<tr>
<td>Delay</td>
<td>3.96 (0.52)</td>
<td>2.85 (0.27)</td>
<td>2.30 (0.90)</td>
</tr>
</tbody>
</table>

the information conveyed to them about the product. Upon completion of the questionnaire, they were debriefed.

Ten days later, the subjects assigned to the delay condition were handed a short questionnaire containing the intention measures and the recall task. They were also asked whether they had seen or heard about the product during the delay interval. (Data relating to one participant who had seen and made inquiries about the product during the delay interval were excluded from subsequent analysis.)

Results

Scores on the items pertaining to general product knowledge were averaged to form an index of general product knowledge (Alpha = 0.79). Similarly, an index of brand attribute judgments was computed by averaging scores on the five appropriate judgments (Alpha = 0.75) and a future behavioral intentions index created by averaging scores on the intentions and inclination to recommend the product to others (Alpha 0.88) (see table 3 for the obtained means).

A two-way ANOVA with consolidation status and time of measurement as between-subject factors was performed on these factors. The analysis suggests that the accessibility manipulation did not affect the

7 Identification of subject in the immediate and delay conditions was accomplished by comparing the last four ID digits presented as 'needed for coding purposes'.

8 Alpha tests showed that deletion of individual items did not affect the Alpha levels substantially. They were therefore included as a single factor.
brand attributes factor (the interaction effect, $F(1, 65) = 1.53$, and the main effects, both $F(1, 65) < 1$, were not significant). It also suggests that general product knowledge did not differ systematically across treatments (all $Fs < 1$). The only construct that was sensitive both to the consolidation and the time manipulations was future intentions: future behavioral intentions decayed over time ($F(1, 65) = 6.28$, $p < 0.02$) and were lower when the accessibility of general product knowledge was enhanced. Though the interaction effect was not significant ($F(1, 65) < 1$), an analysis of the simple effects suggests that intentions to buy and recommend the product decreased in the ‘no-consolidation’ condition ($F(1, 65) = 5.75$, $p < 0.02$) but not in the consolidation condition ($F(1, 65) < 1$, n.s.). In addition, intentions were lower (main effect) in the consolidation condition ($F(1, 65) = 3.88$, $p < 0.05$). Note that the non-significant change in the general and specific product judgments does not undermine or conflict with the propositions offered earlier. The decrease in levels of intentions (which approach the level of general product judgments and become distinct from specific judgments) generally supports the proposition. A more systematic analysis is provided in the regression analysis below.

The regression analysis focused subsequently on the relative salience of general product knowledge versus brand attribute judgments as predictors of intentions. The results of this analysis are presented in table 4. These results indicate that enhancing the accessibility of general product knowledge at the time the product is assessed may also affect the relative decay and judgments made after a delay interval. In

<table>
<thead>
<tr>
<th>No consolidation</th>
<th>Brand attribute judgments</th>
<th>Product knowledge judgments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td>0.72 $^b$</td>
<td>-0.20</td>
</tr>
<tr>
<td>Delay</td>
<td>0.30</td>
<td>0.33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consolidation</th>
<th>Brand attribute judgments</th>
<th>Product knowledge judgments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td>0.47 $^b$</td>
<td>0.48 $^b$</td>
</tr>
<tr>
<td>Delay</td>
<td>0.08</td>
<td>0.40 $^a$</td>
</tr>
</tbody>
</table>

$^a$ Sig. at $p < 0.05$ level.

$^b$ Sig. at $p < 0.01$ level.
the 'no-consolidation' condition, especially, the salience of brand attribute information outweighed the impact of general product knowledge on immediate judgments. The relative change of these determinants over time resembles the pattern obtained in study 1. (Note the direction and extent of change in the beta coefficients. These coefficients were not significant in this analysis, though the pattern of change over time approached significance, as indicated in the analysis below.) Moreover, in the consolidation condition, the impact of general product knowledge became substantial (and significant) in immediate judgments, and did not decay over time. In contrast, the relative impact of brand attribute information did decay, in this condition.

These conclusions were generally confirmed when the brand attribute and general product knowledge factors, along with the computed delay factor and the relevant interactions were included simultaneously in two models (one for each of the two consolidation' conditions). In the 'no-consolidation' condition, the delay effect was significant \( (F(1, 28) = 4.32, \ p < 0.05) \), suggesting that the change was primarily due to the increase in impact of general product judgments. The delay X general product knowledge effect was \( F(1, 28) = 3.13, \ p < 0.08 \). The delay X brand attribute effect was not significant in this analysis, \( (F < 1) \). In contrast, in the consolidation condition, the delay factor was only marginally significant \( (F(1, 31) = 3.24, \ p < 0.08) \) suggesting that the change is attributable to the decrease in impact of brand attributes. (The delay X brand attribute effect was \( F(1, 31) = 3.53, \ p < 0.06 \). In the latter analysis, as expected, the impact of general product knowledge remained unchanged, (The delay X general product knowledge effect was not significant \( (F < 1.) \))

**Recall**

The recall data were scored according to a meaning criterion (two judges with 95.1% agreement). Subjects assigned to 'no consolidation'

\(^9\) Another perspective involves assessing the role of attitude. Interestingly, while the correlation between brand attribute beliefs and intentions has decreased over time (a pattern consistent with the foregoing analysis) from \( r = 0.54 \ (p < 0.001) \) in immediate measurement to \( r = 0.24 \ (p = 0.09) \) in delayed measurement, the correlation between attitude and intention remained unchanged despite the increased time gap between measurements \( (r = 0.54, \ p < 0.001 \) and \( r = 0.54, \ p < 0.001 \) in the immediate and delayed measurements, respectively). These results are consistent with the notion that in immediate measurement, subjects engaged in 'computational' processing whereas in delayed measurement a 'retention' model characterized the intention formation process (Lichtenstein and Srull 1987).
immediate measurement condition recalled, on average, 6.11 items versus a mean of 4.06 items recalled by subjects in the delayed condition. Among the subjects assigned to the consolidation condition, the corresponding mean recall was 5.04 (immediate condition) and 3.40 (delayed condition). The difference between recall in the immediate measurement condition and delayed measurement condition was statistically significant ($F(1, 65) = 18.08, p < 0.001$). In addition, the main effect due to the consolidation manipulation was significant ($F(1, 65) = 3.96, p < 0.05$). Finally, a correlational analysis revealed that the correlation between recall and intention decreased from $r = 0.34 (p < 0.02)$ in the immediate measurement condition to $r = 0.07$ (n.s.) in the delayed measurement condition.

These findings shed light on three important aspects of the study. Firstly, they provide a check for the variation of accessibility in the consolidation manipulation suggesting that the accessibility of brand attribute information was undermined by general product knowledge. Secondly, they support the contention that brand attribute information becomes less accessible over time. Thirdly, the impact of this information on intention weakened between the two measurements.

**General discussion**

Much of the theoretical background of the study was derived from memory research, particularly, from studies that used recall and recognition data as main predictors. Much less attention has been devoted in multi-attribute models to the possibility that different modes of processing are employed by consumers who form intentions immediately after trying the product and those who make such decisions only at a later stage. The implications of such research are important since this change occurs without the intervention of external factors between the trial and the formation of buying decisions. The extension of conclusions from the recall-judgment to the multi-attribute context which utilizes beliefs (rather than recall) as inputs is very useful, given the widespread use of these models in the context of consumer research.

The two studies each employing a different product stimulus, showed that immediate judgments are associated with a strong impact of beliefs about the attributes of the brand. In delayed judgments, however, the
relative contribution of the two types of information is altered such that general product knowledge gradually becomes more predictive while the impact of attribute knowledge, diminishes. The differential processing modes, triggered by decision processes that are initiated at different points in time, are not only a useful finding for the understanding of the intention formation process, per se: they also have significant practical implications on the differential likelihood of brand purchase.

In light of the recognition that different modes of processing underlie immediate and delayed intentions, it becomes necessary to identify the conditions under which one processing mode would be more likely to be employed than the other. For example, the processes may vary by 'shopping situation': in the context of telemarketing, for example, consumers are often shown a new brand and prompted to 'order now' since 'supplies are limited'. In this situation, stimulus-based information underlies decisions (consider also the impact of impulse buying in which the consequences of the purchase are underestimated, Rook 1987; and foot-in-the-door salesmanship, Tybout, et al. 1983). In contrast, a decision about buying a country home after returning from a promotion tour may be purely memory-based. And, of course, there is a large variety of 'mixed' judgments in which part of the information is physically present and other relevant information is retrieved from memory (e.g. making a purchase decision in a specific store while attempting, at the same time, to make a comparison with the assortment and prices of other stores visited in the past). Such processes may also vary by the heuristic utilized to arrive at a decision. For example, Lynch and Srull (1982) suggested that conjunctive, disjunctive and lexicographic rules are more relevant to stimulus-based judgments than to memory-based judgments.

Strategically, the marketer can influence the processing mode employed by the consumer in forming a decision. To induce stimulus-based decisions, strategies such as 'foot-in-the-door' and 'in-store promotion' may be useful. In contrast, to induce a memory-based decision, various retrieval cues can be incorporated in advertising communications in advocacy of the product and social normative knowledge (e.g. 'ask anybody' or 'I bought my ... sight unseen', see examples in Aaker and Myers 1987). Clearly, the selection of the appropriate strategy (i.e. inducing stimulus-based or memory-based decisions) involves weighing the benefit to be gained by balancing brand attribute information
versus general product knowledge. If the brand is associated with unfavorable general product knowledge, methods that induce stimulus-based decisions should be employed to improve purchase likelihood. Obviously, reliance on memory-based decisions or enhancing accessibility of general product knowledge would not be useful, under these circumstances. This type of possibility was demonstrated in the present research (particularly in study 2). In contrast, methods inducing stimulus-based decisions are not necessary if the relevant general product knowledge is relatively favorable. Extensive use of retrieval cues in advertising may lead to increased impact of general product knowledge and to more favorable memory-based decisions.

The present article has also suggested that change in the processing modes employed by consumers and the resultant differences in intentions are mediated by the extent to which consumers are induced and able to elicit general product knowledge at the time of initial brand judgment. The more activity consumers engage in eliciting general product knowledge, and rely on it when they are first exposed to the product, the less the likelihood of differences in intentions formed their intentions briefly after trying the new brand and formed only after a delay period. Thus, increased accessibility of and reliance on general product knowledge in immediate judgments is likely to result in intentions that are more stable and resistant to change over time.

References


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