

THE EFFECTS OF TIME DELAYS ON CONSUMERS' USE OF DIFFERENT CRITERIA FOR PRODUCT PURCHASE DECISIONS

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ABSTRACT: Recent research has suggested that time delays might result in consumers' reliance on different sets of criteria in making product purchase decisions. A critical criterion among these factors is consumers' *product category knowledge*. The present study suggests that category knowledge mediates temporally distanced purchase decisions. When product category knowledge is retrieved, it has *no or marginal immediate* influence on consumers' decisions. However, retrieved product category knowledge has a substantial influence on consumers' decisions if these are *delayed*, that is, when decisions are made only after some time had elapsed since the exposure to product information. The function of product category knowledge within the decision predictors is conceptualized and demonstrated empirically. Its significance in the marketing reality which involves numerous decisions that are obtained in delay, is discussed.

Many consumer related decisions are made in delay and not concurrently with the exposure to product information. Recent literature has recognized that the timing of purchase decision may be critical to understanding its formation process. Different factors may be affected by the time in which purchase decisions are formed depending on whether they are made in immediate condition or alternatively, in delay. One of the key factors affected by decision timing consists of product cognitions (e.g., recall, abstractions, and evaluative responses). Several studies focused

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on temporal changes in attitudinal judgments (e.g., Chattopadhyay & Nedungadi 1992), whereas others predicted the impact on measures of purchase intention (e.g., Mazursky 1990).

In addition to product cognitions, the present study examines the role of *product category knowledge* in mediating the difference between immediate and delayed purchase intentions. The conceptual approach developed below and the empirical findings demonstrate that product category information, if retrieved, largely accounts for the difference between immediate and delayed decisions.

A TYPOLOGY OF PRODUCT DECISION PREDICTORS

The criteria that influence decisions may vary over time. Some tend to be forgotten quickly after exposure to product information whereas others might be more stable over time. The present typology posits that the stability of cognitive factors over time varies according to their position along a continuum of specificity/abstractness (Chattopadhyay & Alba 1988; see also Carlson 1990, and Kardes 1986, for other versions of the scheme). We begin this discussion by analyzing responses that emanate specifically from *focal brand information*, that is, information acquired via ads, brand packages or other forms of transmission of brand information or brand experience. The most specific information, such as recall and thoughts regarding factual details, represents the lowest level of abstractness. Higher order abstractions consist of elaborations and inferences that integrate and summarize multiple facts. Finally, responses that are not specific to particular features of the brand (e.g., "worth considering") are placed in the uppermost extreme of the continuum. This typology also enables prediction regarding memorability of responses: High level abstractions are more memorable than specific traits and the advantage of memorability is its stronger effect on subsequent judgments.

Brand judgments are also affected by *product category knowledge* which is accumulated over time and may be elicited during judgment formation. Compared to specific brand information, category knowledge is likely to be more abstract in its position along the specificity/abstractness continuum, because it does not require specific knowledge about the target brand. Category knowledge is derived from the consumer's information acquisition about or personal experience with similar brands or from normative social influences (Keller 1987; Ajzen & Fishbein 1980). Due to the fact that category knowledge includes an assembly of evaluations and inferences used previously in forming judgments, the accessibility of these stored elements is high relative to that of factual details (Wyer, Srull, & Gordon 1984). Thus, as a whole, category knowledge is located among abstract responses on the specificity/abstractness continuum.

DELAY EFFECTS ON BRAND JUDGMENTS

A possible outcome of this typology is that cognitive factors reflecting specific brand information and those reflecting category knowledge, may be unequally sensitive to delay. The discussion below elaborates on the meaning and importance of this time dependent sensitivity.

When judgments are formed *immediately* after brand exposure, brand information is highly accessible (Nisbett and Ross 1980; Fazio & Zanna 1981). Evidence in the marketing context has shown that brand cognitions are significant predictors of judgments (e.g., Chattopadhyay & Alba 1988). Accordingly, cognitions exert an impact on judgments in immediate measurement conditions.

A different processing mode characterizes judgments when these are formed *in delay*. Among the factors affecting memorability, the criterion chosen in various marketing applications was level of abstractness (Chattopadhyay & Alba 1988; Johnson 1984). It has been suggested that different cognitions exhibit different patterns of forgetting whereby specific details are forgotten more rapidly than abstractions. Accordingly, the higher the level of abstraction, the stronger the predictive power of cognitive factors in delay. In addition to the distinction among different brand related facts, inferences and abstractions, a more general distinction has been drawn between specific brand information and normative information (Mazursky 1990). Based on this distinction, specific brand information is predicted to have relatively more impact on immediate judgments while category knowledge has relatively more impact on delayed judgments.

To elaborate, in immediate judgments specific brand information, which is more recently activated (Hannah & Sternthal 1984), is likely to be present in short term memory, and may be sufficient to allow the objective (i.e., the judgment) to be attained (Wyer & Srull 1986). Under immediate judgment condition, specific brand information is more accessible and likely to guide the formation of judgments. Conversely, in delay, consumers might minimize their reliance on factual details because due to forgetting it may not be available for making decisions (Chattopadhyay & Alba 1987). In such instances, the weight of category knowledge may increase and abstractions and inferences may serve as the basis in the consolidation of the entire assembly of relevant information (Fazio et al. 1982) and become dominant in the formation of subsequent judgments.

One hypothesis that stems from this discussion so far relates to the effect of product cognitions when product category knowledge is accessible.

- H1. When category knowledge is accessible, cognitive response predictors will affect intention. Conversely, when category knowledge is inaccessible, cognitive responses will not exert an impact on intention.

In combining the abovementioned effects of the product category accessibility factor and the delay factor it appears that cognitions reflecting accessible brand specific information will have a relatively strong effect on immediate product judgments. In contrast, category knowledge and abstract brand knowledge will have a relatively stronger effect on delayed judgments. These hypothesized effects are formulated below.

H2. Factual information will exert a stronger effect on immediate judgments whereas inferences and abstractions will be more influential in delayed judgments.

All the participants in the present study were exposed to and received information about a re-usable portable heat pack. The manipulation involved “retrieval” or alternatively, “no-retrieval” of category knowledge prior to the exposure to the new brand. Two groups were tested in the retrieval condition. One group made judgments about two competing product categories associated with the specific brand. The first (negatively valenced) category contained products that utilize new, unfamiliar technologies that may be hazardous, and the second (positively valenced) category consisted of more traditional devices fulfilling the same purpose, such as hot-water bottles. This “retrieval” group was therefore labeled “retrieval—inconsistent category knowledge.” The second group, labeled “retrieval—consistent category knowledge,” consisted of participants who made judgments only about the latter category, namely traditional devices such as hot-water bottles. The third (“no retrieval”) group did not make any judgments prior to brand exposure. The category knowledge which was crossed with a delay factor, facilitated the testing of the hypotheses.

The purpose of including two (consistent and inconsistent) retrieval groups rather than one, was to test the patterns of abstraction processes. Under the consistent retrieval condition, a larger number of inferences is likely to be aligned in the direction of those emanating from the elicited category knowledge. Since memory of specific details decays over time, the impact of the consistent and positively valenced category should become more pronounced in delayed judgment. Operationally, the regression coefficients predicting intention will become more positive over time. In contrast, inconsistent categories do not provide the path nor the direction for the generation of inferences that might replace the decayed recall and its impact in delay. Their prediction of intention is therefore less consistent, and may potentially result in contrasting signs. Hence:

H3. Consistent and positively valenced category will prompt a positive influence of the cognitive response predictors on *delayed intentions*.

- H4. Inconsistent categories will prompt a less positive influence (than under H3) of the cognitive response predictors on *delayed intentions*.

METHOD

Stimulus Product

The product chosen for the study was a re-usable portable heat pack. The product was a new introduction in the area. For the purpose of this study, a unit was received before it was actually offered for sale, thereby insuring that the particular stimulus brand was new and unfamiliar to the sampled population.

The selection of this product was motivated primarily by the assumption that a brand of this class may be associated with two product categories that are distinct in their characteristics and that vary in their valence. In-depth interviews preceding the experiment indicated that consumers may associate this product with technology-based pain relieving devices (such as devices that involve the use of chemicals or radiation), which are likely to be perceived as having some (unclear) potential danger. On the other hand, consumers may associate the product with more traditional devices, such as hot-water bottles. In this case, the more common positive reference level may be pertinent to the product.

Subjects and Design. One hundred and fifty adult individuals (age 18 and up) participated individually in the study which was presented to subjects as a market survey. The study was conducted in the participants' homes. To minimize the chance of word-of-mouth communication, only one person per household participated. The data of eleven participants were discarded due to their familiarity with the product (obtained elsewhere), or failure to obtain their responses in the delayed measurement.

A 3×2 factorial design was created by crossing category knowledge retrieval (inconsistent category knowledge retrieval, consistent category knowledge retrieval and no retrieval) with delay (immediate, delay). The cell sizes varied between 23 and 26.

Procedure

Category Knowledge. The first part of the experiment involved the manipulation of category knowledge retrieval. One third of the subjects were first asked to indicate their judgments about technology-based pain relieving devices and traditional heating devices on a five-point Likert type scale. The second group (one third) responded to a series of questions pertaining to the traditional heating device category only. Among the judgments

three—potential hazard, usage occasions and pain relieving effectiveness—were inserted to provide a basis for comparison among the categories and the rest were filler judgments. The third group was not asked to make any judgments pertaining to prior product category knowledge.

Specific Brand Information. In the second part, the brand package of the stimulus product was shown to all the subjects. The brand package contained three categories of information. The first category was labeled “Thousands of Uses” and showed three representative illustrations of uses (physical therapy, ski and fishing). The second category, labeled “How to Use,” conveyed usage instructions as follows: “a) Firmly but gently depress and release “activator button” until it clicks; b) Allow 15 seconds for the heat to spread throughout pack; c) IMPORTANT: Twist and squeeze the pack repeatedly during use to maintain maximum heat.” Finally, the third category provided “How to re-use” instructions. The information was as follows: “a) Wrap (brand x) in cloth OR place a saucer in bottom of a saucepan to protect against direct contact; b) Boil for a minimum of 20 minutes; c) Cool to room temperature before re-using; Can be placed on counter to cool or quickly cooled by cold water.” It should be noted that while several items of information positively advocated the purchase of the brand, others (including a warning note “Do Not Microwave”) constituted, or at least implied, inferences that might have been evaluatively inconsistent with the main advocacy.

Dependent Measures. In the last part of the experiment, subjects were asked to make three attitudinal judgments (1—“not enjoyable” to 5—“enjoyable,” 1—“not pleasant” to 5—“pleasant,” and 1—“not interesting” to 5—“interesting.” A composite index was generated ($\text{Alpha} = .70$) by averaging these judgments to create a summative attitudinal index. Following the attitudinal measures, an intention measure was obtained by asking participants about the likelihood of their ordering a unit (1—“certainly yes” to 5—“certainly not”).

Following the judgments participants were asked to recall all the information that they had received about that product. Content analysis was performed on the data to distinguish between mention of factual information from the conveyed brand information and inferences stemming from that information. The content analysis was conducted by three experienced research assistants. Finally, a cognitive response task was administered in which participants were asked to list all their thoughts concerning this brand. Responses then underwent content analysis to separate factual details from abstractions (including evaluative responses). A 91% agreement rate was reached in the content analysis of the recall and the cognitive responses. Disagreement in the remaining cases was resolved by discussion.

It should be noted that unlike some earlier applications (e.g., Chatto-

padhyay and Alba 1988), the present cognitive response measurement did not involve assignment of the responses into positive or negative valence categories. The present application appears more robust in light of the shortcomings of the former method in studies involving delayed measurement. Assigning the evaluative implication in delay may be particularly uncertain because of sequence of causality issue; Does the evaluation of a cognitive response precede (and thus predict) product judgments or is it derived from such judgments. Since the present study focuses on the effects of category knowledge and its function in consolidating cognitions, such method would suffer from causality uncertainties. Furthermore, valence appears to be associated with enhanced memory (Meyer 1987) and it was found to be particularly prominent in the context of delayed measurement (Ganzach and Mazursky 1995).

Delay. The delay manipulation was implemented between subjects. About half of the participants were asked to make product judgments immediately after obtaining the information and the other half did so after a delay interval. About 75% of the participants in the delay condition were revisited exactly 14 days after the first session and the remainder were revisited within fifteen to nineteen days.¹

RESULTS

A comparison between the two retrieval groups (consistent versus inconsistent categories) revealed that in all three measures participants favored the traditional heating devices category over the technology-based pain relieving device category (mean = 2.72 and 2.12, $t(102) = 2.62$, $p < .01$ for the potential hazard measure, mean = 3.74 and 2.98, $t(102) = 3.47$, $p < .001$ for the usage occasion measure, and mean = 4.14 and 3.61, $t(102) = 2.82$, $p < .01$ for the pain relieving effectiveness measure).

Table 1 displays the means and standard deviations of the tested measures. A 3 (category knowledge retrieval) \times 2 (delay) ANOVA was applied. Univariate tests revealed that the delay effect was most pronounced in the case of simple recall ($F(1,132) = 23.8$, $p < .001$). The effect of delay on recall inferences was also significant ($F(1,132) = 9.42$, $p < .01$) with diminishing effects on abstractions ($F(1,132) = 3.21$, $p < .10$), factual details ($F(1,132) = 2.78$, $p < .10$), and affective judgment ($F(1,132) = 3.78$, $p < .05$). It should be noted that unlike affective judgments, intentions were insensitive to delay ($F(1,132) < 1$, n.s.). Closer examination of the

¹Studies examining delay effects varied in the timing of delayed posttests. They typically ranged between one and seven weeks (see, for example a review by Cook et al. 1979). A close look at these studies reveals no clear differential impact due to the length of measurement interval within the 1–7 week interval range.

Table 1
Means and Standard Deviations of the Key Measures

	<i>Inconsistent Categories</i>		<i>Consistent Categories</i>		<i>No Retrieval of Categories</i>	
	Immed.	Delay	Means	(S.D.)	Immed.	Delay
			Immed.	Delay		
Purchase Intentions	2.42 (1.23)	2.20 (1.41)	2.31 (1.37)	3.00 (1.29)	2.80 (1.13)	2.41 (1.27)
Attitude	3.75 (0.67)	3.18 (0.51)	3.40 (0.69)	3.47 (0.95)	3.57 (0.76)	3.41 (0.65)
Simple Recall	5.11 (2.43)	2.64 (2.06)	3.73 (1.62)	2.21 (1.71)	4.69 (2.60)	3.00 (2.37)
Factual Details	2.07 (1.69)	1.40 (1.00)	1.84 (1.30)	1.36 (1.34)	1.34 (1.35)	1.29 (0.78)
Recall Inferences	0.73 (1.07)	0.88 (1.12)	0.47 (0.72)	1.90 (1.41)	0.65 (0.93)	0.88 (1.26)
Abstractions	1.50 (1.24)	0.80 (1.00)	0.74 (1.04)	1.36 (1.53)	2.04 (1.45)	0.88 (1.40)

pattern of changes in the means over the delay intervals (within the retrieval conditions), suggests that the difference between affective judgments and intentions corresponds to the pattern that distinguishes specific factual information from abstract knowledge. In particular, under the “consistency” retrieval condition, the same pattern of increase in means appears in intentions, recall inferences and abstraction whereas a decrease is obtained for affective judgments, simple recall and factual details. The effect of the retrieval factor can be best understood through its interaction with delay. The interaction effect was significant only when recall inferences and abstractions were tested as the dependent measures ($F = 4.22, p < .01$, and $F = 5.12, p < .01$, for the two measures respectively).

This pattern of results suggests that factual information (i.e., recall and factual details) decays over time whereas abstract responses are sensitive to the retrieval procedure. It also indicates that the predictive power of recall and cognitive responses varies depending on the degree to which category knowledge is accessible prior to the acquisition of brand information. Finally, it suggests that affective judgments and intentions may be differentially affected by cognitions over time. These possible outcomes were subsequently tested more systematically by correlational and regression analyses.

Table 2 summarizes the simple correlations computed for the two delay conditions. The most prominent difference between the immediate and delay conditions is observed in the correlation between abstractions and intentions: It is not significant in immediate measurement and it is significant in delay.

Table 2
Correlations Among the Measures in Immediate vs. Delay Measurements

	Factual Details	Recall Inferences	Abstractions	Attitude	Intention
<i>Immediate</i>					
Simple Recall	0.39	.176	.265*	.176	-.018
Factual Details		.096	-.291*	-.013	-.166
Recall Inferences			.128	-.009	.012
Abstractions				.187	.191
Attitude					.356**
<i>Delay</i>					
Simple Recall	.217	-.162	.396**	.207	.204
Factual Details		.200	-.164	-.005	-.014
Recall Inferences			.235*	-.078	.167
Abstractions				.163	.378**
Attitude					.359**

*Significant at .05 level.
**Significant at .01 level.

Table 3 displays the results of the regression analysis and provides a direct test of the hypotheses. Several key findings emerge. First, supporting H1, the results in the lower section of Table 3 indicate that when the category knowledge is accessible cognitive response predictors affected intentions, whereas such impact was not obtained under the two conditions of inaccessible category knowledge. Second, H2 is supported by observing the significant regression coefficients shown in the lower section of Table 3: The significant cognitive response predictor pertaining to factual information was obtained for immediate judgments whereas the significant cognitive response predictors pertaining to inferences and abstractions were obtained for delayed judgments. Third, consistent with H3 and H4, inverted signs of the cognitive response predictors were obtained in delayed intentions—the signs were positive in the case of consistent and positively valences category, and negative in the case of inconsistent categories.

DISCUSSION

The present study offers a typology which expands the spectrum of specificity/abstractness factors used in research to date by incorporating the effects of product category knowledge. This type of knowledge is the most abstract among the inputs that give rise to purchase intentions. It becomes primarily important when delayed purchase intentions are

Table 3
Results from the Regression for Attitude and Intention at each Level of Delay

<i>Dependent Measure</i>	<i>Inconsistent Categories</i>		<i>Consistent Categories</i>		<i>No Retrieval of Categories</i>	
	Immed.	Delay	Immed.	Delay	Immed.	Delay
<i>Predictors</i>						
					Regression Coefficients	
<i>Attitude</i>						
Simple Recall	.069	.060	.113	.213	.019	.083
Factual Details	-.094	-.067	-.009	.064	.269*	-.444
Recall Inferences	.141	-.055	.219	-.086	-.569**	.316
Abstractions	-.039	.158	-.012	-.080	.102	-.042
R ²	.177	.209	.095	.187	.364*	.369
<i>Purchase Intentions</i>						
Simple Recall	-.211*	.048	-.069	.349	.124	-.067
Factual Details	.020	.354	-.456	.021	.259	-.228
Recall Inferences	.100	-.591**	.059	.617**	-.342	.094
Abstractions	.377	.389	.231	.011	-.236	.547
Attitude	.613	1.119**	.798*	.246	.319	.075
R ²	.331	.605**	.408	.565*	.323	.394

*Significant at .05 level.
**Significant at .01 level.

formed. Being the most abstract form of product knowledge, its stability is reflected in the dominant effects of cognitive responses over time. Since delayed intentions play a significant role in the marketing reality, the inclusion of category knowledge in the offered typology contributes to its predictive power.

The present study is consistent with recent research which demonstrated that brand evaluation cannot be adequately conceptualized without considering the effects of memory factors (e.g., Biehal & Chakravarti 1986; Keller 1987). Recently, it has been shown that temporal change in the effect of brand information on decision is not necessarily unidirectional. Factors such as accessibility and diagnosticity (Feldman & Lynch 1988), and comparability with memory brands and competitive interference (Alba, Marmorstein, & Chattopadhyay 1992; Keller 1991), may underlie decision formation and change.

In the present research, affective judgments were found to be affected by cognitive factors especially immediately after exposure to brand information and when category knowledge was relatively pallid. Intentions were more sensitive to the accessibility of category knowledge which appeared to serve as the basis for the emergence of abstractions. Abstractions

in turn, became more effective after delay. Finally, when affective judgment was included in the equation in predicting intentions, it was found to be sensitive to the type of category retrieved prior to brand exposure, particularly with respect to its stability over time.

The difference between affective judgments and intention in this context is noteworthy. The majority of the conceptual models of consumer behavior (for an exception see Zajonc & Markus 1982) postulate that affective judgments precede intentions in the causality sequence leading to actual purchase behavior (e.g., the theory of reasoned action, Fishbein & Ajzen 1975, or the consumer satisfaction paradigm, Oliver 1980). For example, according to the consumer satisfaction paradigm, brand attitude immediately follows satisfaction, which in turn, is highly affected by the surprise element inherent in brand information. Thus, recall and inferences stemming directly from specific brand information are highly influential in affective judgment formation, but they tend to consolidate with related category knowledge when intentions are formed.

A similar prediction originates from the scope of events to which the two dependent judgments relate. When affective judgments are formed, the consumer's focal reference is the recently acquired information, which is highly accessible. However, when intentions are formed, the consumer's focal reference shifts toward the anticipated purchase event. The information that could potentially be evoked contains a broader set of thoughts and associations with past experiences and knowledge. For instance, the anticipated usage context might generate associations with past behaviors or other general category (rather than brand specific) information items, that are similar in at least one comparable dimension (note the literature on mood states, Gardner 1985; and the conditional response view, Bugelski 1982). A contextually specific intention measure that directs consumers to focus on previous events or purchase locations was also found to be a superior predictor of future behavior (Warshaw 1980).

Intention measures may vary in the implied degree of commitment to actually purchase a brand. The intention measure in the present study was perhaps more committing than analogous measures utilized in many previous applications in the sense that participants were actually offered the option of buying a unit. Bagozzi, Baumgartner and Yi (1992) mention the possibility of "event triggered intentional actions" in activating "a previously stored intentions to act in a certain way at a future time when certain problematic elicitors arise" (p. 509). Accordingly, participants may incorporate more abstract thoughts in their purchase decision when focusing on actual purchase event and when commitment is high. In this case the dichotomy between brand affective judgments and committing intentions is likely to be sharpened. External validity may be enhanced if future research considers measures of commitment and involvement and examines their implications.

Since contemporary marketing tools vary largely in the directed timing of purchase, the impact of the variables considered in the present study becomes highly meaningful. For example, much of the direct marketing activity and direct response advertising are aimed at stimulating immediate reaction to the marketing stimulus. In contrast, incorporating environmental concern and image building measures in advertising campaigns influences delayed purchase because the consumer is expected to react only after he/she accumulated sufficient information and a certain threshold leading to persuasion is surpassed. In light of the present findings it would be highly effective for the company to incorporate information regarding consistent categories if the purpose is enhancing delayed purchases, as well as to consider the impact of the other factors that differentiate immediate from delayed purchase decisions.

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