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The authors examine how new brand entries affect consumers' consideration sets. A within-subject longitudinal experiment examines several entry positions into existing markets. The results suggest that new brand entries produce changes in consideration sets toward dominating, compromise, and assimilated brands, away from extreme brands in two-brand markets, and toward dominating and away from extreme brands in eight-brand markets. These results are confirmed by a second experiment that utilizes a between-subject design and markets with six existing brands.

Context Effects, New Brand Entry, and Consideration Sets

Research on the impact of context effects on choice has been both widespread and informative (Simonson and Tversky 1992). Similarly considerable interest has been focused on the role of consideration sets in the choice process (Shocker et al. 1991). In both streams of research, the impact of new products has been an important issue. Our purpose is to merge these research streams by examining the impact of context effects on consideration sets when new products (brands) are introduced.

Certain types of new brand entry have the ability to induce violations of some basic assumptions in choice modeling, such as the regularity assumption that an inferior new entry should not increase share of an existing brand (e.g., Huber, Payne, and Puto 1982; Huber and Puto 1983). Nevertheless, relatively little is known about the processes that lead to the findings reported in this area. In developing possible explanations for the demonstrated effect, several researchers have looked at the role played by the product attributes (Kardes, Herr, and Marlino 1989; Simonson 1989) or product knowledge (Mishra, Umesh, and Stem 1993), and others have explored the changes in brand perceptions (Pan and Lehmann 1993) or shifts in attribute weights (Simonson 1991). We explore the impact of new brand entry on consideration sets.

In our empirical investigation, we employ several entry positions in three types of existing markets using both within-subject and between-subject experimental designs. Our re-

sults suggest that new brand entry affects consideration set membership in a manner similar to their impact on choice; specifically, asymmetric dominance and extremeness aversion effects are shown to occur. Interestingly, these impacts occur for both moderate-size choice sets (six and eight existing brands) and small choice sets (two existing brands). Moreover, being close to an existing brand seems to help a weak brand and hurt a strong one.

CONSIDERATION SETS

Shocker and colleagues (1991) provide an excellent review of research related to consideration sets. The concept of choice being limited to a small number of brands was formalized by Howard and Sheth (1969, p. 416) as the evoked set, which they describe as "those brands the buyer considers when he/she contemplates purchasing a unit of the product class." The evoked set recently has been defined as the set of brands that are evaluated at the point of decision making (Shocker et al. 1991). The consideration set, on the other hand, is that set of brands being considered at a prior stage in the choice process and is often portrayed as developed by a retrieval process from memory (Biehal and Chakravarti 1986; Nedungadi 1990).

On the basis of previous literature, it seems that brands in the consideration set are salient or accessible to consumers. The processing of information on these alternatives is more active and involved (Nedungadi 1990; Shocker et al. 1991). Moreover, brands in the consideration set are goal satisfying in that they satisfy the minimum needs of the consumer for the intended use occasion. Alternatives that are apparently not acceptable or not worth considering for the use occasion would be excluded from further consideration in the choice process. For example, the probability of inclusion of a brand in the consideration set has been modeled on the basis of the trade-off between consideration cost and

benefit (Hauser and Wernerfelt 1990; Roberts and Lattin 1991).

Consideration set research relates closely to research on choice process and choice set, which suggests that consumers follow a multistage process in which the available brands are reduced to a few for final selection (Bettman 1979). This concept was incorporated in several models of consumer choice behavior (e.g., Gensch 1987). This reduction process is affected by the number of brands presented, amount of information for each brand, and format of the information (Bettman and Park 1980). Alba and Hutchinson (1987) suggest that the size and complexity of consideration sets is related to consumer expertise. Kardes and colleagues (1993) suggest that the size of the consideration set depends on brand heterogeneity. Farquhar and Pratkanis (1987) suggest that the presence of unavailable alternatives in the choice set affects final choice outcomes. However, it is not clear whether and how a new brand entry affects consideration sets. The focus of the current study is to understand changes in consideration sets induced by the entry of new alternatives in the existing market.

NEW BRAND ENTRY

The topic of new product entry has spawned many research streams, including modeling the adoption process (Mahajan, Muller, and Bass 1990), describing appropriate responses to new entry (Hauser and Shugan 1983), and explaining first entrant advantages (Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992). Another research stream central to this article concentrates on understanding how shares realign after entry, with particular emphasis on unanticipated or irrational behavior. Beginning with Huber, Payne, and Puto (1982), many researchers have demonstrated violations of basic choice axioms such as regularity in that an existing brand's share increases after the entry of a new brand that is inferior. This stream of research is often referred to as *attraction effect research* (Huber and Puto 1983; Huber, Payne, and Puto 1982; Kardes, Herr, and Marlino 1989; Ratneshwar, Shocker, and Stewart 1987; Simonson 1989, 1991; Simonson and Tversky 1992). Several researchers have proposed possible conditions under which the effects take place. For example, the attraction effect can be reduced by relatively meaningful alternatives and product class familiarity (Ratneshwar, Shocker, and Stewart 1987). Whereas Huber and Puto (1983) suggest that the effect may be limited to cases in which the new entrant is an inferior brand, Simonson (1989) shows that compromise alternatives after an extreme entry are more likely to be chosen, which may depend on the need to justify decisions. Summarizing much of the work on context effects on choice, Simonson and Tversky (1992) suggest that two basic tendencies explain most of the results. Specifically, they suggest that individuals prefer alternatives that are clearly better on attributes (trade-off contrast) and are not extreme (extremeness aversion). Our goal is to investigate whether these tendencies also describe the impact of new brand entry on consideration set membership.

HYPOTHESES

We propose that new brand entry affects consideration set membership. We expect the dominance (trade-off contrast) effect found with respect to choice to occur as well for consideration set membership. Studies in the attraction effect area demonstrate that consumers are more likely to choose a brand when it dominates another brand in the set (e.g., Huber, Payne, and Puto 1982). Consumers are more likely to include brands in the consideration set that are clearly superior to other brands and are less likely to include brands that are clearly inferior to other brands in the market. Hence:

> H_1: A dominated entry will increase the likelihood that the (now) dominating brand is in the consideration set.

We expect the compromise/extremeness aversion effects found in previous choice studies to affect consideration membership as well. It has been found that the addition of a brand to a set of two nondominated brands increases the share of the adjacent brand relative to the share of the nonadjacent brand (Simonson 1989; Simonson and Tversky 1992). A compromise alternative appears to be a safer alternative and is attractive to risk-averse consumers (Huber and Puto 1983). Furthermore, consumers seem to be able to justify choosing a compromise alternative better than choosing an extreme alternative (Simonson 1989). At an early stage in the choice process, consumers may feel more comfortable considering less extreme alternatives. Therefore:

> H_2: Brands that become extreme after entry will be less likely to be considered; brands that become a compromise after entry will be more likely to be considered.

Considerable interest recently has been focused on categorization processes (e.g., Cohen and Basu 1987). There are two basic processes that describe how individuals cope with new information (Rumelhart and Norman 1972): *Assimilation* occurs when a new concept is integrated into the present mental schema, and *accommodation* occurs when a new mental schema is created or the present schema undergoes substantial modification to interpret the new concept. From the perspective of the cost of thinking (Shugan 1980) and cost/benefit trade-offs (Hauser and Wernerfelt 1990; Roberts and Lattin 1991), brands that are positioned closely to each other would be easier to process and hence receive more consideration than the brands positioned less closely to each other. In a choice experiment, a lone alternative is less likely to be chosen (Glazer, Kahn, and Moore 1991), possibly because buyers infer desirability from the distribution of available alternatives. Here, a brand that is positioned close to another brand is regarded as an assimilated brand, and a brand that is positioned far from other brands is a subtyped brand (Carpenter and Nakamoto 1989; Sujan and Bettman 1989). We hypothesize that being positioned close to other brands would increase a brand's likelihood of being in the consideration set. Thus:

> H_3: A brand positioned close to other brands (assimilated) after new brand entry is more likely to be in the consideration set.

Figure 1
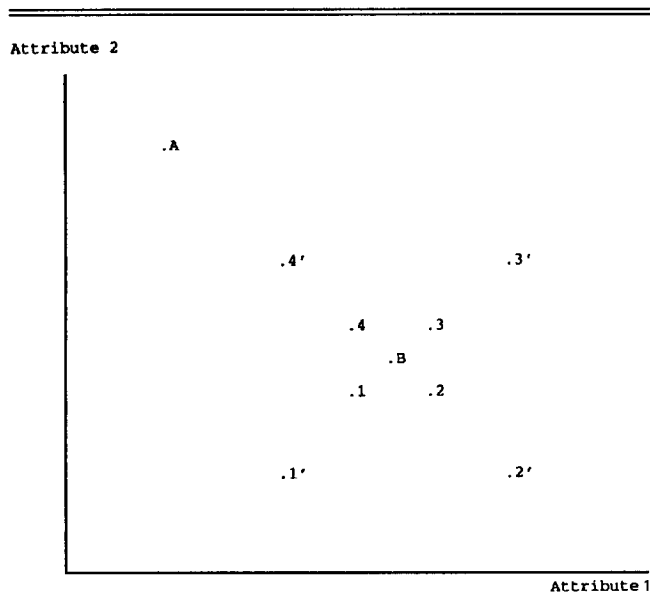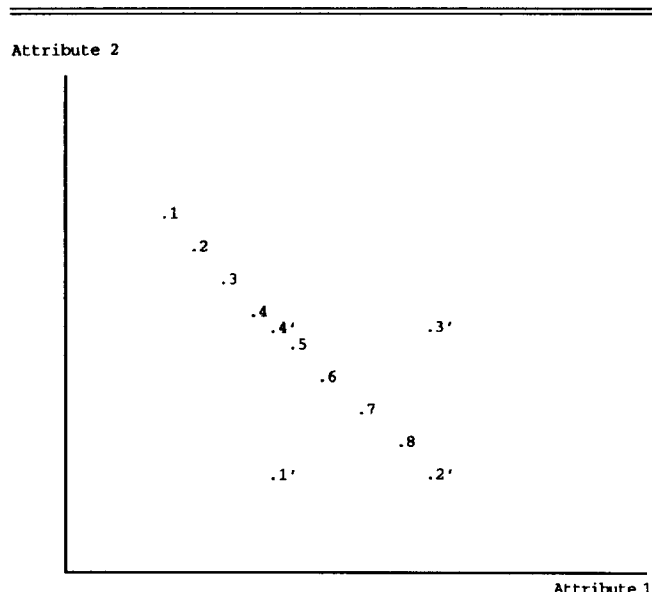**ENTRY POSITIONS IN THE TWO-BRAND MARKETS**

Figure 2
ENTRY POSITIONS IN THE EIGHT-BRAND MARKETS

Also, as the number of existing brands increases, most brands are in compromise positions, so the compromise effect should be weaker in larger markets. The relative size of the effects in larger versus smaller existing markets is an open issue. On the one hand, one might expect stronger effects in small markets because manipulations are more obvious. On the other hand, in small markets the consideration set might consist of the entire market (e.g., two or three brands) and hence there will be no dominance, compromise, or assimilation effects on consideration sets. However, in established markets in which consumers have predetermined preferences, consumers may quickly reject some alternatives that fall below a certain cutoff on an attribute (e.g., 40,000 miles guarantee for car tires). Hence, we propose two more hypotheses:

H_4: The dominance and compromise effects on consideration set also will occur in small (two-existing brand) markets.

H_5: The dominance and compromise effects on consideration set will be stronger in smaller markets.

STUDY 1

Subjects

One hundred twelve students from a major northeastern university participated in the experiment. Most of them attended small sessions with no more than three people in each. Subjects took an average of 40 minutes to complete the task and were paid $10 for their participation.

Brand Positions

Two product attributes were used for all the product categories. Eight product categories have two existing brands that are positioned on the efficient frontier in the two-attribute space. Four additional product categories have eight

existing brands. Two existing brand markets are included to match previous research and test H_5.

When the market has only two existing brands, there are eight entry positions for the new entrant: 2 (assimilated and nonassimilated) X 2 (dominating and dominated) X 2 (compromise and extreme). Figure 1 presents the positions of the two existing brands and eight entry positions for the new entrant. Brand 1 represents a dominated entrant, brand 2 an extreme entrant, brand 3 a dominating entrant, and brand 4 a compromise entrant. Brands 1, 2, 3, and 4 are assumed to be assimilated and brands 1', 2', 3', and 4' are assumed to be not assimilated. (This operationalization of assimilation is "objective" rather than perceptual. Hence, the impact of assimilation might be weaker here than it would be if it was based on subject's perceptions of brand assimilation.)

For the four product categories having eight existing brands, the eight existing brands are positioned on the efficient frontier in the product space. The new entrant is positioned in one of the four positions: dominated, extreme, dominating, and compromise. The assimilation factor was dropped to simplify the design (Figure 2). Appendix A provides the product categories, attributes, and values, based on actual brands as rated in *Consumer Reports*. However, fictitious names, such as brand S and brand D, were used for brands.

Task

Eight different questionnaires were used in the experiment to randomize effectively the order of product categories and existing brands and the match of entry positions and product categories. Each questionnaire contained eight product categories with two existing brands and two product categories with eight existing brands.

We chose a within-subject design to represent actual conditions for an entry more closely. In a related study, Kardes

and Kalyanaram (1992) investigate order-of-entry effects and find that the first entrant advantage may occur because of sequential learning. Interestingly, when subjects are exposed to brands simultaneously, the pioneering advantage tends to disappear. In our Study 1, there were two time periods. In the first period, subjects were exposed to ten product categories, each having a set of existing brands. In the second period, subjects were exposed to the same ten product categories and existing brands with a new brand introduced in each product category. The lag between the two periods was a brief interval during which subjects performed an unrelated task.

Measures

Consideration set was operationalized by a two-item measure. The first item followed the typical measure of consideration set in previous studies (e.g., Narayana and Markin 1975; Nedungadi 1990). Specifically, we asked, "Which brand(s) would you consider seriously?" The second item of consideration set measure is, "Which brand(s) are accept-

able to you?" (Brisoux and Laroche 1981). Both items allowed subjects to check as many or as few brands as they saw fit.

Brand choice is measured by asking subjects to pick the brand they would buy from all the alternatives (cf. Huber, Payne, and Puto 1982; Simonson 1989). Brand preferences and attribute importance are also measured. Data were collected in the order presented here.

Analysis and Results

We pooled across product categories to simplify presentation.

Results for two existing brands. We first tabulated the percentage of subjects who rated the brand positively on both consideration set measures (Table 1). The existing brand that is positioned far away from the entrant is labeled brand A, and the existing brand that is close to the entrant (the target brand) is called brand B. In the pre-entry condition, consideration set membership averaged 1.30 of the possible 2, indicating that even in a two-brand market not all brands would

Table 1
STUDY 1 RESULTS: TWO-BRAND MARKETS

Entrant's position relative to Brand B	Brands	Consideration set		Choice share	
		Before entry	After entry	Before entry	After entry
(3) Dominating and assimilated	A	71%	64%	58%	51%
	B	54%[a]	34%[a]	42%[a]	0%[a]
	Entrant		73%		49%
	Total Size	1.25	1.71		
(3') Dominating	A	65%[b]	51%[b]	46%[a]	20%[a]
	B	63%[a]	29%[a]	54%[a]	3%[a]
	Entrant		89%		77%
	Total Size	1.28	1.69		
(1) Dominated and assimilated	A	62%	63%	48%	44%
	B	68%	73%	52%	55%
	Entrant		23%		1%
	Total Size	1.30	1.59		
(1') Dominated	A	71%	70%	50%	47%
	B	63%[c]	71%[c]	50%	51%
	Entrant		13%		2%
	Total Size	1.34	1.54		
(4) Compromise and assimilated	A	60%	54%	38%[c]	30%[c]
	B	75%[c]	66%[c]	62%[a]	27%[a]
	Entrant		77%		43%
	Total Size	1.35	1.97		
(4') Compromise	A	62%	58%	46%[a]	23%[a]
	B	67%[b]	52%[b]	54%[a]	23%[a]
	Entrant		80%		53%
	Total Size	1.29	1.90		
(2) Extreme and assimilated	A	65%	61%	48%	48%
	B	68%	65%	52%[a]	32%[a]
	Entrant		54%		21%
	Total Size	1.33	1.80		
(2') Extreme	A	61%	65%	51%	44%
	B	62%	66%	49%[c]	39%[c]
	Entrant		38%		17%
	Total Size	1.23	1.69		

Note: N = 112 subjects for each entry condition (aggregated across eight product categories having two existing brands). The number in the brackets refers to entry positions in Figure 1.

The difference between before entry and after entry conditions is significant at [a] = $p < .01$; [b] = $p < .05$; [c] = $p < .1$.

be considered by all consumers. After entry, consideration sets averaged 1.73 of the possible 3, with the largest gains when compromise entries were introduced and the smallest gains when dominated entries were introduced.

When the entrant dominated B, significantly fewer subjects would include B in the consideration set both in the case of assimilated entry (35% versus 54%, $p < .01$) and nonassimilated entry (29% versus 63%, $p < .01$). When B dominated the entrant, more subjects would include B in the consideration set, but the difference was significant only in the case of the nonassimilated entry (71% versus 63%, $p < .1$). Thus, H_1 is partially supported. When the entrant was in a compromise position, fewer subjects would consider B both in the case of assimilated entry (66% versus 75%, $p < .1$) and nonassimilated entry (52% versus 67%, $p < .05$), supporting H_2. Interestingly, when B becomes a compromise brand, its likelihood of being in the consideration set does not increase. Here again we see an asymmetry: Being in a disadvantaged position hurts consideration but being in a favored position does not increase it after entry. Finally, the entrant was more likely to be in the consideration set when it was in a dominating or compromise position and less likely when it was in an extreme or dominated position. Brand A's consideration set membership, as expected, was less affected by the new entries than brand B's.

The impact of new brand entries on consideration sets is further assessed through regression. The dependent variable is consideration set membership. The two measures of consideration set membership are correlated ($r = .75$ for categories having two existing brands and $r = .81$ for categories having eight existing brands), so a single index for consideration set was created by averaging the two items. The independent variables are dummy variables representing each brand's position relative to other brands defined on five dimensions: assimilated, compromise, extreme, dominating, and dominated. The before-entry brands and the nontarget existing brand were coded 0 across all the dimensions. After new brand entry, the entry and target brands are coded 0 or 1 on the five dimensions, depending on their relative positions. For example, if the entrant dominates the target existing brand, the entrant is coded 1 on the dominating dimension and 0 on other dimensions, and the target brand is coded 1 on the dominated dimension and 0 on other dimensions.

The data are pooled across subjects, product categories, and before/after entry conditions, with each combination of subject, product category, and before/after entry conditions treated as a single data point (We generated 4475 usable observations: 112 subjects by eight categories by two before-entry brands plus three after-entry brands minus cases with missing data.) To control for the partially repeated measure nature of the design, both subject and product dummies are included in the model as well.

The compromise, extreme, dominating, dominated, and assimilated coefficients are significant and in the directions hypothesized (Table 2), again supporting H_1, H_2, and H_3. The impact of assimilation may vary on the basis of whether the assimilated brand is in a dominated, dominating, compromise, or extreme position. We replaced the assimilation main effect with interactions between assimilation and the

Table 2
THE IMPACT OF NEW ENTRY ON CONSIDERATION SETS: REGRESSION ANALYSIS (STUDY 1)

Independent variables	Two existing brand markets		Eight existing brand markets
Intercept	.96	.96	.88
	(14.47)*	(14.50)*	(11.00)*
Assimilated	.04		
	(2.33)†		
Compromise	.05	.09	-.05
	(2.37)†	(3.05)*	(-1.69)‡
Extreme	-.14	-.20	-.13
	(-6.28)*	(-7.05)*	(-4.45)*
Dominating	.09	.14	.06
	(3.96)*	(4.96)*	(2.16)†
Dominated	-.41	-.44	-.22
	(-18.17)*	(-15.64)*	(-7.73)*
Compromise × assimilated		-.02	
		(-.50)	
Extreme × assimilated		.15	
		(4.05)*	
Dominating × assimilated		-.05	
		(-1.40)	
Dominated × assimilated		.10	
		(2.52)†	
Model R^2	.18	.19	.16

Note: Values in parentheses are t-statistics. * = $p < .01$; † = $p < .05$; ‡ = $p < .1$. Data are aggregated across eight product categories having two existing brands.

other factors. The four interaction terms (between assimilated and dominating, dominated, compromise, and extreme) explain significantly more than just the main effect alone ($F[3,4465] = 6.08$, $p < .01$). The interactions between assimilated and extreme and between assimilated and dominated are positive and significant ($p < .01$ and $p < .05$). This suggests that for a brand in an undesirable position (extreme or dominated), being close to a brand in a more desirable position (dominating or compromise) increases its likelihood of being in the consideration set. Specifically, being close (assimilated) cancels out 75% of the negative effect of being extreme but less than 25% of the effect of being dominated. As expected, for a brand in a desirable position (dominating or compromise), the impact of assimilation is less dramatic (the two interaction terms are not significant). However, the signs for being assimilated to an undesirable brand are negative, suggesting that the gains from being assimilated might be more than offset by losing distinctive superiority.

The choice shares of brand A, brand B, and entrant also are tabulated in Table 1. As expected, brand B's shares were affected in the predicted directions and were significant in six of the eight entry conditions. Not surprisingly, the choice results are similar to those involving consideration set membership.

Changes in existing brands' consideration set membership. The results reported in Table 2 come from two sources: the entrant (second period only) and the existing brands before and after entry. An analysis that focused only on the reactions to different new entries shows, unsurprisingly, that the entrant does well when it is in a dominating or compromise position and poorly when it is in an extreme or dominated position.

Table 3
THE IMPACT OF NEW ENTRY ON CHANGES IN CONSIDERATION SETS

Independent variables	Two existing brand markets		Eight existing brand markets
Intercept	−.03	−.03	.02
	(−.33)	(−.33)	(.27)
Assimilated	.05		
	(1.75)‡		
Compromise	.03	.08	−.01
	(.98)	(2.13)†	(−.45)
Extreme	−.08	−.08	−.04
	(−2.37)†	(2.10)†	(−1.60)§
Dominating	.08	.09	.02
	(2.37)†	(2.36)†	(.93)
Dominated	−.24	−.30	−.09
	(−7.46)*	(−7.69)*	(−3.32)*
Compromise × Assimilated		−.06	
		(−1.12)	
Extreme × Assimilated		.06	
		(1.11)	
Dominating × Assimilated		.01	
		(.26)	
Dominated × Assimilated		.17	
		(3.25)*	
Model R2	.14	.15	.11

Note: Values in parentheses are t-statistics. * = $p < .01$; † = $p < .05$; ‡ = $p < .1$; § = $p < .11$.

Data included *only* the existing brands. The dependent variable is (After Entry Consideration) − (Before Entry Consideration).

The within-subject design allows for an analysis of the changes of existing brands over the two periods. The dependent variable is the within-subject after-entry consideration set membership minus the before-entry one. For categories having two existing brands (Table 3), the results show that after the entry, an existing brand in an assimilated position ($p < .1$) or a dominating position ($p < .05$) is more likely to be in the consideration set. An existing brand in an extreme position ($p < .05$) or a dominated position ($p < .01$) is less likely to be in the consideration set. The compromise effect is positive but not significant. Again, the interactions between assimilation and the other factors contribute significantly more to model predictability than to the main effect of assimilation alone (F[3,1780] = 3.23, $p < .05$). The interaction between dominated and assimilation is positive and significant ($p < .01$). Thus, entry effects influence changes in consideration set membership.

Results for eight existing brands. The average consideration set size for the eight-brand market is 4.19 before new entry. After the entry of the ninth brand, the size is 4.36 for a dominating entry, 4.18 for an extreme entry, 4.08 for a dominated entry, and 3.98 for a compromise entry. Note that a compromise entry results in a decrease in consideration set size. On average, .84 fewer existing brands were considered after a compromise entry. The percentage of respondents that would consider the new entry is 86% for a dominating entry, 63% for a compromise entry, 30% for an extreme entry, and 7% for a dominated entry.

Regression analysis produces results that are generally directionally similar to those from the two brand markets (Table 2). A dominating position has a positive impact on

consideration ($p < .1$). A dominated position has a negative effect on consideration ($p < .01$). An extreme position has a negative impact on consideration ($p < .01$). However, here a compromise entry has a marginally significant negative impact ($p < .1$). In this case, the eight existing brands are spread out on the efficient frontier, spanning the meaningful range on product attributes. Hence, it is much harder for a compromise brand to be distinct than for a brand in a market of two existing brands.

Focusing on the impact of entry on changes in the consideration sets for existing brands, we see the results are similar to those of the two-brand case, though somewhat weaker. Specifically, the dominating effect, though still positive, fails to achieve significance in the eight-brand market.

By comparing the results of the two- and eight-brand markets, we see support for both H_4 and H_5. Clearly the dominating, compromise, and assimilation effects occur for the two-brand markets. With the exception of the compromise effect, the directions of the effects are the same in the eight-brand markets. Moreover, the magnitude of the effects are slightly greater for the extreme and dominating effects and noticeably larger for the dominated effect in the two-brand markets.

STUDY 2

Motivation

There are several limitations in Study 1. First, the within-subject design might produce a demand effect on subjects, because the first period's response tends to influence later responses. Second, contamination of consideration set, choice, and preference measures is a possibility. Third, all the products in Study 1 had two attributes. It is apparent that for more complex products, consumers are likely to use more than two attributes in their consideration. In Study 2, we attempt to address these issues.
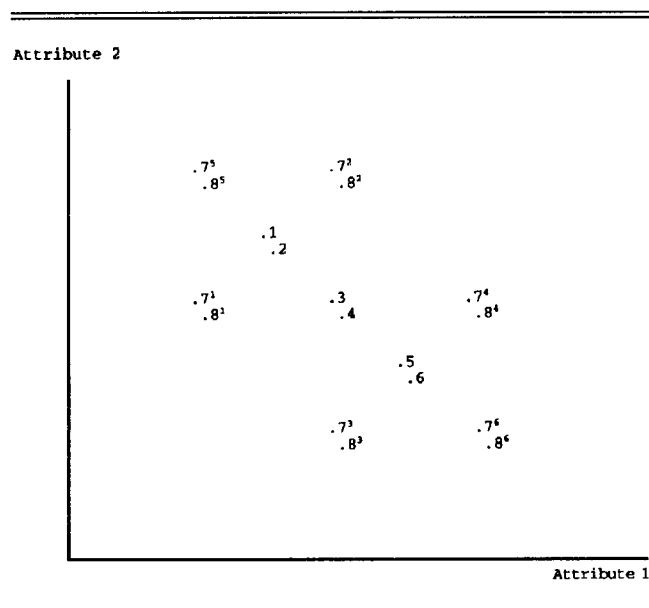
Design

A pretest on 17 subjects was carried out on eight products having four to six attributes taken from *Consumer Reports*.[1] In the pretest, product involvement, attribute familiarity, attribute meaningfulness, attribute importance, and attribute specification familiarity were measured.

On the basis of the pretest results, we chose two high-involvement (personal computers and compact sedans), two moderate-involvement (air conditioners and orange juice), and two low-involvement (light bulbs and stereo speakers) products. Compact sedans, orange juices, and light bulbs were described on two attributes, and personal computers, air conditioners, and stereo speakers were described on three attributes. The product categories, attributes, and brand specifications used in Study 2 are familiar and important to most

Figure 3
ENTRY POSITIONS IN THE TWO-ATTRIBUTE, SIX-BRAND MARKETS

ditions (dominating, dominated, extreme, and compromise). Two hundred twenty graduate business students participated in Study 2 as part of a class requirement.

In spite of efforts to make both ends of the efficient frontier equally desirable, in each of the markets a slight preference was evident for one end (e.g., high on attribute 1 and low on attribute 2 was preferred to low on attribute 1 and high on attribute 2). Although this may reduce the power of some tests, it is consistent with many real markets in which share is concentrated at one end of the product spectrum. We examined the impact when the entry brand attacks the more or less desirable brands in a post hoc analysis.

Analysis and Results

As expected, subjects had very similar responses to the two brands positioned close together. Table 4 reports the average percentage of subjects who would consider each of a pair of brands. We present the results so that brands 1 and 2 are in the less considered (desirable) area and brands 5 and 6 are in the more considered area in the product space. In the control condition, consideration set size averages 3.38 of the possible 6 existing brands. In the entry treatment conditions (in which two similar entry brands are introduced), the average set size was largest (4.20) when brands 1 and 2 were dominated by the entrants and smallest (3.56) when brands 1 and 2 dominated the entrants.

Here, the percentage of respondents who considered brands 1 and 2 drops significantly when the brands are dominated by entries compared with when they dominate entries or when they are in the control condition (17% versus 26% or 30%, $p < .05$). Similarly, brands 5 and 6's consideration level also drops significantly when they are dominated by entries compared with when they dominate entries or are in the control condition (53% versus 77% or 78%, $p < .05$). Brands 1 and 2 keep the same percentage as in the control condition when they are in the compromise positions after the entries, but lose 6% when they are in the extreme positions. Similarly, brands 5 and 6 lose 2% from their control condition level when they are in the compromise positions and 5% when they are in the extreme positions. These results are in line with those reported in Study 1. Interestingly, the decrease in consideration is slightly greater for weak than for strong brands, with the notable exception of dominated situations, in which the more desirable brands (5 and 6) show a substantial drop. Basically, the results suggest that it is

subjects (Appendix B), as shown by the pretest. Figure 3 presents brand positions in the two-dimensional case.

Study 2 uses a between-subject design. In the control condition, six existing brands are positioned in three pairs along the efficient frontier in the two- or three-attribute product space. In a given entry treatment condition, two entry brands in a pair are introduced with a brief statement indicating that they are new brands introduced only recently. We used pairs of brands with similar attribute structures for two main reasons. First, it greatly simplifies the design. Second, in many markets, major manufacturers offer a full line of essentially similar products, producing several clusters of products with similar attribute configurations.

To avoid measurement contamination, only consideration set is measured. The consideration set measure includes the following two items: "Which brand(s) would you like to keep for further consideration?" and "Which brand(s) are acceptable to you?"

Nine questionnaires were used to randomize the possible order effects. Each questionnaire consists of five product categories, a control condition, and four different treatment con-

Table 4
CONSIDERATION SET MEMBERSHIP (STUDY 2)

Brands	Control Condition (6 brands in 3 pairs)	Entry Conditions					
		1. 1 & 2* dominating	2. 1 & 2 dominated	3. 5 & 6 dominating	4. 5 & 6 dominated	5. 1 & 2 compromise	6. 5 & 6 compromise
1 and 2	30%	26%	17%	33%	24%	30%	24%
3 and 4	61%	63%	44%	56%	31%	57%	43%
5 and 6	78%	80%	71%	77%	53%	73%	76%
7 and 8 (new)	—	9%	78%	22%	93%	21%	49%
Total size	3.38	3.56	4.20	3.76	4.02	3.62	3.84
N =	220	148	145	145	148	148	146

Note: Data are aggregated across six product categories.
*Brand's numbers correspond to those in Appendix B.

Table 5
THE IMPACT OF NEW ENTRY ON CONSIDERATION SETS: REGRESSION ANALYSIS (STUDY 2)

Independent variable	Aggregate results	Entry attacking less considered existing brands	Entry attacking more considered existing brands	Existing brands only[c]
Intercept	.31	.18	.42	.23
	(4.53)*	(2.04)†	(4.69)*	(2.63)*
Compromise	−.01	−.01	.01	−.00
	(−.31)	(−.57)	(.45)	(−.01)
Extreme	−.03	−.08[b]	.02[b]	−.02
	(−1.75)‡	(−3.22)*	(.78)	(−1.21)
Dominating	.17	.20	.15	.02
	(11.54)*	(11.13)*	(8.02)*	(.76)
Dominated	−.26	−.16[a]	−.35[a]	−.17
	(−18.42)*	(−8.86)*	(−18.42)*	(−8.40)*
Compromise and asymmetric dominating	.04	.23[a]	−.17[a]	.06
	(2.01)†	(9.71)*	(−6.65)*	(2.83)*
Compromise and asymmetric dominated	.16	.03[a]	−.34[a]	−.14
	(−8.61)*	(1.05)	(−13.04)*	(−7.09)*
Model R²	.14	.25	.26	.13

Note: Values in parentheses are t-statistics. * = $p < .01$; † = $p < .05$; ‡ = $p < .1$.

Data are aggregated across six product categories.

[a]The two coefficients are significantly different at $p < .01$ level.

[b]The two coefficients are significantly different at $p < .05$ level.

[c]Entry brands were excluded and *only* six existing brands after entry were included in this column.

fairly easy to decrease the likelihood of a brand being considered (particularly by introducing a dominated entry) but difficult to increase it because consumers have a tendency to limit the size of their consideration sets and consideration of the new entrant accounts for almost all the increase in the size of the consideration set.

Similar to Study 1, regression analysis is used to summarize the results. The dependent variable is again a two-item measure of consideration ($r = .68$). The independent variables are dominating, dominated, compromise, and extreme effects, coded as in Study 1. In addition, Study 2 introduces two new variables: compromise and asymmetrically dominating and compromise and asymmetrically dominated. When a dominated (dominating) pair of entry brands attacks a pair of existing brands, the middle existing pair becomes a compromise and asymmetrically dominating (dominated) pair. The data are pooled across subjects, product categories, and brands, and the model includes subject and product dummies to control for subject and product differences.

The results show that the dominating, dominated, and extreme effects are as hypothesized and significant (Table 5), supporting H_1, H_2, and H_3. The dominating effect is positive ($p < .01$), the dominated effect is negative ($p < .01$), the extreme is negative ($p < .1$), and the compromise effect is not significant, consistent with the findings in Study 1. Also, the compromise and asymmetrically dominating effect is positive ($p < .05$), and the compromise and asymmetrically dominated effect is negative ($p < .01$). Interestingly, an asymmetrically dominating effect more than offsets the negative impact of a compromise position.

To test the impact of the target brands' desirability on the entry effects, the sample was split into two on the basis of whether the entry attacked the more or less desirable area. The two subsamples show significantly different effects ($p < .001$). Several interesting results appear. First, the dominated effect is weaker when the entry attack is in the less desirable area (difference significant at $p < .01$). Second, the extreme effect is negative when the attack is in the less desirable area but is slightly (but not significantly) positive when the attack is in the more desirable area (difference significant at $p < .05$). Third, the compromise and asymmetrically dominating effect is positive when the attack is in the less desirable area and negative when the attack is in the more desirable area (difference significant at $p < .01$). Finally, the compromise and asymmetrically dominated effect has a nonsignificant positive sign when the attack is in the less desirable area and a negative sign when the attack is in the more desirable area (difference significant at $p < .01$). Although many of these results appear intuitive (i.e., the negative dominated effect is stronger when the attack takes place in the more desirable area and the negative effect of being extreme disappears when a brand is extreme in the more desirable area), others require further research.

The entry effects reported here do not vary on the basis of average product involvement levels. Hence, consideration set membership may not be as sensitive to involvement as choice (Ratneshwar, Shocker, and Stewart 1987).

DISCUSSION

We investigate the impact of new brand entry on consideration set membership. Two experiments (one within-subject and one between-subject) involving a total of 332 subjects and 18 products provide credible empirical support for the hypothesized effects. The results show that becoming dominated or extreme after entry reduces consideration but that becoming dominating or compromise does not increase consideration, partly supporting H_1 and H_2. Also, assimilation has a significant impact, supporting H_3. Moreover, assimilation helps weak brands and hurts strong brands. Interestingly, these results also occur for small (two-existing brand) markets and are even somewhat stronger in small markets than in large markets, supporting H_4 and H_5. Also, where the entry brands attack seems to affect the entry effects, which calls for further research. Finally, a compromise position has a positive impact when the market is small and a negative one when the number of brands in the market increases to the extent that it is hard to stand out in the crowd.

Of course, there are limitations to this study that make drawing strong conclusions unwise. This study employed consumers in a paper-and-pencil task. Moreover, the brands were not available for physical inspection, only described on two or three attributes, and brand names were absent, suggesting that the results would be weaker in other situations. In addition, the design confounds the entry position with the brand's attribute values so no perfect control condition is available. Further studies employing different measurement orders and methods (e.g., multiple measures

of each construct) are clearly needed to substantiate these results as are studies that track the process (e.g., with concurrent or retrospective protocols) by which entry affects consideration, preference, and choice. Yet in spite of weak-

nesses, this study seems to provide encouraging support for focusing on changing consideration set membership as a primary impact of new brand entry. Obviously, further research is needed to corroborate and refine this conclusion.

Appendix A
TWO EXISTING BRAND MARKETS (STUDY 1)
(New entrants' positions are indicated by numbers corresponding to Figure 1)

Brands	Orange juice taste quality	Orange juice price 64f.o.	Cars mile per gallon	Cars ride quality	Calculator battery expected life(hr)	Calculator battery price pair	TV set picture quality (lines)	TV set durable (month)	Restaurant food quality	Restaurant price dinner for 2	Stock fund return rate annual	Stock fund relative risk 10 = best	Paper towel absorb	Paper towel strength	Stereo speaker sound quality	Stereo speaker price pair
existing:																
A	70	$2.29	36	65	14	$1.75	375	48	78	$ 70	28%	6.5	92	62	91	$340
B*	90	$3.49	21	98	26	$3.25	254	82	95	$120	9%	9.5	70	88	75	$175
entries:																
1	68	$2.39	34	62	13	$1.85	365	46	76	$ 73	27%	6.3	90	60	90	$355
1'	62	$2.69	28	53	10	$2.15	315	36	69	$ 82	23%	5.5	84	54	86	$395
2	68	$2.19	38	62	13	$1.65	385	46	76	$ 67	29%	6.3	94	60	92	$355
2'	62	$1.89	44	53	10	$1.35	435	36	69	$ 58	33%	5.5	100	54	95	$395
3	72	$2.19	38	68	15	$1.65	385	50	80	$ 67	29%	6.7	94	64	92	$325
3'	78	$1.89	44	77	18	$1.35	435	60	87	$ 58	33%	7.5	100	70	95	$285
4	72	$2.39	34	68	15	$1.85	365	50	80	$ 73	27%	6.7	90	64	90	$325
4'	78	$2.69	28	77	18	$2.15	315	60	87	$ 82	23%	7.5	84	70	86	$285

Note: *Brand B is the target existing brand, and brand number corresponds to that in Figure 1.

(New entrants' positions are indicated by numbers corresponding to Figure 2)

Brands	Beer price 6-pack	Beer quality	Apartment size sq.ft	Apartment close to campus (minute)	Walking shoes price	Walking shoes durable (month)	Camera lens quality	Camera price
existing:								
1*	$8.99	92	620	30	$33	12	61	$129
2	$8.49	90	590	27	$37	12	64	$149
3	$7.99	86	560	23	$43	15	68	$179
4	$6.99	81	520	19	$45	16	71	$229
5	$5.99	73	480	14	$52	20	77	$279
6	$4.99	64	450	11	$73	22	83	$319
7	$3.99	52	390	5	$84	26	91	$369
8	$2.99	44	360	2	$92	32	98	$409
entries:								
1'	$9.49	77	500	33	$48	10	58	$249
2'	$9.49	95	650	33	$29	10	58	$109
3'	$6.49	95	650	17	$29	18	74	$109
4'	$6.49	77	500	17	$48	18	74	$249

Note: *Brand number corresponds to that in Figure 2.

Appendix B
SIX EXISTING BRAND MARKETS (STUDY 2)

Brands	Orange Juice taste	Orange Juice nutritional value	Comp sedan reliability	Comp sedan mile p.g.	Light bulb usage life (hr)	Light bulb price pair	PC price	PC base memory	PC speed (MHz)	Air-conditioner cooling (btu/hr)	Air-conditioner energy efficiency	Air-conditioner price	Stereo speakers sound quality	Stereo speakers price pair	Stereo speakers power (watts)
existing:															
1*	76	83	80	39	1000	$1.25	$1600	4	25	5000	9.0	$275	89	$319	85
2	77	82	81	38	1100	$1.29	$1590	4	25	4900	8.9	$275	88	$315	80
3	83	75	85	35	1400	$1.45	$1400	2	20	5500	8.5	$300	83	$299	75
4	84	74	86	34	1500	$1.49	$1390	2	20	5400	8.4	$300	82	$295	70
5	90	67	90	31	1800	$1.65	$1200	1	16	6000	8.0	$325	77	$279	65
6	91	66	91	30	1900	$1.69	$1190	1	16	5900	7.9	$325	76	$275	60

Appendix B—(Continued)

Brands	Orange Juice		Comp sedan		Light bulb		PC			Air-conditioner			Stereo speakers		
	taste	nutritional value	reliabi-lity	mile p.g.	usage life (hr)	price pair	price	base memory	speed (MHz)	cooling (btu/hr)	energy efficiency	price	sound quality	price pair	power (watts)
entries:															
7[a]	83	91	85	42	1400	$1.05	$1400	6	32	5500	9.5	$250	95	$299	95
8[a]	84	90	86	41	1500	$1.09	$1390	6	32	5400	9.4	$250	94	$295	90
7[b]	69	75	75	35	600	$1.45	$1800	2	20	4500	8.5	$300	83	$339	75
8[b]	70	74	76	34	500	$1.49	$1790	2	20	4400	8.4	$300	82	$335	70
7[c]	97	75	95	35	2200	$1.45	$1010	2	20	6500	8.5	$300	83	$259	75
8[c]	98	74	96	34	2300	$1.49	$1000	2	20	6400	8.4	$300	82	$255	70
7[d]	83	55	85	27	1400	$1.85	$1400	.8	12	5500	7.5	$350	71	$299	55
8[d]	84	54	86	26	1500	$1.89	$1390	.8	12	5400	7.4	$350	70	$295	50
7[e]	97	55	95	27	2200	$1.85	$1010	.8	12	6500	7.5	$350	71	$259	55
8[e]	98	54	96	26	2300	$1.89	$1000	.8	12	6400	7.4	$350	70	$255	50
7[f]	69	91	75	42	600	$1.05	$1800	6	32	4500	9.5	$250	95	$339	95
8[f]	70	90	76	41	700	$1.09	$1790	6	32	4400	9.4	$250	94	$335	90

Note: [a]entries dominate 1 and 2. [b]entries are dominated by 1 and 2. [c]entries dominate 5 and 6. [d]entries are dominated by 5 and 6. [e]5 and 6 are compromise. [f]1 and 2 are compromise.

*Brand number corresponds to that in Figure 3.

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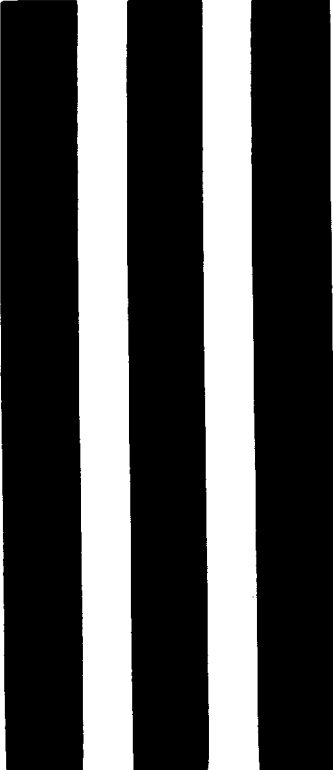
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