Consumer Experience and Consideration Sets for Brands and Product Categories

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ABSTRACT

A study examining the effects of experience on consumers' consideration sets at the brand and category levels is reported. The results indicate that, as experience grows, consideration sets increase in size at both the brand and category levels. However, these larger consideration sets contain more atypical alternatives in the case of categories but not in the case of brands. This result is consistent with the argument that experts consider a more homogeneous set of alternatives when the need is more specific and a more heterogeneous set when the need is more general.

INTRODUCTION

Consumer choice research provides a rich understanding of information processing strategies. Yet choice alternatives are often taken for granted. These choice alternatives include both primary demand, or choice among product categories themselves, and secondary demand, or choice among brands within a category (Wärneryd 1988). As the particular array of considered alternatives affects both choice processes and outcomes (Glazer et al. 1991; Simonson 1989), understanding the nature of consumers' consideration sets is an important research question for both levels of choice. Understanding how consideration sets are determined is both theoretically important (Nedungadi 1990) and critical to improving the predictive ability of consumer choice models (Hauser and Wernerfelt 1990). Yet the research that has been conducted has focused on brands. Product categories, as choice sets, have been relatively ignored.

The goal of this study is to examine how consideration sets grow with consumer experience for both brand- and category-level choices. Past research shows that these different levels of choice evoke very different types of perceptions, judgments, and choice processes (Bettman and Sujan 1987; Block and Johnson 1995; Corfman 1991; Johnson 1984, 1988, 1989; Johnson and Fornell 1987; Johnson et al. 1992; Loken and Ward 1990; Park and Smith 1989). Consideration sets should also vary systematically between levels of choice as consumer experience grows. A major difference between brand- and category-level choices centers on the specificity of consumer needs. While these needs are relatively specific or concrete and pertain to particular consumption contexts in the case of brands, needs are more general or abstract and span multiple consumption contexts in the case of categories (Howard 1977). At the brand level, for example, a consumer deciding among an array of soft drinks has a relatively concrete goal in mind. In contrast, a consumer buying beverages during a weekly shopping trip for a family has more general choice criteria in mind, such as purchasing beverages that are healthy and may be used in a variety of contexts (breakfast, kid's lunches, snack time, etc.). This suggests that, as experience grows, consideration sets may grow in very different ways at the different levels of choice.

BRANDS AND CATEGORIES

Past research reveals a number of important processing differences between brand- and category-level choices. Compared to brands, categories are perceived and judged using more abstract attributes (Corfman 1991; Johnson 1984; Johnson and Fornell 1987; Johnson et al. 1992), processed in a more hierarchical or top-down fashion (Johnson 1989; Park and Smith 1989), and involve more alternative-based as opposed to attribute-based comparisons (Johnson 1984 1988; Park and Smith 1989). Of particular interest here is how consumers' needs vary as a function of the level of choice, and how these needs interact with consumer experience to produce a consideration set. Following Alba and Hutchinson (1987), we define experience or familiarity as "the number of product-related experiences that have been accumulated by the consumer" (p. 411). We adopt Hauser and Wernerfelt's (1990) definition of consideration sets as "those brands that the consumer considers seriously when making a purchase and/or consumption decision" (p. 393). The concept of a consideration set rests on the observation that consumers do not seriously consider all available options.

Overall we expect that as experience increases, consideration sets increase. As experience grows, consumers become aware of, try, and subsequently consider an increasing number of options (Howard 1977). This prediction presumes some underlying level of risk aversion, whereby consumers start with an empty consideration set that is "built up" with experience. Whether it is brands of wine, or types of alcoholic beverages, experience should increase the number of considered options. The first hypothesis states that this growth prediction holds for brand- and product category-level choice alternatives alike:

H1: The number of alternatives in a consumer's consideration set increases with experience for both brand-level and category-level choice alternatives.

Alternatively, consumers may begin with an all inclusive consideration set that is pared down with experience. This relative risk seeking view of consideration set formation suggests an opposite prediction whereby consideration sets decrease in size with experience.

Alba and Hutchinson (1987) describe another important effect that experience may have on consideration sets. Consumers use category structures, learned through experience, to organize and differentiate the products in their environment. These category structures vary from subordinate categories that contain highly similar or homogeneous alternatives (e.g., soft drinks) to more basic and superordinate categories that contain more dissimilar or heterogeneous alternatives (e.g., beverages). What differentiates alternatives from one another within a subordinate category is their ability to meet a relatively specific set of needs (e.g., calories, flavor) in relatively specific consumption situations. In contrast, more superordinate category alternatives vary in their ability to meet a more abstract set of basic needs (e.g., nutritional value, life style) across a variety of consumption situations. This led Alba and Hutchinson to predict that: "When the need is specific, experts consider a more homogeneous set of alternatives than do novices; when the need is general, experts consider a more heterogeneous set of alternatives than do novices" (1987, p. 418).

Howard (1977) hypothesized a similar effect as a way of differentiating between brand- and category-level choices. Following earlier work by Rokeach (1973), Howard hypothesized a hierarchy of abstract-to-concrete choice criteria or needs that corresponds to consumers' hierarchies of superordinate-to-subordinate product categories. The more abstract categories should be described and evaluated on the basis of more abstract criteria while the more concrete, subcategory options should be described and evaluated on the basis of more concrete criteria. This led Howard to predict that as consumers move hierarchically from a heteroge-

neous, category level of choice to a homogeneous, brand level of choice, there should be a corresponding increase in the level of specificity of consumers' choice criteria. For consumers with experience in the product domain, a category-level choice should invoke a more abstract, general set of needs or values while a brand-level choice should invoke a more concrete, specific set of needs or values.

This difference in need specificity should affect the graded structure or *prototypicality* of considered options. According to the prototypicality concept, some members of a category are reliably rated as more typical of the category or considered better exemplars (Cantor and Mischel 1979; Mervis and Rosch 1981; Medin and Smith 1984; Smith and Medin 1981). In the US, for example, popcorn and potato chips are considered more prototypical of snack foods than are olives and tomatoes (Ward and Loken 1986). A body of research suggests that more prototypical members of a category are learned first while less prototypical members and the graded structure of the category are learned with accumulated experience (Loken and Ward 1990; Mervis and Rosch 1981; Rosch 1975, 1977; Sujan 1985; Ward and Loken 1986, 1988). This led Alba and Hutchinson (1987) to further predict that experts and novices vary in their inclusion of atypical products in a consideration set: "it is likely that novice consumers will know about prototypical brands, but not atypical ones (while) expert consumers will be familiar with both types" (p. 416). As experience grows, consumers encounter use occasions or ad hoc contexts in which atypical category members may be more appropriate than prototypes (Barsalou 1983, 1985).

However, this prediction must be considered in light of the specificity of needs and the homogeneity of alternatives. Consider first the case of product category-level choice alternatives and associated general choice criteria. As experience grows, there is a large, heterogeneous set of options available to meet one's general choice criteria. Thus the average prototypicality of alternatives in a consideration set should decrease with experience. Now consider the case of brand-level choice. While experts may become aware of both typical and atypical brands, they are unlikely to include the more atypical options in their choice set. It conflicts with the notion that they are trying to fulfill a specific, well-defined, concrete need. In the case of brands, therefore, we expect experience to have little or no effect on the prototypicality of considered alternatives. Put differently, the predicted effect of experience on prototypicality presumes a relatively heterogeneous set of possible alternatives and related consumption contexts. This leads to our second hypothesis:

H2: Consideration sets decrease in prototypicality with experience at the product category level but not at the level of brands.

To summarize, we predict that consideration sets should increase with experience for both brand- and category-level choice alternatives, but only the product category sets should grow to include a broader range of typical to atypical options. These predictions were tested using data collected though not analyzed as part of a larger study of consumer perceptions of brand- and category-level stimuli (Johnson et al. 1992). It is important to note that the prediction in hypothesis two regarding brand-level consideration sets is meant to be general and may not hold in certain categories or contexts. For example, in categories where "being different" is important to consumers, more atypical alternatives may actually become more preferred with experience, whether it is drinking a unique brand of wine or coffee or wearing a unique brand of jeans (Ward and Loken 1988). Our argument regarding category-level choice is likewise meant to be general and not necessarily describe every choice situation. Consumers may face category-level choices involving very specific alternatives (Johnson 1984).

EMPIRICAL STUDY

In our empirical study, consumers were asked to indicate which alternatives, from among a given set of either brands or categories, they would seriously consider buying or consuming. This task follows directly from Hauser and Wernerfelt's (1990) definition of consideration sets. Five sets of alternatives were used to operationalize the brand- and category-level stimuli. Each set contained twelve alternatives and each subject responded to questions regarding one of the five sets. Two sets (soft drinks and candy bars) are very concrete and represent brands from the same product categories. Three sets (beverages, snacks, and lunch products) represent more abstract, product category alternatives that cross salient (basic) category boundaries. The brand-level stimuli included the twelve market share leaders in each category at the time of the study while the category-level stimuli included mostly common with some less common category options. The specific stimuli within each of these five stimulus sets are presented in Table 1. Overall 123 subjects participated in the study, 24, 24, 24, 24, and 27 subjects respectively for the soft drink, candy bar, beverage, snack, and lunch product stimuli.

The data was collected using a two part questionnaire. In part one, subjects provided four measures of experience for each product in their stimulus set. These included the subject's recency of consumption, frequency of consumption, recency of purchase, and frequency of purchase for each product, all rated on five-point scales (past day, past week, past month, past year, and year or more for the recency of purchase and consumption questions; every day, every week, every month, every year, and never for the frequency of purchase and consumption questions). Given the high degree of reliability among these measures (principle component measurement loadings ranging from .865 to .998), we combined them into an equally weighted experience index for our analyses.

Near the end of part one, subjects were also asked to indicate which of the twelve products were in their consideration set. Subjects responded yes or no as to whether they would consider purchasing or consuming each option in the set. They were also asked to list any dietary or health considerations that may be driving their responses.

In part two of the questionnaire, the subjects rated the similarity of each possible pair of sixty-six products in the set. The pairs were rated on a scale from 0 (Very Dissimilar) to 10 (Very Similar). The stimuli were rated in one random order by half the subjects and in the reverse order by the remaining subjects throughout the study. There is general agreement that more prototypical category members are more similar, on average, to other category members than are less typical members (Barsalou 1983; Nosofsky 1988). Therefore, the average similarity judgments are used here to measure the typicality of each alternative within each stimulus set.

In a completely separate study conducted by one of the authors, 46 subjects provided both pair-wise similarity ratings and simple judgments of typicality for beverage products (brands of beer). The typicality measure computed from the similarity judgments and the direct prototypicality ratings were very highly correlated (r=.841), supporting the use of the similarity-based measure here. As a further step, we standardized this typicality measure within each stimulus set. This allows observed increases or decreases in prototypicality with experience to reflect differences beyond any base-line differences in prototypicality across the five stimulus sets.

TABLE 1
Stimulus Sets

Brand-Level Stimuli

Soft Drinks	Candy Bars
Sprite	Three Musketeers
Seven Up	Mars Bar
Diet Sprite	Milky Way
Diet Seven Up	Snickers
Orange Crush	M&M Plain
Diet Orange Crush	M&M Peanut
Coke Classic	Hershey's Plain
New Coke	Hershey's Almond
Pepsi	Nestle's Crunch
Cherry Coke	Reece's Peanut Butter Cups
Diet Coke	Twix Caramel
Diet Pepsi	Kit Kat

Category-Level Stimuli

Beverages	Snacks	Lunch Products
Ice Cream Soda	Popcorn	Carrot
Milk Shake	Nacho Chips	Apple
Chocolate Milk	Crackers	Fruit Juice
Milk	Potato Chips	Yogurt
Fruit Juice	Cheese	Milk
Lemonade	Grapes	Ice Cream
Soft Drink	Apple	Cookie
Diet Soft Drink	Yogurt	Candy Bar
Club Soda	Ice Cream	Soft Drink
Iced Tea	Cookie	Pizza
Bottled Water	Candy Bar	Chicken Sandwich
Iced Coffee	Brownie	Hamburger

Analyses

Two types of analyses were conducted in order to test hypotheses one and two. We first used regression models in which the dependent variables of interest were the size of each subject's consideration set and its average prototypicality. The independent variables of interest were the continuous experience index and the categorical level of the choice. As experience also varies with the level of choice (consumers have more experience with product category options than with brands), we conducted a second set of analyses. For each level of choice, k-means clustering was used to categorize the consumers into a group of relative experts and a group of relative novices. This assures that the groups differ maximally in experience. The hypotheses were then tested using ANOVA models involving an experience factor (experts versus novices) and a "level of choice" factor (brands versus categories). This analysis retains much of the experience-related information while limiting any confound between experience and choice level. According to the k-means clustering, there are 9 relative experts compared to 39 relative novices at the brand level ($F(1,46)=57.412$, $p<.001$) and 46 relative experts compared to 29 relative novices at the category level ($F(1,73)=129.459$, $p<.001$).

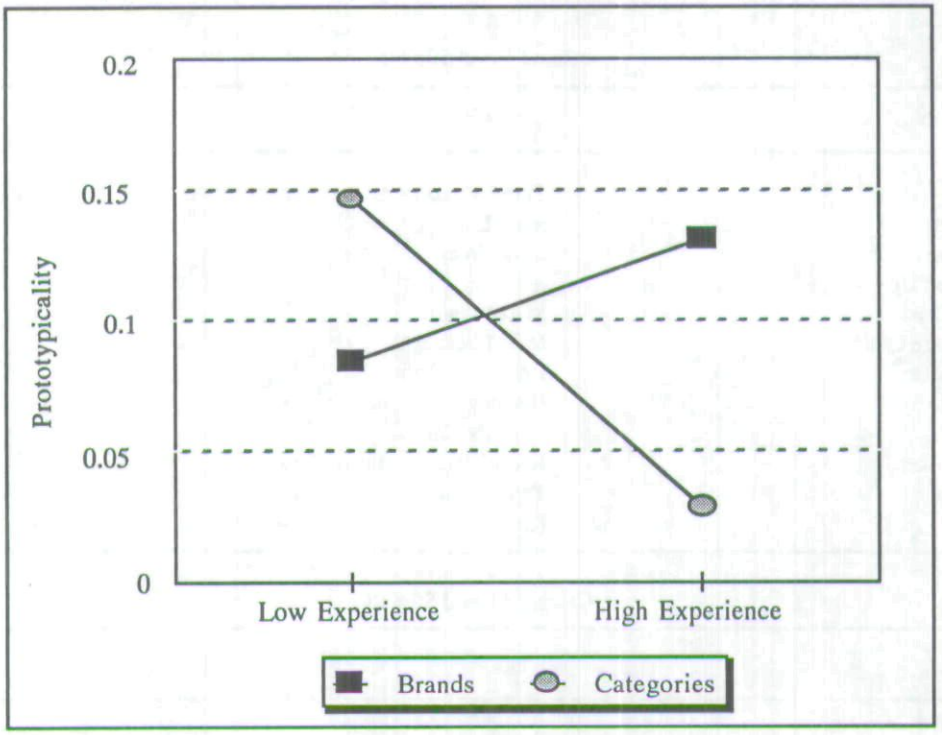
RESULTS

Effects of Experience on Consideration Set Size

The regression analysis demonstrates a significant overall increase in the size of the subjects' consideration sets with experience ($r=.639$, $p<.001$). Separate analysis of the brands and categories reveals an increase in set size with experience in both cases ($r=.265$, $p<.05$ for brand-level stimuli; $r=.588$, $p<.001$ for category-level stimuli). Further analysis within each of the five stimulus sets also reveals a relatively high level of consistency ($r=.531$, $p<.001$ for soft drinks; $r=.218$, not significant for candy bars; $r=.436$, $p<.05$ for beverages; $r=.333$, $p<.10$ for snacks; $r=.399$, $p<.05$ for lunch products).

The ANOVA results also reveal a general increase in consideration set size with experience ($F(1,119)=7.229$, $p<.01$). There was a significant increase in consideration set size with choice level ($F(1,119)=27.609$, $p<.001$), which is consistent with the increase in experience from brands to categories described earlier. There was no significant interaction between experience and level on set size. Overall these results support hypothesis one.

FIGURE 1
Effects of Experience on the Prototypicality of Consideration Sets for Brands Versus Categories



Effects of Experience on the Prototypicality of Alternatives

We now address whether the larger consideration sets for the more experienced consumers contained less prototypical alternatives. As expected, across conditions, consideration set membership tended to be more typical than atypical. Regression analysis was first used to examine the effects of the experience index, the two levels of choice (brands versus categories), and the interaction between experience and choice level on the average prototypicality of considered options. This model explained a significant degree of variance in prototypicality (r=.327, p<.01). There was a main effect of experience on prototypicality (t=2.239, p<.05) and no main effect for level. There was also a significant interaction between experience and choice level on prototypicality (t=-2.887, p<.01). Separate regressions reveal that the interaction is driven by a significant decrease in prototypicality with experience for the category-level stimuli (r=-.551; p<.001) with no corresponding effect for brands (r=.138, not significant). Analyses within each stimulus set also reveal no effect for the brands (r=.060, not significant for soft drinks; r=.007, not significant for candy bars) and negative effects for categories (r=-.031, not significant for beverages; r= -.287, p<.10 for snacks; r=-.326, p<.05 for lunch products).

A similar pattern of results emerges from the ANOVA model. There was no main effect for either brands versus categories or novices versus experts on prototypicality. The level by experience interaction was, however, significant (F(1,119)=6.093; p<.05). This interaction, depicted in Figure 1, shows a clear decrease in prototypicality with experience for the category-level stimuli (from .146 to .029; F(1,73)=27.487, p<.001). In contrast, there is a slight, though nonsignificant, increase in prototypicality with experience for the brands (from .084 to .131). This pattern of results supports hypothesis two. Increases in consumer experience result in a wider range of typical to atypical alternatives being considered, but only at the product category level.

Table 2 summarizes the results for consideration set size and average prototypicality of the consideration sets. Also included is the average number of products in the subjects' consideration sets that were relatively atypical (i.e., below zero on the standardized prototypicality measure). As the table clearly shows, consideration set size increases with experience for both brands and categories. For the brands, average prototypicality increases as the number of atypical members in a consideration set decreases from approximately three to two. For the categories, average prototypicality decreases as the number of atypical members in a set increases from approximately four to six.

When the number of atypical members is used as the dependent variable in the ANOVA model, the pattern of results is unchanged. The interaction involving level and experience is significant as is the increase in atypical alternatives considered for the categories from low experience (novice) to high experience (expert) consumers.

DISCUSSION

In their review of the dimensions of consumer expertise, Alba and Hutchinson (1987) proposed that consideration sets grow in a systematic fashion as consumers gain experience in a product domain. When needs are more general, experienced consumers consider a more heterogeneous or superordinate array of alternatives. When needs are more specific, experienced consumers consider a more homogeneous or subordinate array of alternatives. They also suggest that experts are more aware of atypical or ad hoc category alternatives and more likely to include these in their consideration set. Our discussion suggests that the prototypicality argument presumes a relatively general need and heterogeneous alternatives. While experience should increase the size of consideration sets for brand and categories alike, only the category-level sets should include an increasing proportion of atypical or ad hoc options. We report the results of an empirical study of consumer

TABLE 2
Consideration Set Size, Average Prototypicality, and Average Number of Atypical Alternatives Across Conditions

			Experience	
			Low Experience	**High Experience**
Stimulus Level	**Brands**	Set Size	8.538	9.333
		Prototypicality	0.084	0.131
		Atypical Alternatives	3.333	2.444
	Categories	Set Size	10.276	11.457
		Prototypicality	0.146	0.029
		Atypical Alternatives	4.345	6.304

non-durable food and beverage products which supports these predictions.

The study adds to a recent though growing body of literature which demonstrates systematic differences between brand- and category-level choice. It highlights the need to include both types of choices in any comprehensive study of consumer judgment and choice. The study also suggests that different choice models may be appropriate at the different choice levels because these models require identification of the size and composition of consumers' consideration sets (Hauser and Wernerfelt 1990). Naturally, our results may be limited to the types of products and procedures used. Our subjects chose from an externally provided lists of alternatives; the alternatives were not generated or evoked from memory. While our experience measures reflect the subjects' interactions with the products, they may not accurately reflect subject "expertise" or "awareness." Finally, it will be important to replicate the results in the context of more complex consumer durables and/or services.

At the same time, the study demonstrates that consideration sets behave differently at the brand and category levels and represent an important dimension of consumer judgment and choice. Alba and Hutchinson's (1987) prediction that expert consumers are more likely to be familiar with and consider relatively atypical options was not generally supported. As Table 2 shows, this prediction holds for category-level stimuli where both the average typicality of the consideration sets decreased and the number of atypical alternatives in the sets increased from novices to experts. This was not the case for brands where there is actually a slight increase in prototypicality and a corresponding decrease in the number of atypical alternatives considered from novices to experts.

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