

**Achieving Late-Mover Advantage:
The Effects of Enhancing and Distinctive Strategies**

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(ABSTRACT)

Despite the fact that most firms are late entrants in any product market, research on how to achieve a late-mover advantage is limited and lags behind the theoretical work on first-mover advantage. The strategic choice a late mover can utilize to compete against the pioneer is largely underdeveloped. Further, extant studies provide contradictory arguments and predictions regarding the efficacy of two basic late entry strategies: an *enhancing strategy* (providing a late entrant with enhanced features along existing product attributes) and a *distinctive strategy* (adding new or unique features to a late entrant's offering). The goal of this dissertation is to better understand the underlying behavioral mechanisms that enable a late entrant to compete with a successful pioneer and thereby address this inconsistency in the literature.

Taking a category-based learning perspective, it is proposed that new brands are learned through a comparison process with existing brands. In the process, common features are evaluated in a category-based mode while unique features are processed in a piecemeal fashion. Two behavioral mechanisms are identified – discrepancy effects (i.e., perceived differentiation) which add to the late entrant's visibility and attractiveness, and ambiguity effects (comparison difficulty and perceived performance risk) that lessen the late entrant's attractiveness. Product category familiarity is proposed as the key moderator that affects the salience of each behavioral mechanism and hence the effectiveness of late entry strategies.

Three experiments were designed to test the proposed perspective. It was found that common features are the focus of comparison in unfamiliar product classes and unique features receive particular attention in familiar product classes. Accordingly, ambiguity effects become more salient in unfamiliar product categories while differentiation effects are more prominent in familiar product cases. Further, a distinctive strategy is both more differentiated and more ambiguous than an enhancing strategy. Thus, a distinctive strategy is more effective in a familiar product class due to its attention-grabbing nature. An enhancing strategy is more successful in a novel or unfamiliar product class because of low levels of ambiguity. These findings provide important implications for product entry and positioning strategies as well as for further research.

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CHAPTER 1 INTRODUCTION

1.1 Problem Statement

Achieving a sustainable competitive advantage is a central issue for any business enterprise (Day and Nedungadi 1994; Hunt and Morgan 1995; Porter 1985). In the past two decades, numerous studies have been conducted to investigate whether a pioneering strategy can lead to a competitive advantage. Research has shown that a pioneer can benefit in a number of ways such as economic factors, preemption factors, technological factors, and behavioral factors (Kerin, Varadarajan, and Peterson 1992). Substantial empirical evidence suggests that the effect of first-mover advantage not only exists, but is also robust (cf. Lieberman and Montgomery 1998).

The focus of most studies in the literature, however, has been on first-mover advantage and research on late-mover advantage is limited, with a few exceptions such as Carpenter and Nakamoto (1990), Shankar, Carpenter, and Krishnamurthi (1998, 1999), and Zhang and Markman (1998). Our understanding of the mechanisms that assist late movers lags behind the theoretical work on first-mover advantage, and the mechanisms and strategies that help followers outsell pioneers still need to be more carefully explored (Lieberman and Montgomery 1998, p. 1122). Given that more firms in any product-market setting are late entrants than pioneers, research on the options and opportunities available to late entrants is at least as important as research on pioneering advantages (Kerin, Varadarajan, and Peterson 1992).

Recently, a research stream has emerged to study first-mover advantage and order-of-entry effects from consumer behavioral perspectives (Carpenter and Nakamoto 1989, 1996; Kardes and Kalyanaram 1992; Kardes et al. 1993; Muthukrishnan 1995; Zhang and Markman 1998). However, while extant studies agree that one particular late entry strategy, the me-too

strategy, may not be a desirable choice to overtake pioneers, they provide contradictory arguments and predictions regarding the efficacy of two basic strategies: an *enhancing strategy* (providing a late entrant with enhanced features along existing product attributes) and a *distinctive strategy* (adding new features to a late entrant's offering). More importantly, it is not clear how these two strategies enable late movers to overcome the pioneering advantage and under what conditions one alternative is more effective than the other. For example, Carpenter and Nakamoto (1989) suggest that in a novel product class, a distinctive strategy is desirable for late entrants to overcome pioneering advantage. Kardes and Kalyanaram (1992) argue that a distinctive strategy may be ineffective in a familiar product class. Zhang and Markman (1998) find that in a familiar product class, an enhancing strategy can enable a late entrant to achieve late-mover advantage but a distinctive strategy cannot.

To resolve the controversy in the extant literature, this dissertation takes a category-based learning perspective to conceptualize the process underlying the new brand learning and evaluation. It is proposed that new brands are learned through a comparison process with existing brands. In the process, common features are evaluated in a holistic, category-based mode; while unique features are processed in a piece-by-piece fashion. Accordingly, discrepancy effects (i.e., perceived differentiation) and ambiguity effects (i.e., comparison difficulty and perceived performance risk) are the key mechanisms that either help or hinder a follower to achieve a late-mover advantage. Further, product category familiarity shapes the focus of the comparison process. In a familiar product class, common features are the focal output of the comparison; while in an unfamiliar product class, unique features will receive particular attention. Consequently, the salience of discrepancy and ambiguity effects will be moderated by category familiarity: discrepancy effects are more salient in familiar product

classes and ambiguity looms larger in unfamiliar product classes. Compared to an enhancing strategy, a distinctive strategy is both more differentiated and more ambiguous. Thus, a distinctive strategy is more effective in a familiar product class due to its attention-grabbing nature. An enhancing strategy is more successful in a novel or unfamiliar product class because of low levels of ambiguity.

This dissertation also enriches our understanding of the application of categorization models in consumer decision-making contexts in two ways. First, by including decision ambiguity in the model, the proposed perspective provides additional explanations for why discrepancy effects (i.e., moderate incongruity leading to positive evaluations) sometimes do not exist (e.g., Goodstein 1993; Mandler 1982; Meyers-Levy and Tybout 1989; Peracchio and Tybout 1996). Further, this thesis considers explicitly the effects of category novelty on consumer information processing strategies. That is, if a category is particularly novel and little prior category knowledge can be retrieved from existing category schema, then category-based mode tends to be the focus of the information processing.

In sum, the primary focus of this dissertation is to examine from a behavioral perspective the efficacy of enhancing and distinctive strategies and under what conditions one strategy is more effective than the other. The reasons and the research significance are further discussed in the following section.

1.2 Research Significance

From behavioral and psychological perspectives, achieving late-mover advantage through a distinctive strategy seems consistent with the consumer preference formation explanation of pioneering advantage (Carpenter and Nakamoto 1989, 1996). Carpenter and Nakamoto argue that, in a new product class, a pioneering brand can shape consumer preference during the

consumer learning process. As a result, consumers form a preference structure that favors the pioneer, which makes it difficult for late entrants to “compete away” the pioneer’s large market share, even if brands can reposition and switching costs are minimal. Carpenter and Nakamoto (1990) further suggest, for late entrants, *me-too strategies* are likely to suffer in competing with an entrenched pioneer because me-too brands are perceptually overshadowed by the pioneer and thus are less distinct. To be *distinctive* from the early entrant would be a better way to be successful. By adding new features in their products, late movers can restart the learning process. The market then will be redefined and late entrants become associated strongly with the reshaped product category. Therefore, late entrants with a *distinctive strategy* may gain an advantage over pioneers just as pioneers gain advantages when they first introduce the products into the market (Carpenter and Nakamoto 1994; Shankar, Carpenter, and Krishnamurthi 1998).

Kardes and Kalyanaram (1992) further argue that, even in an existing, familiar product class, when preferences are well defined but buyers must learn about the products, consumers still have a favorable attitude toward the first mover over late entrants. This may be because consumers perceive the shared features of a pioneer and a follower as novel and interesting for the pioneer, but as redundant and unexciting for the follower. Since novel information is more attention-drawing, the pioneer can enjoy an advantage over the follower if the follower only duplicates the pioneer’s attributes. This implies that a *me-too strategy* is unlikely to be successful even in a familiar product class market. Moreover, consumers may truncate the information search process when exposed to the shared/redundant features of a follower brand, which means they may not even notice the unique features of a follower. As such, it is difficult for late entrants to differentiate themselves because their unique features cannot be recalled well by consumers (Kardes et. al. 1993). According to these arguments, it seems for late entrants, a *distinctive*

strategy may not be effective in a familiar product market, even if they are objectively superior to the pioneer.

The apparent disagreement between Carpenter and Nakamoto (1989) and Kardes and Kalyanaram (1992) may arise from the different research contexts of product classes: the former researches in a novel product context while the latter studies in a familiar product case. Zhang and Markman (1998) suggest that a more fundamental explanation may lie in the way through which new brands are learned. From a reminding-based learning perspective, Zhang and Markman argue that new brands are learned through a comparison process with the existing brands and the comparison is essentially a *similarity judgement* process, where common features receive particular attention (p. 414). However, in a comparison process, commonalities (i.e., matching elements between compared items) are not diagnostic because they do not provide much valuable information to the judgment (this implies that a *me-too strategy* may not be desirable to compete successfully with the pioneer). Alignable differences (i.e., corresponding aspects of compared items that differ) thus become the focus of the comparison and receive special attention and elaboration. In contrast, nonalignable differences (i.e., unique features) are “not a focal output of comparison and often are ignored” (p. 414). As a result, enhanced features could enable an objectively superior late mover to overcome the early entrant advantage but unique features cannot. Therefore, Zhang and Markman suggest that an *enhancing strategy* is an effective way to achieve a late-mover advantage but a *distinctive strategy* is not.

Then a natural question is why a distinctive strategy, which adds *unique features* to a product, is not effective. This prediction seems at odds with strategic marketing and management literatures, where innovation and distinctiveness are enthusiastically advocated as key factors for business success (e.g., Drucker 1954; Porter 1985; Shankar, Carpenter and

Krishnamurthi 1998). This prediction is also contradictory to what we know about the market, where many products are differentiated and highlighted by unique features and some have successfully overtaken the pioneering brands (Golder and Tellis 1993; Schnaars 1994).

In sum, extant literature provides contradictory arguments and predictions regarding the efficacy of enhancing and distinctive strategies. More importantly, the underlying process through which late entrants are learned and evaluated is still not clear. Is it a novel attribute information learning and truncation process (i.e., the model of Kardes and Kalyanaram 1992), or is it basically a similarity judgment process (i.e., the model of Zhang and Markman 1998), or are other cognitive perspectives needed to reconcile the controversies? This research intends to investigate these questions and tries to explain the mechanisms for late entrants to achieve late-mover advantage. These issues have important theoretical significance as well as managerial implications for late movers' entry, differentiation, and positioning strategies.

1.3 Research Questions

Given the limitations of extant research on late-mover advantage, several important issues remain to be investigated:

- (1) What is the underlying process through which new brands are learned and evaluated?
- (2) What are the behavioral mechanisms that enable an enhancing strategy or a distinctive strategy to overcome pioneering advantage?
- (3) Under what conditions is a distinctive strategy more effective than an enhancing strategy, and under what conditions an enhancing strategy more effective?

This dissertation takes a category-based learning perspective to examine the underlying process through which new brands are learned and evaluated and how distinctive and enhancing strategies effects this learning and evaluation process differently. It is proposed that new brands are learned through a comparison process with existing brands. In the process, common features are evaluated in a category-based mode and set up the basis for late entrants to free ride a

pioneer's market efforts; unique features are evaluated in a piece-by-piece fashion. Whether unique or common features are the focus of the comparison depends on whether the product category is a familiar or unfamiliar one.

From this perspective, *discrepancy effects* (i.e., perceived differentiation) and *ambiguity effects* (i.e., perceived performance risk and comparison difficulty) are the key mechanisms that either help or hinder followers to achieve a late-mover advantage. Compared to an enhanced entrant, a distinctive entrant is both more discrepant and more ambiguous. Thus, it may be judged to be more favorable because of its novelty and uniqueness. On the other hand, it may be perceived as less favorable due to its ambiguity. On balance, which strategy is more effective, an enhancing strategy or a distinctive strategy? This dissertation suggests the efficacy of an enhancing vs. distinctive strategy may be moderated by a number of factors such as task factors, product variables, and personal characteristics. For example, a distinctive strategy may be more effective in a familiar product class. The effects of category type (i.e., unfamiliar or familiar product classes) will be investigated in this dissertation.

1.4 Organization of the Dissertation

The structure of this dissertation is as follows. Following this introductory chapter, Chapter 2 will review the literature pertaining to first-mover advantage and disadvantage, late entry strategy, various behavioral perspectives on order-of-entry effects, and relevant moderating factors. Chapter 3 proposes a model conceptualizing the new brand learning process to resolve the controversy in the current literature. Hypotheses are developed based on the proposed perspective. Chapters 4 and 5 contain the experimental design, sample, stimulus, procedures, and the measures, and present the empirical analyses and results. Chapter 6 will discuss the findings as well as managerial and research implications.

CHAPTER 2 LITERATURE REVIEW

This chapter reviews the literature pertaining to first-mover (dis)advantage and late entry strategies, various behavioral perspectives on order-of-entry effects, and relevant moderating factors. The chapter first discusses from a strategic marketing perspective the rationales for and against the pioneering advantage and then reviews from a behavioral perspective the late entry strategies that new brands could use to position themselves as compared to the pioneer. Following this, major behavioral models on order-of-entry effects are examined and critiques are generated to provide the direction for further theoretical development. Finally, this chapter discusses possible moderators that may affect the efficacy of late entry strategies.

2.1 First-Mover (Dis)Advantage and Late Entry Strategy

2.1.1 First-Mover (Dis)Advantage

First-mover advantage (or pioneering advantage) refers to the ability of surviving pioneering firms to enjoy a larger market share or earn more positive economic profits than surviving late entrants (Lieberman and Montgomery 1988). In the past two decades, numerous studies have been conducted to investigate whether a pioneering strategy can lead to a competitive advantage. Research has shown that a pioneer can benefit in a number of ways such as economic factors, preemption factors, technological factors, and behavioral factors (cf. Kerin, Varadarajan, and Peterson 1992). For example, a first mover may achieve economic benefits such as scale and experience economies (Robinson and Fornell 1985). A pioneer can also gain advantage by preempting rivals in the acquisition of scarce resources such as the most attractive space or locations (Lieberman and Montgomery 1988). Technological factors such as innovations may also reward a first mover in terms of cost or differentiation advantage (Lieberman and Montgomery 1988). From a behavioral perspective, pioneering advantage can

arise from the process by which consumers learn about brands and form their preferences. The process can produce a preference structure that favors the pioneer, making it difficult for late entrants to “compete away” the pioneer’s large market share, even if brands can reposition and switching costs are minimal (Carpenter and Nakamoto 1989). Empirical studies have provided substantial evidence for the first-mover advantage (cf. Lieberman and Montgomery 1998).

However, the mechanisms that benefit the pioneers may be counterbalanced by a number of disadvantages. These disadvantages include (1) free-rider effects, (2) shifts in technology, (3) shifts in customer needs, and (4) incumbent inertia (Lieberman and Montgomery 1988). First, because imitation costs are usually much lower than innovation costs, late entrants may be able to free ride on a pioneering firm’s investments in a number of areas such as technology development, buyer education, and market development (Fershtman, Mahajan, and Muller 1990; Schnaars 1994). Second, late entrants may exploit technological discontinuities to overtake the pioneers. Innovative late entrants can revolutionize existing industries with new products and processes, and become first movers in the next technological phase (Scherer 1980). Third, shifts in consumer needs create opportunities for late entrants to better deliver customer values than pioneers. A market is usually not very well formed at the beginning, which means the early adopters may be quite different from later adopters (e.g., personal computer industry). Market change and consumer-need shifts thus provide great opportunities for late entrants (Schnaars 1994). Finally, incumbent inertia may inhibit the ability of the pioneers to respond to environmental change or competitive threats. Although incumbent inertia is often a rational and profit-maximizing response, it may lead to organizational inflexibility when the firm is locked-into a specific set of assets or is reluctant to cannibalize existing product lines (Lieberman and Montgomery 1988). Empirical evidence of first-mover disadvantage mainly comes from case

studies or historical analysis (e.g., Golder and Tellis 1993; Schnaars 1994; Sullivan 1991). For example, Golder and Tellis (1993) find that market pioneers continue to be market share leaders in only 4 out of 50 product categories studied. The average market share of pioneers is only 10 percent and their failure rate is 47 percent. By comparison, early market entrants have low failure rates (8%) and large average market shares (28%). Schnaars (1994) shows that late entrants have overtaken pioneers in various markets such as personal computers, food processors, cameras and light beer.

In sum, being a pioneer may both benefit and suffer from a number of factors. Pioneering as a strategic choice may also depend on a firm's possessed resources and capabilities (Lieberman and Montgomery 1998). In reality, however, entering late is necessarily more common than entering first because only one company can be the pioneer in any product market (Schnaars 1994). In some cases, when to move may not be a matter of strategic choice. Rather, being late entrants is the only realistic option for some businesses, especially for companies in developing countries who seek opportunities in the international market (Cho, Kim, and Rhee 1998). Then how to achieve a late-mover advantage is a central issue for many businesses. That is, how can a late entrant take advantage of a pioneer's efforts to catch up with and eventually overtake the pioneer?

Existing theoretical and empirical analyses on order-of-entry effects have mainly focused on the mechanisms associated with pioneering advantages. These studies have provided insightful implications for late movers' marketing strategies (e.g., Bowman and Gatignon 1996; Carpenter and Nakamoto 1990, 1996; Urban et al. 1986). However, our understanding of the mechanisms that assist late movers lags behind the theoretical work on first-mover advantage, and the mechanisms and strategies that help followers surpass pioneers still need be more

carefully explored (Lieberman and Montgomery 1998, p. 1122). Given that more firms in any product-market setting are late entrants than pioneers, research on the options and opportunities available to late entrants are at least as important as research on pioneering advantages (Kerin, Varadarajan, and Peterson 1992).

More recently, there is a rising research interest on why and how late entrants outperform pioneers (Shankar, Carpenter, and Krishnamurthi 1998, 1999; Zhang and Markman 1998). Based on innovation diffusion theory, Shankar, Carpenter, and Krishnamurthi (1998) suggest that innovative late entrants are more profitable than early entrants. To identify the underlying mechanisms enabling the late-mover advantage, they develop a brand-level model which captures diffusion and marketing mix effects on brand trials and repeat purchases. They empirically test the model with the data from 13 brands in two pharmaceutical product categories. The results show that innovative late entrants can grow faster, slow the pioneer's diffusion, and reduce the pioneer's marketing spending effectiveness, and consequently, overtake the pioneer and create a sustainable advantage. In contrast, noninnovative late entrants face smaller potential market, lower repeat rates, and less marketing effectiveness compared with the pioneer.

From a behavioral perspective, Zhang and Markman (1998) suggest that late entrants can differentiate themselves from the pioneer through either alignable differences (common and comparable features) and nonalignable differences (unique features). They further suggest, because alignable differences are easier to compare and remember than unique features, objectively superior late entrants with alignable differences are able to overcome the pioneering advantage, but objectively superior late entrants with unique features can not. These arguments

are well supported in three experiments, where subjects are asked to evaluate brands of a familiar product class, Popcorn.

An obvious disagreement arises between Zhang and Markman (1998) and Shanker, Carpenter, and Krishnamurthi (1998). While the latter suggests that to be innovative is the key to achieving a late-mover advantage, the former argues that late entrants with unique features are unlikely to overcome pioneering advantage. Why does this contradiction arise? And which strategy is more effective, to be an innovative entrant with unique features, or to be an entrant with enhanced features? This research intends to answer these questions by investigating the underlying mechanisms that enable late entrants to surpass early entrants from a consumer behavioral perspective.

2.1.2 Late Entry Strategy

From a behavioral perspective, a pioneer could shape consumers' learning process and move their taste distribution toward the pioneer's position. As a result of this learning process, the pioneer will be perceived as the representative of the product category and the standard against which all late entrants are judged (Carpenter and Nakamoto 1989).

Thus, for late entrants, it seems necessary to position them as *associative* with the pioneering brand to take advantage of the pioneer's efforts spent in developing the market. To be a pioneer is very expensive. It takes tremendous amount of resources and time (years or even decades) to transform a major new product idea into a commercially successful product. Consumer education needs huge amount of awareness advertising expenses (Lieberman and Montgomery 1988; Urban et al. 1986). In contrast, imitation is much cheaper. By imitating the key characteristics of the pioneering brand, late entrants could set up the association with the

pioneer and thus could be easily recognized as a similar product to the pioneer, which means they may be *readily acceptable* by the market.

Clearly, a late entrant can be a free-rider by simply selling an exact duplicate of the pioneer's product. This strategy, the so-called "me-too" strategy, competes with the pioneer mainly on price (Schnaars 1994). However, imitation alone may not enable a late entrant to surpass the pioneer. If a late entrant positions itself as an exact "copycat" of the pioneering brand, it becomes less distinct and the pioneer more perceptually dominant (Carpenter and Nakamoto 1989). As such, consumers may not remember any particular copycat and this lowers a me-too brand's chance of entering the consideration set (Kardes et al. 1993). Therefore, for late entrants, the key to success is not only to be *associative* with the pioneer through imitation, but also to be *distinctive* from the pioneer with their own distinguishing features.

Specifically, late entrants can differentiate themselves by positioning as superior on one or more determinant attributes (Dickson and Ginter 1987; Sujan and Bettman 1989). One key decision is the choice of the attribute(s) on which to claim superiority (Pechmann and Ratneshwar 1991). Two alternative strategies are available for late entrants: an enhancing strategy and a distinctive strategy. First, a late mover could provide a product with *enhanced* features along existing product attributes. This strategy, defined as an *enhancing strategy* in this thesis, makes the late entrant an "enhanced late entrant" (Zhang and Markman 1998, p. 416). By emphasizing the superiority on an existing (usually typical) attribute associated with the well-known brand in the category (in this case, the pioneer), the late entrant might beat a pioneer at the pioneer's own game (Shankar, Carpenter, and Krishnamurthi 1998). Second, a late mover can add new features to its offering and makes it *distinctive* from the pioneering brand. This strategy, named as a *distinctive strategy* in this thesis, can change consumer weighting of product

attributes and reshape consumer preference, which in turn, may enable a late mover to overtake the pioneer (Shankar, Carpenter, and Krishnamurthi 1998). The key difference between an enhancing strategy and distinctive strategy lies in that the former positions a late entrant as *superior* along *existing* product attributes, while the latter claims its *superiority* and *distinctiveness* on the *new* features.¹

A late mover may be able to introduce a product with both enhanced and distinctive features. For instance, in Zhang and Markman's (1998) example of Web browsers (Explorer vs. Netscape), Netscape is the pioneering brand and Explorer is a late entrant. Similar to Netscape, Explorer allows users to browse the Web. It also enables users to hear CD-quality sound, but Netscape only permits regular sound. And Explorer also introduces a new feature that permits Web exploration from within familiar applications such as Word and Excel. Bill Gates, chairman of Microsoft, referred to this strategy as "embrace and extend," i.e., embracing current Internet standards and then extending them.

While ideally it would be better off to make improvement by both enhancing existing features and adding new features, only companies as wealthy as Microsoft have the ability to do so. For most businesses, this strategy is desirable but not practical because it takes tremendous resources to make improvement along different dimensions. Actually, it is more common for late entrants to introduce new products that differ from existing alternatives only on one attribute (Meyers-Levy and Tybout 1989, p. 43; Banbury and Mitchell 1995, p. 164). Therefore, the focus of this dissertation is to study the effectiveness of enhancing and distinctive strategies in achieving late-mover advantage.

¹ In practice, a distinctive strategy can be also achieved based on common features that have not been emphasized by early entrants (Hoch and Deighton 1989, p. 13). As long as no firms have claimed these common features, late mover can make them very salient and thus distinctive from existing brands (e.g., a low-cholesterol ice cream, Pechmann and Ratneshwar 1991).

2.2 Behavioral Perspectives

From a behavioral perspective, pioneering advantage occurs when consumers prefer the pioneer to an objectively superior but later-encountered brand (Kardes and Kalyanaram 1992; Muthukrishnan 1995; Zhang and Markman 1998). Early behavioral/economic perspectives on first-mover advantage center around the risk of trying new products and switching costs (Lieberman and Montgomery 1988). For example, a successful pioneering brand generally possesses a high degree of consumer awareness and product trial, which consequently leads to a satisfactory purchase or consuming experience. In such a case, when late brands appear in the market, because consumers lack enough information on the late products' quality, they may rationally stick with the pioneering brands and thus behave as brand loyal (Schmalensee 1982; Alpert and Kamins 1994). Further, even if late entrants can provide consumers with perfect information, consumers may still be reluctant to switch to late brands because of possible switching costs. Switching costs can arise in various ways, such as initial costs or investments that buyers spend in adapting to the pioneering brands, time and resources due to supplier-specific learning, or contractual switching costs which may be intentionally created by the seller (Lieberman and Montgomery 1988). Similarly, Hauser and Wernerfelt (1990) argue that late entrants may find it difficult to penetrate the consumer's consideration sets of acceptable brands due to information searching and decision making costs incurred with consideration of late entrants.

More recently, a research stream has emerged which tries to explain first-mover advantage from consumer behavioral perspectives (Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992; Kardes et al. 1993; Muthukrishnan 1995). These studies examine more precisely the underlying cognitive mechanisms that lead to first-mover advantage and suggest

that “considerable first-mover advantage may result from consumer cognitive processes” (Lieberman and Montgomery 1998, p. 1121).

These studies have greatly advanced our understanding of the cognitive mechanisms that mediate the pioneering advantage and undoubtedly provided important insights on how late entrants can overtake pioneers. Building on these insights, Zhang and Markman (1998) investigate how enhanced late entrants overcome first-mover advantage with enhanced features. With this in mind, the next section will review various behavioral perspectives on the first-mover advantage and late entry strategies. These perspectives include: (1) consumer learning and preference formation, (2) information learning and integration, (3) reminding-based learning and structural alignability, and (4) decision ambiguity and incumbent advantage.

2.2.1 Consumer Learning and Preference Formation Perspective

Carpenter and Nakamoto (1989) focus on consumer preference formation process to explain why a pioneering advantage is present even in mature markets where brands reposition and switching costs are minimal (in other words, why the pioneer achieves a great level of brand loyalty in such a market). They argue that a pioneer advantage may arise from the process by which consumers learn about brands and form preferences. First, if a product category is particularly novel, consumers may have little initial knowledge (Alba and Hutchinson 1987). As such, consumer’s preferences of the product may be weakly formed and the product’s ideal attribute combination is ambiguous (Howard and Sheth 1969). In the case of an emerging market, consumers form their preferences through trial, which implies experiencing only with the pioneering brand for a considerable period. With repeat purchases and advertising reinforcement, consumers may develop a naive theory of how to value attribute combination of the novel product based on their learning experience with the pioneering brand (Hoch and Ha 1986). In

other words, the attribute combination of the pioneer will influence consumer perceptions of an ideal product and move their taste distribution toward the pioneering brand's position. As a result, consumers form a preference structure that favors the pioneer, which makes it difficult for late entrants to "compete away" the pioneer's large market share, even if brands can reposition and switching costs are minimal. Basically, this preference formation mechanism is consistent with the category-learning perspectives. While category-learning perspectives have advanced various knowledge organization principles such as scripts, schemas, categories, and rules (Alba and Hutchinson 1987; Sujan 1985; Ozanne, Brucks, and Grewal 1992; Cohen and Basu 1987), the preference formation perspective represents a special case where consumers learn from a single example (the pioneering brand).

Further, the pioneer can achieve a competitive advantage from the learning process by being strongly associated with a product category and becoming the "standard" against which all late entrants are judged. During the learning process, consumers are likely to organize product knowledge about prototypical examples and use them as cognitive referents (Cohen and Basu 1987). Being the first available brand, the pioneer tends to be perceived as the exemplar or prototype of a product category. Therefore, it is difficult for me-too brands to compete against the pioneer because me-too brands are perceptually overshadowed by the pioneer and are less prominent. A *me-too strategy* is thus unlikely to overtake the pioneer. The prototype effects can even make it difficult for differentiated late entrants to overtake the pioneer. This is because, consumers have to make trade-offs between the differentiated brand's attribute combination and pioneer's, while the inferred attribute weights usually favor the pioneer, given that the individuals' attribute and ideal points were initially ambiguous. As a result, a pioneering brand can benefit from being prototypical of a product category. Nevertheless, Carpenter and

Nakamoto (1989) suggest that to be *distinctive* from the pioneer would be a better strategy for late entrants. However, “exactly how one does so is unclear” (Carpenter and Nakamoto 1989, p. 297).

Summary and Implications for Late Entry Strategy

The consumer learning and preference learning perspective provides valuable insights into our understanding of the psychological mechanisms underlying first-mover advantage. It suggests that late entrants can effectively compete against a pioneer in at least two ways. First, just as Carpenter and Nakamoto (1989, 1990) suggest, a late entrant can diminish the impact of the first mover’s distinctiveness by *influencing* consumers’ preferences rather than *responding to* them. By positioning *distinctively* from the pioneer, the late entrant can increase its own prominence and establish a more desirable position. For example, discontinuous innovation can help a late mover establish a new subcategory and become a prototype in that subcategory (e.g., electric toothbrush, decaffeinated sugar-free colas). Achieving late-mover advantage through a distinctive strategy is consistent with the consumer preference formation explanation of pioneering advantage. Further, continuous innovation may also be able to help late movers outsell the pioneer. By adding new features in their products, late movers can restart the learning processing. The market then will be redefined and late entrants become associated strongly with the reshaped product category. As a result, late entrants with a distinctive strategy may gain an advantage over pioneers (Shankar, Carpenter, and Krishnamurthi 1998).

Second, although not recognized by Carpenter and Nakamoto (1989), a late entrant may also outsell the pioneer and beat the pioneer at its own game. In this case, the late entrant comes with enhanced features and thus dominates the pioneering brand. As such, the late entrant doesn’t reshape consumer’s preference formation, but beats the pioneering brand directly along

the attribute dimensions set up by the pioneer. Because a pioneering brand tends to be the exemplar of a category, late entrants may be learned through a comparison process with the pioneer (Carpenter and Nakamoto 1989; Cohen and Basu 1987; Zhang and Markman 1998). This provides an opportunity for a late entrant to overtake the pioneer and become the *new* exemplar of a product category.

An important assumption of the preference formation perspective is that the product category is particularly novel and the ideal attribute combination for that product category is ambiguous, so consumers lack the prior knowledge to assess the exact value of a product. Accordingly, their preferences are likely to evolve through product trial experiences and are subject to influences from companies (Hoch and Deighton 1989). Therefore, this perspective applies to novel product categories where consumer preferences are relatively ambiguous (e.g., discontinuous innovation, high tech products). However, studies have indicated that a pioneering advantage also exists in familiar product categories such as frequently purchased package goods (Urban et al. 1986). In this case, consumer preferences are well defined but they must learn about products. What's the underlying mechanism to explain pioneering advantage in these familiar product categories?

2.2.2 Information Learning and Integration Perspective

To explain pioneering advantage in familiar product classes, Kardes and Kalyanaram (1992) develop a model that views the learning and memory for product information as a function of sequential brand exposure. The model suggests that sequential exposure to product information creates a learning advantage beneficial to the pioneer. This is because, as the first brand in a new product category, the pioneer tends to be perceived as novel and interesting. Novel and interesting information is attention-drawing (Kahneman 1973) and can be easily

encoded into long-term memory (Anderson 1983). With repeated trials of the pioneer, consumers are likely to know more about the pioneering brand and become familiar with the pioneer. When a late mover, usually sharing many common features with the pioneer, appears on the market, much of its information will be perceived as redundant and not attention-drawing. Moreover, consumers are likely to stop the information search process when exposed to redundant information. As such, consumers may overlook the unique features of a late entrant because they simply truncate the information searching process. Based on these arguments, Kardes and Kalyanaram (1992) predict that consumers are more likely to recall both the shared features and unique features of the pioneer than those of late entrants.

Kardes and Kalyanaram (1992) then apply information integration theory to explain how consumers evaluate the pioneer and late entrants. Information integration theory suggests that when evaluating a product, consumers combine available information according to an integration rule into the overall evaluation. As such, the extremity of the overall evaluation and confidence in that evaluation will be influenced by the amount of available information (Anderson 1982, 1991; Lynch 1985). Since consumers are likely to learn more about the pioneer than about late entrants, they tend to make more extreme (generally positive) and more confident evaluations of pioneering brands than of late entrants. Kardes and Kalyanaram further argue that the information about the pioneer is stored in a rich, associative network in long-term memory while the information about late entrants is stored in an impoverished associative network. Therefore, the effects beneficial to the pioneering brand tend to be more pronounced over time.

From a slightly different perspective, Kardes et. al (1993) argue that brand retrieval and brand consideration also contribute to the pioneering advantage, independent of brand evaluation. Because consumers recall both the common and unique attributes of a pioneering

brand better than those of late entrants, the pioneering brand has a greater likelihood to be retrieved, considered, and selected than the follower.

Summary and Implications for Late Entry Strategy

Kardes and Kalyanaram's (1992) model portrays a fairly bleak picture for late entrants. According to their perspective, consumers perceive the shared features of a pioneer and a follower as novel and interesting for the pioneer, but as redundant and unexciting for the follower. Because novel information is more attention-drawing, the pioneering brand can enjoy a advantage over the follower if the follower only duplicates the pioneer's attributes. This implies a *me-too strategy* is unlikely to be successful in a familiar product class market. Moreover, consumers truncate the information search process when exposed to the shared/redundant features of a follower brand, which means they may not even notice the unique features of a follower. As such, it is hard for late entrants to differentiate themselves and even difficult for them to be included into the consideration sets because neither their unique features nor shared features can be easily recalled and retrieved (Kardes et. al. 1993). Therefore, it seems that for late entrants, a *distinctive strategy* may not be effective in a familiar product market, even if the late entrant is objectively superior to the pioneer.

This prediction is obviously contrary to what we know about the markets, where many examples have demonstrated that a late entrant can compete successfully with an early entrant (Schnaars 1994; Golder and Tellis 1993). An empirical issue in their study may be the use of as many as seven attributes of Popcorn for each brand to test the proposed theory. Accordingly, the unique features of a Popcorn may be perceived just as trivial or meaningless rather than as novel or interesting (examples of the unique features are: very crispy, no oil flavor, slightly less tough than other brand, slight butter flavor, etc.). Nevertheless, Kardes and Kalyanaram's (1992)

perspective provides an important implication on how to overcome pioneering advantage. That is, a late entrant should come with a really novel and unique feature which is attention-drawing. Advertising and promotion campaigns should also emphasize new usage situations based on this new and unique attribute.

The prediction is also contradictory to the Carpenter and Nakamoto's (1989) suggestion, which states that a distinctive strategy may be an effective way for a late entrant to outsell the pioneer. One possibility is that the contradiction arises because Carpenter and Nakamoto (1989) study pioneering advantage in a new product class, while Kardes and Kalyanaram (1992) in a familiar class. However, a theoretical issue in this framework may be the neglect of more fundamental cognitive mechanisms underlying a new brand learning process. According to categorization theory, new brand learning usually involves a comparison process with existing brands (Fiske 1982, 1985; Fiske and Pavelchak 1986; Ross, Perkins, and Tenpenny 1991; Spalding and Ross 1994; Sujan 1985; Sujan and Bettman 1989; Zhang and Markman 1998). This comparison process heavily affects consumer's perceptions and evaluations of the new brand, and thus, the order-of-entry effects.

2.2.3 Reminding-based Learning and Structural Alignability Perspective

Zhang and Markman (1998) argue that follower brands are learned through a *reminding-based category learning* process, in which new brands are compared with previous brands (Ross, Perkins, and Tenpenny 1991; Spalding and Ross 1994). In the order-of-entry context, this means the late entrants are compared with the pioneering brand, which is usually the prototype or representative of a product category (Carpenter and Nakamoto 1989). How and what aspects will be learned about late entrant, therefore, will be heavily impacted by the comparison process between the follower and pioneering brands.

Zhang and Markman (1998) believe the results of this comparison are highlighted by *similarity judgments*, and therefore, consumer perceptions of the new brand are “influenced by its *similarity* to previous brands” (p. 414). According to a similarity comparison model – structural alignability perspective (Goldstone 1994; Markman and Gentner 1993; Markman and Medin 1995), brand attributes can be classified into three categories: “*commonalities*, which are matching elements between a pair of items; *alignable differences*, which are corresponding aspects of a pair that differ; and *nonalignable differences*, which are aspects of one object that have no correspondence with the other” (Zhang and Markman 1998, p. 414).

In a comparison process, shared features (or commonalities) between a pioneer and a follower are not diagnostic because they do not provide much valuable information to the choice (Tversky 1977). This once again implies that a *me-too strategy* is not desirable for overcoming pioneering advantage. Zhang and Markman (1998) further argue that unique features of a follower (or nonalignable difference) are also not very helpful in differentiating the follower because these unique features are not comparable to the pioneer’s and thus can not be easily evaluated and recalled.

In contrast, a follower with enhanced features (or alignable difference) can overcome the first-mover advantage and become preferred to the pioneer because the enhanced features are comparable and consumers can easily identify the superiority of the follower with these enhanced features. In other words, the psychological mechanism underlying the effectiveness of alignable difference is *easy to compare* and *easy to justify* (Zhang, Kardes, and Cronley 2002). Alignable differences contrast brand feature levels along a common dimension. This may enhance the importance of these alignable attributes in a comparison process and make the comparison fairly easy to conduct (Slovic and Macphillamy 1974). Consequently, preference

judgement can be made with little difficulty and high confidence (Pham 1998). Further, alignable differences provide unambiguous information of the superiority of the brands under comparison. As such, there is no need for additional assumptions to make an evaluation. Therefore, consumers tend to make extreme (usually positive) evaluations about a late entrant with enhanced features (Zhang and Markman 1998).

Zhang and Markman's (1998) arguments are generally well supported in three well-designed experiments where subjects are asked to evaluate and recall the attributes of several brands of a frequently purchased product class, microwave popcorn. So they conclude, "consumers are more likely to prefer an objectively superior late entrants than earlier entrants when that late entrant has alignable differences with earlier entrants, but not when it has nonalignable differences with earlier entrants" (p. 423, underline added). This suggests that an *enhancing strategy* is an effective way to achieve a late-mover advantage and a *distinctive strategy* is not.

Summary and Implications for Late Entry Strategy

Zhang and Markman's (1998) model illustrates the importance of an *enhancing strategy* for late entrants to overcome the pioneering advantage, which is ignored by former studies (cf., Kerin, Varadarajan and Peterson 1992). The model also suggests a *me-too strategy* may not be able to overcome pioneering advantage. Further, the findings of both Kardes and Kalyanaram (1992) and Zhang and Markman (1998) suggest a *distinctive strategy* may not be an effective late entry strategy in a familiar product market.

Then a natural question is why a distinctive strategy, which adds *unique or innovative features* to a product, is ineffective. To be unique or distinctive has long been recognized as an effective strategy for success (Porter 1985). In some instances, brands can even successfully

differentiate themselves based on a unique attribute that appears to create a meaningful difference but actually, is irrelevant to the product (Carpenter, Glazer, and Nakamoto 1994). This irrelevant attribute, owned by a particular brand, is an example of “nonalignable difference”, according to Zhang and Markman’s categorization. However, in this case, the distinctive strategy enables a brand to achieve a differentiation advantage based on a unique attribute, which is even irrelevant to the product.

Theoretically, in Zhang and Markman’s model, an important assumption is that the comparison between late brands and the pioneering brand is essentially a *similarity judgment* process. This implies that commonality will be the focus of the comparison (Slovic and Macphillamy 1974; Tversky 1977) and alignable differences, accordingly, will receive particular attention. However, it is not clear why this process is just a *similarity judgment* process. There are a number of studies on categorization that suggest distinctive features (nonalignable differences) are also very important during a comparison process (e.g., Fiske 1982; Fiske and Pavelchak 1986; Mandler 1982; Sujana 1985; Sujana and Bettman 1989; Peracchio and Tybout 1996). So an important research question is, if the comparison is not simply a *similarity judgment* process, what other processes are involved in the comparison?

In the next section, I will review another perspective on order-of-entry effects – decision ambiguity and incumbent advantage (Muthukrishnan 1995). Then I will discuss how categorization literature may apply to the order-of-entry context and explain the process underlying order-of-entry effects.

2.2.4 Decision Ambiguity and Incumbent Advantage

The perspectives reviewed above explain order-of-entry effects based on learning and learning-related mechanisms. From a behavioral decision-making perspective, Muthukrishnan (1995) studies the influence of decision ambiguity on the incumbency advantage and suggests that decision ambiguity creates an advantage for the pioneering brand.

Ambiguity is defined as a “quality depending on the amount, type, and reliability and unanimity of information” (Ellsberg 1961, p. 657). Ellsberg further identifies “objectively” ambiguous situations as those where “available information is scanty or obviously unreliable or highly conflicting; or where expressed expectations of different individuals differ widely” (pp. 660-661). Following Ellsberg, Muthukrishnan (1995, p. 99) operationalizes ambiguity as “non-comparability among competing options in terms of the amount and type of decision-relevant information available.” For example, aloe vera and vitamin E may both be beneficial to skin health. If two competing brands emphasize different ingredients (aloe or vitamin E) that provide the same benefit, decision ambiguity arises, i.e., attribute trade-offs (i.e., between aloe and vitamin E) must be made to reach a choice solution. This operationalization is highly consistent with Hoch and deighton (1989)’s conceptualization of ambiguity: in the context of product evaluation, ambiguity refers to the potential for multiple interpretations of product quality. Ambiguity may arise when product attributes or features are difficult to evaluate and/or when two brands claim the same benefits but compete on a set of non-overlapping attributes (Ha and Hoch 1989; Hoch and Deighton 1989).

Muthukrishnan (1995) proposes that consumers prefer a superior late entrant to the incumbent under low ambiguity situations, i.e., when the two brands have the same set of attributes and attribute performance is easy to evaluate (the same case as the enhanced late

entrant in Zhang and Markman 1998). However, if the decision ambiguity level is high, and the initial trial does not make the pioneer's inferiority transparent, consumers will still stick to the pioneer even if the late entrant is objectively superior.

More specifically, Muthukrishnan (1995) suggests that experience and belief crystallization are two key factors that lead to incumbent advantage under high decision ambiguity. When decision ambiguity is high, additional information is needed to make a decision. In the order-of-entry context, experience with the pioneer provides additional information about the pioneering brand, including unique beliefs about the benefits and subtleties of the consumption experience. As a result, compared to the pioneer, late entrants may be in an inferior position because consumers lack experience with late entrants. In addition, belief crystallization may also enhance an incumbent advantage. Belief crystallization refers to "elaboration of attribute information to benefits caused by these attributes" (p. 100). Elaboration on the pioneer's benefits could increase the absolute amount of information available to pioneering brand and thus increase confidence in judgment (Anderson 1982). Therefore, if decision ambiguity level is high, and a pioneer is perceived favorably by consumers, late entrants may not overtake the pioneer even when they are objectively superior.

Summary and Implications for Late Entry Strategy

Muthukrishnan's (1995) model highlights the role of *decision ambiguity* in pioneering advantage. It also provides important implications for late entrants to overcome the pioneering advantage. Consistent with former perspectives, this model also implies the *me-too strategy* is not a good choice for a late entrant. A me-too brand can be easily judged less favorably because there is no decision ambiguity and the me-too brand lacks consumer experience and belief crystallization. Further, for objectively superior late entrants, reducing the ambiguity may be the

key for success. This implies an *enhancing strategy* may be an effective way to overcome the pioneering advantage, consistent with Zhang and Markman (1998). Muthukrishnan's model also implies a *distinctive strategy* may be able to overcome pioneering advantage as long as the decision ambiguity level is not very high. However, a distinctive late entrant usually comes with a unique feature, whose exact performance and the contribution to the product is not as easy to evaluate as an enhanced feature (Zhang and Markman 2001, p. 15). This implies that a distinctive strategy may be less effective than an enhancing strategy.

An interesting implication of Muthukrishnan (1995) is that if a new feature is hard to evaluate, it may be undesirable to use abstraction to make it comparable with an existing feature along a common dimension. For example, aloe vera and vitamin E are both beneficial to skin health but their exact value is hard to assess. If a late mover (e.g., with a new feature aloe vera) competes against the incumbent brand (with vitamin E) by claiming these two ingredients (aloe and vitamin E) provide the same benefit, decision ambiguity increases and disadvantages the late mover. Therefore, it seems that if a new feature is difficult to evaluate, reducing the comparability and positioning distinctively might be a better choice.

Another important implication is that, for a distinctive late entrant, additional information may enable it to compete with the pioneering brand. Because consumers are usually uncertain about the performance of a new feature, additional information such as brand and price cues may help them evaluate the attribute value based on inference. For example, as Carpenter, Glazer, and Nakamoto (1994) find, a brand differentiated by an irrelevant attribute (high ambiguity) is evaluated more favorably with a premium price than with a high price. In this case, a business actually gains more from providing an ambiguous and unique attribute.

Summary

In summary, while previous perspectives agree that me-too strategy may not be an effective way for a late entrant to outtake the pioneer, they provide inconsistent arguments and predictions regarding the effectiveness of enhancing and distinctive strategies. More importantly, it is not clear which underlying mechanisms enable late entry strategies to overtake pioneering advantage, and whether different conditions favor either an enhancing or a distinctive strategy. To investigate the efficacy of enhancing and distinctive strategies, it is necessary to examine the process through which consumers learn a new brand.

2.2.5 Categorization Perspective

A central factor that influences the learning of a new brand is consumer's existing product category knowledge or category schema (e.g., Alba and Hutchinson 1987; Bettman, Johnson, and Payne 1991; Cohen and Basu 1987; Mandler 1982; Sujan and Bettman 1989; Meyer-Levy and Tybout 1989; Peracchio and Tybout 1996). Schema refers to a cognitive structure that contains knowledge about the attributes of a category and the links among these attributes. A category is the cognitive structure that contains instances of the class. Categorization, then, is the process of identifying a new stimulus as a member of its class (Fiske and Pavelchak 1986, p. 170).

According to categorization perspectives, people naturally group objects and events into categories to understand and process environmental information more efficiently (Rosch 1975; Fiske 1982). If a new stimulus can be categorized as an example of an existing category, people can quickly make a judgment by retrieving and applying category knowledge and affect to the new stimulus (i.e., category-based information processing). On the contrary, if a new object is completely novel, category knowledge is not available, and people have to review and evaluate

the information attribute-by-attribute (i.e., piecemeal processing) (Fiske and Pavelchak 1986).

Sujan (1985) suggests that the use of category-based processing or piecemeal processing depends on the match or mismatch between the incoming product information and existing category knowledge. Basically, the more discrepant the incoming information from existing category knowledge, the more likely one will use piecemeal processing strategy. Accordingly, more product-related and attribute-oriented thoughts will be generated (Sujan 1985).

In Fiske and Pavelchak (1986) and Sujan's (1985) studies, a new product is conceptualized and operationalized to be an extreme match or an extreme mismatch with existing product schema. In practice, however, new products often come with both congruent and unique features. Therefore, the discrepancy between a new product and its associated product category knowledge often lies between the extremes of a perfect match or mismatch. Sujan and Bettman (1989) examine the effects of moderate and extreme category discrepancy on consumers' brand perceptions and evaluations. With moderately discrepant features, a brand can be positioned within the overall market as a "differentiated" product (i.e., a differentiation strategy). With strongly discrepant features, a brand can create a separate submarket or niche (a subtyping strategy). With the former strategy, a brand is positioned to be seen as sharing important features with other brands in the category and being superior on the differentiating attributes. With a subtyping strategy, a brand uses its extremely discrepant features to "create a strong perception of difference – that the brand is in a class or category by itself" (p. 454).

Compared with a differentiated position, a subtyped position is found to be:

associated with better memory for the brand's distinguishing features, fewer inferences about other features, perceptions of greater variability among brands on the distinguishing attribute, increased importance of the distinguishing or focal attribute, and a significant relationship between focal attribute (*i.e., discrepant attribute*) importance and brand evaluation (Sujan and Bettman 1989, p. 465, italics added).

These findings suggest that feature discrepancy leads to different information processes and accordingly, brand evaluations.

Mandler (1982) argues that the extent of the discrepancy itself will affect new stimulus evaluations, i.e., moderate discrepancy may generate a more favorable affective judgment than either highly congruent or extremely incongruent information. Completely congruity often evokes a positive response due to familiarity. But the affect is usually very *mild* because the congruent stimulus is not very noteworthy and unlikely to prompt arousal or extensive elaboration. In contrast, when incongruity is encountered, arousal and cognitive elaboration may occur to resolve the incongruity. When the incongruity is moderate, it can be resolved through assimilation (the new information is integrated into the present mental schema) or subtyping (a subcategory is opened to integrate the new information). Moderate incongruity generally evokes greater positive affect than congruity does, not only because of the achieved congruity, but also because of the satisfaction that accompanies the successful categorization. As Mandler (1982, p. 22) notes, “slightly incongruous events are usually interesting and positively valued”. However, if the new information is highly discrepant, so that no assimilation or subtyping is possible, then deep structural changes (either creating a new mental schema or substantially modifying the present schema) are necessary in order to accommodate the new information. In addition, the accommodation may sometimes be unsuccessful. The absence of resolution, as well as the sense of frustration and helplessness that one experiences in the face of schematic incongruity and interruption, implies that the affect evoked by extreme incongruity is negative (Mandler 1982, p. 23).

Mandler’s discrepancy model is empirically tested in new product learning contexts in two familiar product classes: soft drinks and fruit juice (Meyers-Levy and Tybout 1989). Their

findings show that moderate schema incongruity will lead to more favorable product evaluations than either complete congruity or extreme incongruity between the new product attribute and activated schema, supporting Mandler's predictions. Meyers-Levy and Tybout (1989) also investigate the moderating role of dogmatism and need for cognition. However, the discrepancy effects were only found for nondogmatics, while the hypothesized moderating role of need for cognition (i.e., discrepancy effects are more evident for high need for cognition individuals) was not found. Meyers-Levy and Tybout attribute the nonsignificant findings to the relative homogeneity of the graduate student sample on need for cognition. However, a more fundamental explanation may be that discrepancy effects are subtle and may be affected by a variety of factors (Mandler 1982, pp. 28-29; Peracchio and Tybout 1996; Campbell and Goodstein 2001).

Peracchio and Tybout (1996) suggest consumer knowledge may be one important factor that may overwhelm the discrepancy effects. They argue that while discrepancy effects will exhibit in novices, expert's evaluations are unaffected by congruity levels but rather are influenced by the affects associated either with the activated schema or with specific attributes. For example,

the positive affect generated by resolving a moderate incongruity ("It's a new type of cake") may be swamped by a strong negative affect toward the product category schema ("Cakes make me fat") or toward specific features mentioned in the product description ("I hate that flavor") (Peracchio and Tybout 1996, p. 177).

Campbell and Goodstein (2001) further suggest that perceived risk of purchase is another important situational factor that moderates the impact of incongruity on product evaluation. In three experiments, they find that when perceived risk is high associated with a purchase, a congruent product is preferred to a moderately incongruent product, i.e., the moderate

incongruity effect is reversed. This suggests that consumers appear to stick to the norms under high-risk conditions.

Summary and Implications for Late Entry Strategy

In summary, research on categorization shows the importance of category discrepancy on new information processing and brand evaluations. In the order-of entry context, the pioneering brand sets up expectations for the category and acts as the category prototype or exemplar against which late entrants compare (Carpenter and Nakamoto 1989). Consequently, late entrants can either be assimilated, subtyped, or accommodated into the category depending on their feature discrepancy. Brand evaluation will be also affected accordingly. Thus, the categorization perspective reviewed here would extend current behavioral approaches to better understand order-of-entry effects and possibly provide the explanations to resolve the controversy in the literature.

However, two issues must be assessed before we could apply categorization models to order-of-entry contexts. First, according to categorization perspectives, new brands are evaluated through either a category-based processing mode, a piecemeal mode or a mix of both (Fiske and Pavelchak 1986; Sujan 1985). Extant research seems to focus mainly on piecemeal processing by examining the effects of discrepant attributes in familiar product classes (e.g., Goodstein 1993; Stayman, Alden, and Smith 1992; Sujan and Bettman 1989). However, if a category is particularly novel, little prior category knowledge and affect could be retrieved from existing category schema, then category-based mode may become the focus of the learning process. How will this affect a brand evaluation? Second, as discussed earlier, discrepancy effects are likely to be subtle and may be affected by a number of factors. In order-of-entry contexts, what will be the important factors that may swamp discrepancy effects?

In chapter 3, after addressing these two issues, a category-based learning perspective is advanced to apply and extend the extant categorization research to order-of-entry contexts. By so doing, this dissertation will also enrich current categorization models by considering explicitly the category-based mode and the impact of decision ambiguity in product evaluations. A summary and comparison between previous perspectives and the category-based learning perspective are presented in Table 2-1.

2.2.6 Summary

In sum, consumer category knowledge and preference are heavily influenced by the pioneering brand. A successful pioneer could be strongly associated with a product category and act as the category exemplar or prototype against which all late entrants are judged. Me-too brands are unlikely to outsell the pioneer because they are perceptually overshadowed by the pioneer. For differentiated late entrants, if consumers have to make trade-offs between their benefits and the pioneer's, the pioneering brand can still enjoy a status quo advantage over the late entrants. Late movers are more likely to overtake the pioneer if they obviously offer some extra benefits to consumers (Muthukrishnan 1995; Shankar, Carpenter, and Krishnamurthi 1998).

The perspectives reviewed previously suggest that **discrepancy effects** and **ambiguity effects** may be the key mechanisms underlying the comparison between late entrants and early entrants. Discrepancy effects arise from *perceived differentiation* (e.g., Carpenter and Nakamoto 1989, 1994; Kardes and Kalyanaram 1992; Mandler 1982; Meyers-Levy and Tybout 1989). Ambiguity effects result from *perceived performance risk* and *comparison difficulty* (e.g., Hoch and Deighton 1989; Muthukrishnan 1995; Zhang and Markman 1998).

Table 2 - 1 Behavioral Perspectives on First-Mover/Late-Mover Advantage

Perspectives	Mechanisms			Implications for achieving late-mover advantage
	New brand learning	Pioneer	Follower	
Consumer learning and preference formation ^a <u>Context</u> : novel product classes.	The pioneer is the standard against which all late entrants are judged.	(1) shape consumer preference formation, and (2) become the prototype of the category.	Adding new features may reshape consumer's preference and decrease the pioneer's prominence.	To be <i>distinctive</i> from the pioneer may be the key for success.
Information learning and integration ^b <u>Context</u> : familiar product classes	Overall evaluation of a follower is formed first then compared to the overall evaluation of the pioneer.	(1) information learning: all its features are novel and thus attention-drawing, and (2) information integration: it has more information available to form overall evaluation than followers.	Its common features are redundant and not attention-drawing. Its unique features of followers may be overlooked. Therefore, even an objectively superior follower cannot overtake the pioneer.	Feature novelty is needed to arouse attention and elaboration.
Reminding-based learning ^c <u>Context</u> : familiar product classes	Similarity judgment process, where common features are the focus of the comparison.	The pioneer is the brand against which followers are learned and evaluated.	An objectively superior late entrant can overtake the pioneer when it has enhanced features, but not when it has unique features.	Ease of comparison is one of the key factors that could overcome pioneering advantages.
Decision making and incumbent advantage ^d <u>Context</u> : familiar but ambiguous product classes (skin lotion)	Attribute-by-attribute comparison process.	The incumbent brand is the brand against which attack brands are compared and evaluated.	When decision ambiguity is high, consumers still stick with the incumbent even if the attack brand is objectively superior.	Low levels of decision ambiguity could enable an objectively superior brand to outperform the incumbent brand.
Category-based learning ^e <u>Context</u> : novel and familiar product classes	Common features are learning in a category-based mode, while unique features are processed in a piecemeal way.	The pioneer is the brand against which followers are learned and evaluated.	Discrepancy effects and ambiguity effects are the key mechanisms that either help or hinder a follower to achieve a late-mover advantage.	An enhancing strategy is more effective in novel product classes while a distinctive strategy works better in familiar product classes.

^a Carpenter and Nakamoto 1989

^b Kardes and Kalyanaram 1992

^c Zhang and Markman 1998

^d Muthukrishnan 1995

^e This Dissertation

Perceived Differentiation. A new brand is perceived as differentiated when it owns attributes similar to products in the category and has features that are unexpected by or incongruent with current product knowledge (Dickson and Ginter 1987; Mander 1982; Sujan and Bettman 1989). In today's market, because there is a huge amount of product information available to consumers (Ducoffe 1996), a follower brand has to possess something unique and novel to be noticeable. If a late entrant enters with an unexpected feature, it is more likely for it to arouse attention (Kahneman 1973). Further, it is easy for novel information to be encoded into long-term memory because novel information is interesting and consumers tend to elaborate on it (Anderson 1983). This suggests that consumers are more likely to recall those differentiated brands when they make a purchase decision. Moreover, novel information is likely to be more salient in inter-brand comparison because of its uniqueness (Dhar and Sherman 1996; Houston, Sherman, and Baker 1989). Research also indicates that novel information is often given greater weight in judgment (Wyer 1970). Therefore, differentiated brands are more likely to enter a consumer's consideration sets and receive a more favorable evaluation in a decision making process. As Carpenter and Nakamoto (1989, p. 289) suggest, a differentiated late entrant may establish or develop a new and desirable location, and shift "at least a portion of the taste distribution toward its position and achieving a higher degree of relative prominence." That is, by positioning differently from the pioneer, a late entrant can make itself more prominent and the pioneer less prominent (Porter 1985). By so doing, a late entrant may outsell the pioneer if greater weight is given on its distinguished features.

Ambiguity Effects. As discussed earlier, in a product evaluation context, ambiguity refers to the potential for multiple interpretations of quality (Ha and Hoch 1989; Hoch and Deighton 1989). If a decision environment is highly ambiguous, consumers tend to stick to the

pioneer to avoid uncertainty (Muthukrishnan 1995). Hence, ambiguity benefits the entrenched pioneer but disadvantages a late entrant.

In the context of product evaluation, two major sources of ambiguity are attribute evaluation and attribute comparison² (Ha and Hoch 1989; Hoch and Deighton 1989). Difficulty in attribute evaluation will lead to *perceived performance risk*, which means consumers are not sure about the performance of a feature and/or the feature's contribution to the product (Gatignon and Robertson 1991; Kahn and Meyer 1991; Nowlis and Simonson 1996). High performance risk creates advantages for pioneers because consumers usually have more experience with and beliefs about pioneers but not followers. To avoid uncertainty, consumers may just stick to pioneering brands (Muthukrishnan 1995). Therefore, to compete with the pioneer, a late entrant had better provide less ambiguous information and make the product attribute easy to evaluate.

Ambiguity may also arise when choice alternatives claim the same benefits but compete on a set of non-overlapping attributes. This type of ambiguity parallels what Ellsberg (1961, p. 660) calls "objectively ambiguous situations" and is defined as *comparison difficulty* in this thesis. A difficult-to-compare task usually involves two alternatives with non-overlapping attributes. For example, aloe vera and vitamin E may both be beneficial to skin health. If two competing brands emphasize different ingredients (aloe or vitamin E) that provide the same benefit, decision ambiguity increases. In such a situation, attribute-by-attribute comparison is impossible and attribute trade-offs must be made to reach a solution. Mental effort and cognitive strain are common in a difficult-to-compare task (Tversky, Sattath, and Slovic 1988). As a

² Ambiguity can also arise from attribute identification (Ha and Hoch 1989). For example, "if consumers selectively encode different subsets of attributes from occasion to occasion, either because of little product expertise or excessive information load, multiple interpretations are possible" (Ha and Hoch 1989, p. 354). In this dissertation, brands alternative are presented with a clearly specified attribute levels, therefore, this type of ambiguity is unlikely to occur and thus is not the focus of this thesis.

cognitive miser, a consumer tries to minimize both error and effort when making a decision (Shugan 1980; Wright 1975). So if consumers have to make trade-offs between attributes of a late entrant and those of a pioneer, they may just stick to the pioneering brand to reduce mental effort and cognitive strain (Bettman, Luce, and Payne 1998). Further, trade-offs among attributes may lead to multiple interpretation of product benefits, which makes consumers prefer the pioneering brand to late entrants (Muthukrishnan 1995). This implies that a late entrant had better possess obviously superior and unambiguous features to compete against the pioneer successfully.

2.3 Moderators

In the previous section we discuss the possible mechanisms that could assist late entrants to compete against the pioneer. The effectiveness of these mechanisms may be moderated by a number of variables. Research needs to identify variables moderating these relationships to better understand when these mechanisms are effective and thus, provide us insights of the effectiveness of late entry strategies. By so doing we can examine the boundary and limitations of each mechanism (Brinberg and McGrath 1985). The next section provides a review of these key factors, including task variables, product variables, and personal variables (Bettman, Payne and Johnson 1991; Brown and Carpenter 2000; Nowlis and Simonson 1996; Dhar and Sherman 1996; Simonson, Carmon and O'Curry 1994).

2.3.1 Task Variables

Task variables are associated with general characteristics of the decision problem and are not dependent on the particular values of the alternatives (Payne 1982). Number of alternatives (or set size) is one task variable that may influence consumer decision making. Past research has indicated that consumers use compensatory strategies to a greater extent for small numbers of

alternatives and noncompensatory strategies for larger number of alternatives (e.g., Johnson and Meyer 1984).

Brown and Carpenter (2000) investigate the effect of set size on consumer perceptions of trivial attributes. Trivial attributes refer to those with a trivial and/or subjective relationship to perceived quality, or those that appear valuable but are irrelevant to creating the implied product benefits. Trivial attributes affect decision making through their novelty and uniqueness in the choice set, by a salience effect - drawing attention away from important attributes, or by acting as a heuristic cue (Brown and Carpenter 2000, p. 372). Empirical evidence shows that trivial attributes are sometimes positively valued (Carpenter, Glazer, and Nakamoto 1994) and sometimes negatively valued (Simonson, Carmon and O'Curry 1994). Brown and Carpenter (2000) argue that the effectiveness of trivial attributes is dependent on choice setting. Specifically, a positively valued trivial attribute is more effective when there are more than two alternatives. This is because, in a larger choice setting, the trivial attribute becomes more salient due to its uniqueness and novelty. And also because of the subjectively perceived value, the salience effect allows one to make a confident choice. Consequently, consumers tend to choose the alternative with the trivial attribute.

Set size may influence the effectiveness of enhancing and distinctive strategies through changing consumer's perceptions of novelty and distinctiveness. In a larger choice set, common features will be perceived as particularly redundant (Kardes and Kalyanaram 1992). This implies that consumers have less interest in processing the information of late entrants that only have common attributes when the number of choice alternatives increases. In contrast, in a larger set, new features will be perceived to be more novel and interesting, and therefore, receive more attention and elaboration. Further, a large choice set increases the salience of a new feature.

Due to the salience effect, a new feature could draw attention away from other attributes or act as a heuristic cue for consumers to shortcut a decision (Brown and Carpenter 2000). Therefore, a distinctive strategy seems more effective in a large choice set size. Future research is encouraged to investigate this topic.

2.3.2 Product Variables

Product variables include (1) the nature of the product category (novel or familiar product classes), (2) product characteristics (brand and price), and (3) characteristics of the enhanced/unique feature (feature evaluability and feature discrepancy).

Product Category. Because new brand learning is influenced by consumer product category knowledge, whether the product category is novel or familiar will affect the effectiveness of late entry strategies. In a novel product class, consumers only have minimal knowledge about the category and their preferences are ambiguous (Carpenter and Nakamoto 1989). In a familiar product class, preferences are much less ambiguous (Kardes and Kalyanaram 1992). In the former case, consumers are learning late entrants with an impoverished knowledge structure. In latter case, new brands are learned based on well-defined preference and category knowledge. Therefore, the effects of distinctive and enhancing strategies may be different in various product categories. This issue will be discussed in greater details in the next chapter.

Brand and Price. Product information such as price, brand, and/or store cues can be used to reduce perceived performance risk (Dodds, Monroe and Grewal 1991; Monroe 1990). This implies that product characteristics such as price and brand name will affect a new feature's perceived performance. Nowlis and Simonson (1996) show that consumers perceive less uncertainty about the performance of a new feature when it is offered by a high-priced brand

and, consequently, a new (positive) feature increases the choice share of a high-priced brand more than of a low-priced brand. They also find that a new (positive) feature increases the choice share of a high-quality, high-priced brand more than of a low-quality, low-priced brand. On the other hand, Zhang, Kardes, and Cronley (2002) suggest positioning the new feature along existing product attributes may reduce perceived performance risk. This means an enhancing strategy may help a non-name brand to gain market share from the pioneer brand. But is there any interaction between late entrant positioning strategies and product characteristics? This interesting topic will be left for future research.

Feature Evaluability. Based on whether or not a consumer can easily judge its benefits, a feature could be easy to evaluate or difficult to evaluate (Hsee 1996). The prevailing view suggests that brands should be differentiated through features with high evaluability because the key of successful product differentiation depends on whether consumers can easily tell the superiority of the product features (Porter 1985). For example, the Geo Metro touts “50 miles per gallon” and Hundai comes with “a 10-year warrantee.” These highly-evaluable features are especially helpful in joint evaluation because they enable people to see the weaknesses and strengths of alternative options (Hsee and Leclerc 1998). Even when evaluated separately, consumers can still easily evaluate the product by comparing its differentiated feature with a referent point (e.g., “a 10-year warrantee” to a usual “3-year warrantee”). In contrast, brands can also be differentiated through difficult-to-evaluate features. For instance, Folger’s coffee has “flaked coffee crystals” created through a “unique, patented process” and Alberto Natural Silk Shampoo claims that “we put silk in a bottle.” These unique features can simply decision making process, convey novel information that receives greater weight, and affect the comparison process in a way that disadvantages the competing brands. As such, these hard-to-

evaluate (sometimes irrelevant) features can help “create a valued difference between brands and, in the process, a meaningfully differentiated brand” (Carpenter, Glazer, and Nakamoto 1994, p. 339).

How does a feature’s evaluability affect the effectiveness of enhancing and distinctive strategies? A highly evaluable feature can distinguish a brand easily through either an enhancing strategy or a distinctive strategy. For example, Geo Metro could advertise as “introducing a totally new technique that makes it the ONLY vehicle which runs 50 miles per gallon” to make its uniqueness more salient. This implies that an easy-to-evaluate feature could benefit late entrants both from discrepancy effects and low ambiguity effects. In contrast, a company should use a distinctive strategy to introduce a new brand with a difficult-to-evaluate feature. If the company makes it a comparable feature, consumers can easily see the inevaluability of the new feature (e.g., using “mountain grown crystals” to compete against Folger’s “flaked coffee crystals”, Zhang and Sood 2000). In this case, ambiguity arises and attack brands thus may be disadvantaged. The topic of feature evaluability is left for future research and readers can refer to Zhang and Sood (2000) for more information.

Feature Discrepancy. Feature discrepancy refers the extent to which a feature is incongruent from the current category knowledge (Mandler 1982; Sujan and Bettman 1989). Past research has indicated that the degree of feature discrepancy can affect consumer information processing and product evaluation. For example, moderate discrepancy will lead to a differentiation position while highly discrepant features can lead to a subtyping position (Sujan and Bettman 1989) or even generate a totally new category (Moreau, Lehmann, and Markman 2001; Moreau, Markman, and Lehmann 2001). Accordingly, the effectiveness of an enhancing strategy vs. a distinctive strategy may vary depending on the feature discrepancy. It seems that

when features are strongly discrepant, a distinctive strategy could be more effective because it enables a brand to be the prototype of the new product category or subcategory (Moreau, Lehmann, and Markman 2001). This dissertation limits the analysis to enhanced/distinctive features that are at most moderately discrepant from current category knowledge (same as Kardes and Kalyanaram 1992; Zhang and Markman 1998) and leave the topic of strong discrepancy for future research.

2.3.3 Personal Variables

Individual differences can also influence the effectiveness of late entry strategies. Need for cognition, knowledge, and motivation are three important factors that may have major effects (Bettman, Johnson, and Payne 1991; Meyers-Levy and Tybout 1989; Hoch and Deignten 1989; Sujan 1985; Peracchio and Tybout 1996).

Need for Cognition. Need for cognition (NFC) represents the tendency for individuals to engage in and enjoy thinking and is defined as a need to structure relevant situations in meaningful, integrated ways and a need to understand and make reasonable the experiential world (Cacioppo and Petty 1982). Research has indicated that the effects of persuasive arguments will depend on one's need for cognition. Individuals high in need for cognition are more influenced by the quality of arguments, while individuals low in need for cognition may simply react to presence of a stimulus. For example, Inman, McAlister, and Hoyer (1990) find that the simple presence of a price promotion signal can influence low NFC consumers whether or not the price of the promoted brand is actually reduced. Given this point, a distinctive strategy may be more effective for low NFC because of its novelty. Low NFC consumers may have a favorable attitude toward a novel product just because it is novel.

However, need for cognition has also been shown to be positively related to recall of incongruent information because high NFC consumers are more likely to make the efforts to analyze and interpret incongruent information (Srull, Lichtenstein, and Rothbart 1985). From a categorization perspective, moderate elaboration and successful assimilation may bring a favorable sense toward an incoming message (Mandler 1982). Because high NFC consumers tend to elaborate on the incongruent information, Meyers-Levy and Tybout (1989) suggest high NFC consumers (vs. low NFC consumers) will value more on new products moderately incongruent with their associated category than those completely congruent. According to this logic, because a distinctive strategy leads to more discrepancy than an enhanced strategy, it may be more effective for high NFC consumers. In summary, contradictory predictions arise from these two aspects. Future research is needed to investigate this interesting issue.

Prior Knowledge. Three types of prior knowledge have been identified in the literature: objective knowledge, subjective knowledge, and familiarity. Objective knowledge is defined as the accurate product category knowledge stored in long-term memory. Subjective knowledge refers to the self-assessed knowledge which reflects how knowledgeable one believe herself/himself to be about a product category. Familiarity refers to the level of accumulated product-related experiences (Alba and Hutchinson 1987; Park, Mothersbaugh, and Feick 1994; Sujan 1985). Each of these three constructs, though correlated, can influence information processing in different ways. The choice of knowledge type, therefore, is subject to the research requirements of the experimental tasks (Alba and Hutchinson 1987).

The previous review of behavioral perspectives suggests that learning a new brand may be a categorization process (Fiske 1982; Meyers-Levy and Tybout 1989; Sujan 1985; Zhang and Markman 1998). Because objective knowledge includes the number of features, attributes, and

relations among features stored in a person's category schema, it is more closely related to product category representations and more relevant to this thesis. Therefore, consistent with other category-related studies (Sujan 1985; Moreau, Lehmann, and Markman 2001; Peracchio and Tybout 1996), objective knowledge should be used to examine the issues related to late mover positioning strategies. The role of objective knowledge will be examined in chapter 5.

Motivation. Motivation refers to both the direction (goals) and intensity of the consumer's learning behavior (MacInnis and Jaworski 1989). Involvement is defined as subjective perceptions of the personal relevance of an object, activity, or situation in achieving their personal goals and values (Celsi and Olson 1988). According to MacInnis and Jaworski (1989), motivation is a broader concept than involvement. Higher levels of motivation allocate increasing attention and elaboration capacity to a message source as needed for analysis and will result in more durable cognitive and attitudinal effects (Greenwald and Leavitt 1984). Lower motivation levels use relatively little capacity and may result in immediate affects. In the latter case, attitude change may occur, but the attitude change is not the result of the rational elaboration and judgment, but the result of previously changed perceptions after a long time period of exposure to the message (Krugman 1965).

Based on a structural alignment perspective, Zhang and Markman (2001) suggest that, compared to alignable difference, unique features are more difficult to process due to the lack of comparability. Therefore, consumers with low motivation are less likely to elaborate a unique feature and tend to pay more attention to alignable differences. In a judgment task, only highly-motivated consumers will take the efforts to compare and evaluate all attributes in order to make an accurate judgment (Celsi and Olson 1988). This implies that a distinctive strategy may be more effective when consumer motivation is high. On the other hand, consumers with low

motivation tend to reach a conclusion based on heuristic cues (Petty and Cacioppo 1986).

Because the novelty of a new feature is more attention drawing, low motivated consumers may hold a more favorable attitude toward a distinctive late entrant than toward an enhanced late entrant. This suggests that a distinctive strategy may be more effective when consumer motivation level is low. In summary, contradictory predictions arise from these two aspects. Future research is needed to investigate this interesting issue.

CHAPTER 3 CONCEPTUAL DEVELOPMENT

The last chapter reviewed behavioral perspectives pertaining to order-of-entry effects. In summary, although these perspectives all agree that the me-too strategy may suffer in the competition with a successful, entrenched pioneer, they provide contradictory arguments and predictions regarding the effectiveness of enhancing and distinctive strategies. For example, Carpenter and Nakamoto (1989) suggest that a distinctive strategy is desirable for late entrants to overcome pioneering advantage. Kardes and Kalyanaram (1992) argue that a distinctive strategy may be ineffective in a familiar product class, even if the late entrant is objectively superior to the pioneer. Zhang and Markman (1998) show that in a familiar product class, an enhancing strategy can enable an objective superior late entrant to achieve late-mover advantage but a distinctive strategy cannot. And finally, Muthukrishnan (1995) implies that both an enhancing strategy and a distinctive strategy are effective as long as decision ambiguity is low. But because a distinctive late entrant introduces a new feature, whose performance is usually more difficult to evaluate than an enhanced feature, a distinctive strategy might be less effective than an enhancing strategy.

To resolve the controversy, this chapter takes a category-based learning perspective to explain how consumers learn late entrants and compare late entrants with pioneers. More specifically, this research aims to explain (1) the underlying process through which late entrants are learned and evaluated, (2) the behavioral mechanisms that enable an enhancing or distinctive strategy to overcome pioneering advantages, and (3) under what conditions one alternative is more effective than the other.

3.1 Category-based Learning Perspective

Past research has indicated that product category knowledge or category schema plays a central role in new brand learning (e.g., Alba and Hutchinson 1987; Bettman, Johnson, and Payne 1991; Cohen and Basu 1987; Gregan-Paxton and John 1997; Mandler 1982; Meyer-Levy and Tybout 1989; Peracchio and Tybout 1996; Sujan and Bettman 1989). From a categorization perspective, people naturally group objects and events into categories to understand and process environmental information efficiently (e.g., Fiske 1982). As a result of experience with a product category, product category knowledge forms at least partially integrated (i.e., schema-like) structures in memory and such memory structures are composed of similarly perceived objects (i.e., category) and object-based information (Cohen and Basu 1987). Accordingly, product category knowledge (or schema) sets up the expectations about what are typical attributes, how important these attributes are, and the relationships among these attributes (Sujan and Bettman 1989).

When faced with a new stimulus, people attempt to categorize it in order to identify possible benefits or threats and to facilitate decision making (Fiske 1982; Rosch 1975; Rosch and Mervis 1975). Fiske and Pavelchak (1986) suggest this categorization process involves two alternative processing modes: category-based processing and piecemeal processing. If a new stimulus matches the existing category knowledge, the category-based processing mode arises, i.e., people quickly make a judgment by retrieving and applying category knowledge and affect to a new stimulus. In contrast, a mismatch between the stimulus and category knowledge leads to piecemeal evaluative processing, i.e., people have to review and evaluate the information piece by piece. Applying Fiske and Pavelchak's (1986) model in product evaluation research, Sujan (1985) finds that the match or mismatch between the incoming product information and

existing category knowledge determines the use of category-based or piecemeal processing strategy.

In Fiske and Pavelchak's (1986) model, a new stimulus is conceptualized as either extreme match or completely mismatch with existing schema. However, in practice, especially in product markets, new products often come with both congruent features and incongruent features. The discrepancy between a new product and its associated product category knowledge thus often lies between the extremes of a perfect match or mismatch (Meyers-Levy and Tybout 1989). Therefore, consumers may use both category-based and piecemeal processing strategies when categorizing a new product. Fiske and Pavelchak (1986, p. 177) also note, "because inconsistency is a continuous quantity, there may be intermediate levels that cause a mix of the piecemeal and category-based modes."

Application of categorization models. We suggest that this mechanism also applies in the order-of-entry context. As discussed before, the pioneering brand has an important impact on consumer preference formation and strongly affects consumer expectations about the product category. As a result, the pioneering brand is strongly associated with a product category and becomes a strong category exemplar or prototype against which all late entrants are judged (Carpenter and Nakamoto 1989). Therefore, when late entrants appear in the market, they are learned through a comparison process with the pioneering brand or existing brands (the current category exemplar or prototype).

This comparison process between late entrants and existing brands is defined as a *category-based learning process*. In the process, a perfect match (e.g., me-too late entrants) leads to category-based processing while a perfect mismatch leads to pure piecemeal processing. However, given the inconsistency often lies between the extremes of a perfect match or

mismatch, a mix of category-based processing and piecemeal processing is more likely to occur (Fiske and Pavelchak 1986; Meyers-Levy and Tybout 1989). That is, for the consistent information (e.g., common features of a late entrant), consumers may evaluate them quickly by retrieving and applying category knowledge and affect. In contrast, for the discrepant information (such as unique attributes of a late entrant), because judgment knowledge is not readily available, consumers need to elaborate and evaluate the attributes piece by piece, and then make a judgment accordingly.

This perspective highlights the importance of *common features* for late entrants to compete with existing brands. To be perceived as a member of an existing category, a late entrant must possess enough common features shared with existing brands. Common features facilitate the categorization process and thus the affect associated with product category prototype or exemplar can be quickly transferred to the new brand (Fiske 1982; Sujan 1985). This means the new brand could be recognizable and possibly, acceptable to consumers.

Unique features are also important for late entrants to overtake existing brands. Unique features help a late mover be perceived as *distinctive*, because they are unexpected by or incongruent with current product knowledge (Mandler 1982; Meyers-Levy and Tybout 1989). Distinctiveness motivates people to process a new brand in great details (Kardes and Kalyanaram 1992) and itself influences the affective evaluation: novel and moderate incongruous events are usually interesting and thus positively valued (Mandler 1982; Meyers-Levy and Tybout 1989; Stayman, Alden, and Smith 1992). Being distinctive from the pioneer, a late entrant may shift consumer taste distribution toward its position and make itself more prominent and the pioneer less prominent (Carpenter and Nakamoto 1989; Porter 1985). By so doing, a late entrant may

restart the preference formation process, develop a new and desirable location, and possibly overtake the pioneer if greater and greater weight is given on its distinguished features.

Extensions of categorization models. The previous discussion shows that, consistent with previous categorization models (Mandler 1982; Meyers-Levy and Tybout 1989; Stayman, Alden, and Smith 1992), this perspective emphasizes the discrepancy effects in the new brand learning process. That is, if a late entrant possesses moderately discrepant features, it may be evaluated more favorably than either completely congruent late entrants or strongly incongruent entrants. However, as discussed in Chapter 2, discrepancy effects are likely to be subtle and may be affected by a number of factors. Then a question is, in the order-of-entry context, which factor may be the key variable that impacts discrepancy effects?

This dissertation suggests that *decision ambiguity* is a key factor that will attenuate the relationship between novelty and positive evaluation. Followers are learned and evaluated through a comparison process with the pioneer. In the comparison process, if the decision environment is highly ambiguous, consumers may not be able to assess the value and performance of a late entrant even if it is a novel and objectively superior entrant. Consequently, they may just stick to the pioneering brand to avoid uncertainty (Muthukrishnan 1995). Therefore, novelty alone may not enable an objective superior late entrant to outperform the pioneer, unless decision ambiguity is low.

As discussed in chapter 2, ambiguity in attribute evaluation will lead to *perceived performance risk*, which means that consumers are not sure about the performance of a feature or the feature's contribution to the product (Gatignon and Robertson 1991; Kahn and Meyer 1991; Nowlis and Simonson 1996). Another type of ambiguity is *comparison difficulty*, i.e., attribute-by-attribute evaluation is impossible and attribute trade-offs are needed to reach a

solution. This implies that a late entrant must possess obviously superior and easy-to-compare features to compete against the pioneer successfully. However, if attribute trade-off is unavoidable, consumers tend to prefer the pioneer.

As indicated in Chapter 2, another issue that needs further investigation in categorization research is that, if a category is particularly novel, little prior category knowledge and affect could be retrieved from existing category schema, then what kind of information processing will a category-based mode be? And further, will this influence people's attention and elaboration to a category-based mode vs. piecemeal mode?

In a novel product class, product learning may be a very difficult and complex task for consumers due to the impoverished knowledge (Gatignon and Roberson 1991). Initially, consumers may know little, if anything, about the category and product attributes. Even if they have objective information on product attributes, they may not be able to judge the value of an individual attribute or the superiority of one attribute combination over another (Howard 1989). Therefore, a consumer's category knowledge is usually ambiguous in the early period. At that time, because unambiguous previous knowledge is not available and affect transfer is not feasible, common features are unlikely to be quickly evaluated by retrieving and applying previous category knowledge and affect.

Therefore, when category knowledge is lacking, category-based processing becomes the focus of the comparison as people attempt to learn more about the category. As Spalding and Ross (1994, p. 1252) note, during the early learning of a category,

... aspects common to the compared instances are considered more important than aspects that are not common to the compared instances. That is, learners will focus on these common features as important aspects of the category.

As a result, people can form generalizations and further abstractions about a category and develop category knowledge accordingly (Ross, Perkins, and Tenpenny 1991).

Therefore, the perspective proposed here also extends the applications of categorization models in consumer judgment context by considering explicitly the influence of category novelty. Previous research seems to focus mainly on piecemeal processing mode by examining the effects of discrepant attributes in familiar product classes (e.g., Goodstein 1993; Stayman, Alden, and Smith 1992; Sujan and Bettman 1989). This perspective argues that in novel product classes, category-based processing may be the focus of comparison and consequently receive particular attention and elaboration.

This perspective is consistent with Zhang and Markman's (1998) reminding-based learning model in that both perspectives believe new brands are learned through a comparison process with existing brands. The difference is that Zhang and Markman suggest the comparison is essentially a *similarity judgment* process, where the common attributes receive particular attention (p. 414). My perspective suggests common attributes are processed through a holistic, category-based mode, while unique features are evaluate in a piecemeal way. Further, which features will receive more attention depends on whether the product class is a novel or familiar one. In familiar product classes, unique features are the focus of comparison and receive more attention and elaboration. While in novel product classes, common features will be considered more important and become the focus of comparison. Please see Table 2-1 for the comparison between this perspective and other perspectives.

Summary. In sum, the category-based learning perspective proposes that new brands are learned through a comparison process with existing brands. In the process, common features are processed in a category-based mode and set up the basis for late entrant to free ride pioneer's market efforts, while unique features are evaluated in piece-by-piece fashion. Whether unique or common features are the focus of the comparison depends on whether the product category is a

familiar or novel one. Further, *discrepancy effects* (i.e., perceived differentiation) and *ambiguity effects* (i.e., perceived performance risk and comparison difficulty) are the key mechanisms that either help or hinder followers to achieve late-mover advantage.

Once again, this perspective suggests “me-too” brands may not outperform the pioneer. Because me-too brands only possess attributes that are completely consistent with a pioneer’s, little effort is needed for consumers to process the information carried by them. Consequently, me-too brand may not be able to encode into long-term memory and be retrieved into a consideration set. Further, me-too brands are perceptually overshadowed by the pioneer and are less distinct, therefore, it is less likely that consumers will form a favorable attitude toward a me-too brand, as illustrated by Alpert and Kamins (1995)

In the next section, I will examine the efficacy of enhancing and distinctive strategies with the category-based learning perspective and develop the hypotheses accordingly. Construct definition and boundary conditions are discussed as follows.

Construct definition. *Late entry strategy* refers to how a late entrant positions itself in the market to compete with the pioneer. A follower can position itself in a number of ways. For example, it can simply sell an exact duplicate of the pioneering brand to free-ride the pioneer’s market effort (i.e., *me-too strategy*). It can also provide *superior* features along existing (usually typical) product attributes to make itself an enhanced late entrant (i.e., *enhancing strategy*). A late mover can also add new features to its offering and make it *distinctive* from the pioneering brand (i.e., *distinctive strategy*). In this dissertation, new features provided by a late entrant are termed as “unique features”; features that have correspondence with each other are referred to “common features”. Note there are two types of common features: (1) “enhanced features”,

which are superior features offered by an entrant; and (2) “shared features”, which are the same features possessed by both the pioneer and late entrant.

The possible mechanisms that assist objectively superior late movers to overtake the pioneers are *perceived differentiation*, *low comparison difficulty*, and *low perceived performance risk*. A brand is perceived as *differentiated* when it owns attributes similar to other products in the category and attributes unexpected by or incongruent with current product knowledge. *Low comparison difficulty* means that in a task, evaluation could be made at attribute-by-attribute level and no attribute trade-off is needed to reach a solution. *Perceived performance risk* arises when consumers are not sure about the performance of a feature or the feature’s contribution to the product.

As reviewed in Chapter 2, the effectiveness of late entry strategies may be moderated by a number of factors such as task variables, product characteristics, and personal factors. This thesis focuses mainly on product characteristics. *Product category*, whether the product class is a familiar or novel one, is the product characteristic studied in this dissertation.

Boundary conditions. Consistent with Nowlis and Simonson (1996), enhanced/new features are limited to those that are *positively valued* and *positively associated* with product category knowledge. This research also limits the analysis to enhanced/new attributes that are at most *moderately incongruent* (discrepant) from the overall product category knowledge (same as Kardes and Kalyanaram 1992; Zhang and Markman 1998).

3.2 Hypotheses

In this section, hypotheses will be developed based on the proposed perspective. The hypotheses intend to test (1) the proposed process through which late entrants are learned and evaluated, (2) the behavioral mechanisms that enable an enhancing or distinctive strategy to

overcome pioneering advantages, and (3) under what conditions one strategy is more effective than the other.

3.2.1 Effects of Entry Strategies on Perceptions

Product improvement and new feature introduction are two most common strategies to increase sales and gain competitive advantages (Nowlis and Simonson 1996). With an enhancing strategy, a late entrant provides features similar to the pioneer's and differentiates itself with enhanced features along existing product attributes. In contrast, a distinctive strategy adds new features to a late entrant brand and differentiates it from other brands based on the unique features. For example, in the early 1980's, a pioneering brand of PC might have a 540M hard-drive, 8MB memory, etc., then an enhanced late entrant could possess a 800M hard-drive, 16MB memory, with other shared features. In contrast, a distinctive late entrant might introduce a CD-ROM and claimed its uniqueness based on this new feature. Usually, a distinctive late entrant heavily advertises that it offers "unique features" that other brands don't have. For example, Enterprise Rent a Car distinguishes itself by its unique feature - "we will pick you up". Alberto Culver differentiates its Alberto Natural Silk Shampoo with a novel attribute - "we put silk in a bottle" (Carpenter, Glazer, and Nakamoto 1994). The benefits of being unique have long been recognized by strategic management and marketing researchers (e.g., Aaker 1991; Porter 1985).

An enhanced late entrant will not be perceived to be as differentiated as a distinctive one. A new feature is novel because it is usually out of the expectations of product category knowledge. In contrast, an enhanced feature is different but not novel. For example, a feature like "64MB memory" is obviously different from and superior to a feature like "32MB memory", but this is not novel because every brand has the same attribute (i.e., memory).

Consequently, an enhanced entrant will be perceived as different but not distinctive from other brands. Actually, an enhanced late entrant is perceptually very similar to the pioneering brand because they have the same attribute combinations, and differ only in attribute levels. Therefore, compared to a distinctive late entrant, an enhanced entrant will be perceived as less novel and less distinctive.

An enhanced entrant is easy to compare with the pioneer because all its attributes are comparable to the pioneer's along the same dimensions. However, the unique features of a distinctive entrant are not available from the pioneer and, therefore, the comparison may not be as easy as the enhanced one's (Zhang, Kardes, and Cronley 2002).

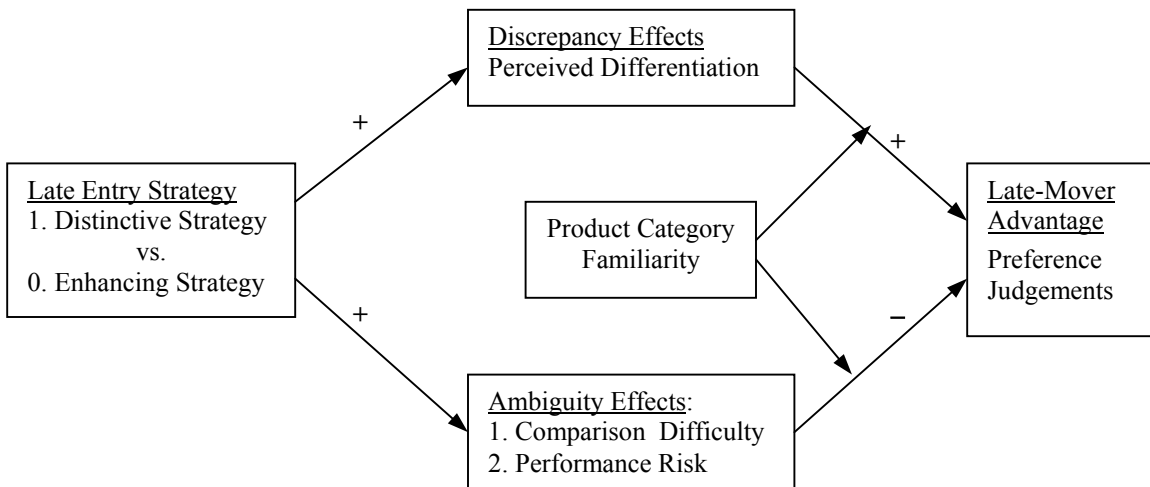
A distinctive entrant may also be perceived as more risky than an enhanced one. This is because, when a feature is first introduced to a product, perceived risk associated with its performance arises (Nowlis and Simonson 1996). To assess the exact performance of a new feature, one must possess some experience or prior knowledge of how good it is on some global scale (Hsee 1996). But such experience or prior knowledge may not exist for a new feature. In contrast, an enhanced feature is relatively easier to assess because it can be compared along a common dimension. Through the comparison, one's relative inferiority or superiority becomes evident and thus easy to evaluate, either objectively or subjectively (Hsee 1996; Maheswaran, Sternthal, and Gurhan 1996). Further, even if a new feature's superiority is easy to identify, its exact contribution to the product may still be difficult to assess. For example, although it is easy to see the superiority of a CD-ROM when it is first introduced, consumers may still not be sure about its exact contribution to a computer. For an enhanced feature, its contribution could be assessed through retrieving the value of the contrasting attribute from existing brands (Zhang and

Markman 1998). However, such a contrasting value may not be available for a new feature. In sum,

- H1:** Compared to an enhanced late entrant, a distinctive late entrant results in:
- a. greater perceptions of differentiation,
 - b. greater perceptions of comparison difficulty, and
 - c. greater perceptions of performance risk.

Thus, a distinctive entrant may be judged to be more favorable than an enhanced one because of its novelty and distinctiveness. At the same time, it may be perceived as less favorable due to its comparison difficulty and performance risk. On balance, which strategy is more effective? A number of factors may impact the discrepancy and ambiguity effects and consequently the efficacy of an enhancing vs. distinctive strategy. This research focuses mainly on one key moderator: product category familiarity (i.e., unfamiliar vs. familiar product category). Figure 3-1 represents the proposed conceptual model.

Figure 3-1 The Conceptual Model



3.2.2 Effects of Product Category Familiarity

In a familiar product class, consumers are likely to form a schema-like product knowledge structure and develop a set of expectations about a product category, such as what are the typical attributes, how important these attributes are, and what are the relations among these attributes (Cohen and Basu 1987; Sujan and Bettman 1989). Given its attribute combination, an enhanced entrant falls into consumer's expectations of a product category. So enhanced features and shared features are processed holistically in a category-based mode and will receive less attention and elaboration in the evaluative judgment (Meyers-Levy and Tybout 1989; Sujan 1985). In contrast, unique features are novel and unexpected. They are easy to gain attention and arousal and cognitive elaboration are needed to resolve the incongruity (Mandler 1982; Meyers-Levy and Tybout 1989). They will be processed more extensively in a piecemeal mode, and thereby, can be recalled better. Therefore,

H2a: In familiar product classes, unique features of a distinctive late entrant are more likely to be recalled than enhanced features of an enhanced entrant.

In unfamiliar product classes, new product learning focuses more on the category-based processing as a well-defined category knowledge is not available (Spalding and Ross 1994). Therefore, common features become more important in the learning process. However, because shared features provide little diagnostic information to the judgment and enhanced features are comparable along a common dimension, enhanced features become the focal output of comparison and consequently receive more attention (Zhang and Markman 1998). In contrast, unique features receive less elaboration because consumers may lack the ability to comprehend them. Hence,

H2b: In unfamiliar product classes, unique features of a distinctive late entrant are less likely to be recalled than enhanced features of an enhanced entrant.

Due to an individual's limited attention and processing capacities, if a piece of information captures more attention and elaboration in the decision process, other information will receive less attention and are less likely to be recalled (Lynch and Srull 1982). Because an enhanced entrant provides shared and enhanced features, and a distinctive one has shared and unique features, given H2a and H2b, it is predicted,

H3a: In familiar product classes, shared features are less likely to be recalled for a distinctive late entrant than for an enhanced entrant.

H3b: In unfamiliar product classes, shared features are more likely to be recalled for a distinctive late entrant than for an enhanced entrant.

In a familiar product class, common features are perceived as redundant and uninteresting and consumers are particularly interested in something new and novel (Kardes and Kalyanaram 1992). Unique features are unexpected and interesting and thus will be more positively valued (Mandler 1982; Meyers-Levy and Tybout 1989). Further, consumers are less sensitive to perceived ambiguity because they feel competent with a familiar product (Heath and Tversky 1991). This suggests that in a familiar product class, consumers tend to make their preference judgment based more on perceived differentiation but less on perceived ambiguity. Empirical evidences from moderate discrepancy literature seem to support this argument (e.g., Meyers-Levy and Tybout 1989; Peracchio and Tbout 1996).

In contrast, in an unfamiliar product class, because the product class as a whole is novel, consumers will pay less weight on a new and novel feature in comparison (multiattribute diminishing sensitivity, cf. Nowlis and Simonson 1996). Moreover, because consumers are less competent with an unfamiliar product, they tend to be sensitive to comparison difficulty and the performance risk of a new feature (Heath and Tversky 1991). That is, ambiguity effects loom larger in an unfamiliar product class. Therefore,

H4a: In familiar product classes, preference judgments will be affected more by perceived differentiation and less by perceived comparison difficulty and performance risk.

H4b: In unfamiliar product classes, preference judgments will be affected less by perceived differentiation and more by perceived comparison difficulty and performance risk.

In sum, a distinctive late entrant is perceived both more discrepant and more ambiguous than an enhanced entrant. In a familiar product class, discrepancy effects become more salient while ambiguity effects less salient. In an unfamiliar product class, ambiguity effects are more salient and discrepancy effects less salient. As a result, a distinctive strategy should work better in a familiar product class while an enhancing strategy is more effective when the product class is particularly novel. Therefore,

H5a: In familiar product classes, a distinctive late entrant will be judged more favorably than an enhanced late entrant.

H5b: In unfamiliar product classes, a distinctive late entrant will be judged less favorably than an enhanced late entrant.

To further explore the underlying process involved in new brand learning and evaluation, we could let a distinctive late mover enter the market together with an enhanced one, then examine the thoughts that consumers list as justifications for their judgments (cf. Zhang and Markman 2001). Based on previous arguments, in familiar product classes, if unique features are indeed the focus of the comparison, then unique features will be used more as justifications for one's judgment. In contrast, in novel product classes, if enhanced features indeed receive more attention and weight more heavily in the comparison process, they should be listed more as reasons for the decisions. Hence,

H6a: In familiar product classes, preference judgments will be justified more by unique features than by enhanced features.

H6b: In unfamiliar product classes, preference judgments will be justified more by enhanced features than by unique features.

The above discussion compares the efficacy of an enhancing strategy and a distinctive strategy in different product classes. In the next section, we will discuss under what conditions a late entry strategy may be able to overtake or partially attenuate pioneering advantage, and thus, achieve a late-mover advantage.

3.2.3 Late Entry Strategies and Late-Mover Advantage

Enhanced features may enable an enhanced late entrant to overtake the pioneer because of the low levels of ambiguity (i.e., *ease of comparison* and *low perceived performance risk*). An enhanced feature forces the comparison process along a common dimension so all the brands have a comparable representational structure and thus are easy to compare (Johnson 1984). A comparison along the same dimension is preferred to an across-attribute comparison because in a within-attribute comparison, no trade-offs between attributes is needed to reach a solution, and thus, mental effort and cognitive strain are minimal (Tversky 1969; Tversky, Sattath, and Slovic 1988). As Johnson (1984) suggests, consumers seek a within-attribute strategy even when the alternatives are not comparable (e.g., comparing a stereo and a television). Second, comparability may increase the importance of the common features during a comparison process. A brand is usually a multidimensional stimulus with two or more component attributes. Some attributes add to the complexity of the information processing task required of a comparison, so consumers often change their cue utilization systematically in order to reduce the strain on memory. Cue dimensions thus will be weighted more heavily when they are common in a comparative judgment (Slovic and MacPhillamy 1974; Zhang and Markman 1998).

An enhanced feature could also reduce perceived ambiguity of attribute value. By positioning along a common attribute, an enhanced feature could allow consumers to judge more easily which contrasting value is better, either subjectively or objectively (Hsee 1996;

Maheswaran, Sternthal, and Gurhan 1996; Zhang, Kardes, and Cronley 2002). As such, consumers will perceive less performance uncertainty about the enhanced feature. When the decision ambiguity level is low, it is relatively easy for consumers to identify the superiority of an enhanced late entrant, and the decision can be made with greater confidence (Muthukrishnan 1995). Therefore, consistent with Zhang and Markman (1998), we predict that an enhancing strategy will attenuate pioneering advantage. However, because ambiguity effects (comparison difficulty and performance risk) are more salient in unfamiliar product classes and less salient in familiar product classes, an enhancing strategy is more likely to overtake pioneering advantage in an unfamiliar product class. That is,

H7a: The preference for the pioneer will be attenuated in the presence of an enhanced late entrant, especially in unfamiliar product classes (vs. familiar product classes).

For a distinctive late entrant, its unique features are usually novel and unexpected, thus, are easy to gain attention and will be processed more extensively in a piecemeal mode. Novel information often receives greater weight in judgment (Kahnemann 1973), so the novelty of a unique attribute tends to make it loom larger in brand evaluation. This suggests that a distinctive late entrant has not only a positive perceptual and retrieval bias, but may also be favorably evaluated simply because it conveys something unique and novel. In addition, a new feature tends to be more salient in inter-brand comparison because it is unique. Consequently, the unique feature makes the late brand distinctive – not only different but also more salient. It tends to be perceptually dominant, and thus preferred to the same brand without the unique attribute (Carpenter, Glazer and Nakamoto 1994). However, because this discrepancy effect is more salient in familiar product classes, it will help a distinctive entrant compete with the pioneer to a greater extent in a familiar product class. Therefore, it is predicted,

H7b: The preference for the pioneer will be attenuated in the presence of a distinctive late entrant, especially in familiar product classes (vs. unfamiliar product classes).

Table 3-1 provides a summary of the hypotheses. The hypotheses are tested in 3 studies.

Studies 1 and 2 are reported in chapter 4 and Study 3 reported in chapter 5.

Table 3-1 Summary of the Hypotheses

-
- H1:** Compared to an enhanced late entrant, a distinctive late entrant results in:
- greater perceptions of differentiation,
 - greater perceptions of comparison difficulty, and
 - greater perceptions of performance risk.
- H2a:** In familiar product classes, unique features of a distinctive late entrant are more likely to be recalled than enhanced features of an enhanced entrant.
- H2b:** In unfamiliar product classes, unique features of a distinctive late entrant are less likely to be recalled than enhanced features of an enhanced entrant.
- H3a:** In familiar product classes, shared features are less likely to be recalled for a distinctive late entrant than for an enhanced entrant.
- H3b:** In unfamiliar product classes, shared features are more likely to be recalled for a distinctive late entrant than for an enhanced entrant.
- H4a:** In familiar product classes, preference judgments will be affected more by perceived differentiation and less by perceived comparison difficulty and performance risk.
- H4b:** In unfamiliar product classes, preference judgments will be affected less by perceived differentiation and more by perceived comparison difficulty and performance risk.
- H5a:** In familiar product classes, a distinctive late entrant will be judged more favorably than an enhanced late entrant.
- H5b:** In unfamiliar product classes, a distinctive late entrant will be judged less favorably than an enhanced late entrant.
- H6a:** In familiar product classes, preference judgments will be justified more by unique features than by enhanced features.
- H6b:** In unfamiliar product classes, preference judgments will be justified more by enhanced features than by unique features.
- H7a:** The preference for the pioneer will be attenuated in the presence of an enhanced late entrant, especially in unfamiliar product classes (vs. familiar product classes).
- H7b:** The preference for the pioneer will be attenuated in the presence of a distinctive late entrant, especially in familiar product classes (vs. unfamiliar product classes).
-

CHAPTER 4 STUDIES 1 AND 2

Study 1 is developed to test H1 ~ H5, H7, and Study 2 to test H6. The pioneering brand (Brand A) is created by stating explicitly “it is the pioneering brand in the market” as well as manipulating the order of entry and number of exposures. To simulate that the pioneer often is encountered more frequently than followers, Brand A is presented on three successive sections (Kardes and Kalyanaram 1992; Zhang and Markman 1998). It is the first and only brand presented to the subjects in Section 1, and then it is presented again in Section 2, along with a new entrant (Brand B). In section 3, Brand A and B are presented again, together with a new entrant (Brand C). Consistent with Carpenter and Nakamoto (1989), Brand A is also assumed to be a successful pioneer to increase the likelihood of subjects judging late entrants based on Brand A’s attribute combination. So subjects are informed that Brand A has been pretty successful.

For the familiar product class, a pretest was conducted to make Brand A and B equally attractive and Brand C, the last entrant, is objectively superior to Brand A and B. This design will demonstrate (1) whether a pioneering advantage is achieved to lead consumers to prefer Brand A to Brand B, and (2) whether an objectively superior late entrant (Brand C) could overtake the pioneer (Brand A). Subjects in all the experiments and pretests were undergraduate students in business school at a large southeastern university and they received extra credit for their participation.

4.1 Pretests

Three pretests were run to determine the product stimuli, develop the procedures, and refine the measurement of focal constructs. A portable CD player was the product stimulus for the familiar product class because of its popularity in college populations (Brown and Carpenter

2000; Carpenter, Glazer, and Nakomoto 1994). Pretest 1 was conducted to develop a specific attribute combination for a portable CD player. Based on *Consumer Reports* (1999), ten attributes were included, with each attribute having two feature levels (one level is superior to the other, see Appendix 1). 20 students participated in the pretest and were asked to indicate the attribute importance for a CD player with a superior feature level on a nine-point scale (1 = "not at all important" and "9 = very important"). The results of importance ratings are presented in Appendix 1. To avoid "a ceiling effect" as well as "a floor effect", two moderately important feature levels (i.e., studio signal system and digital sound control) were selected as the focal attributes for the following experiments (Sujan and Bettman 1989, p. 458). In addition, the importance ratings of these two superior features were equal (Studio Signal System: 6.85; Digital Sound Control: 7.00; $t = .318$, $p = .754$).

Pretest 2 aimed to develop the measures and procedures and tested the possible confounding of enhanced/unique features (i.e., studio system vs. digital sound control) in a familiar product class, portable CD players. "New feature" is treated as a between-subject factor: for half the participants, "studio sound system" is the new feature and "digital sound control" is the enhanced one; for the other half, "digital sound control" is the new feature and "studio system" is the enhanced one. Because the two new features are of equal importance, using studio signal system or digital sound control as the new feature should have no influences on the pattern of data obtained. 81 subjects participated in the pretest and the findings show that the factor "new feature" has no significant influences on the results. The results also suggest that there are some issues with the clarity of the questionnaire and several measures are not satisfactory. Therefore, Pretest 3 was developed to refine the measures and procedures. 63 subjects participated in the Pretest 3. The results again show that the factor "new feature" has no

significant effects on the results. Further, the refined measures possess higher reliability than in Pretest 2.

In sum, Pretests 2 and 3 refined the procedures and measures for this thesis and provided some preliminary evidence for H1~H4 in a familiar product class. Further, Pretests 2 and 3 indicated that the factor – “new feature” had no effect on the pattern of data obtained. These results provided directions for the following experimental design.

4.2 Study 1

4.2.1 Design

The purpose of Study 1 is to test H1 ~ H5 and H7. The two primary independent variables are *entry strategy* (enhancing vs. distinctive strategy) and *product familiarity* (unfamiliar vs. familiar product). Both factors are run between subjects. To assess the exact effects of entry strategies, we must control the feature importance of enhanced/unique features. For this purpose, *new feature* is added as another between-subject factor. For example, for half of the participants, Studio System is the new feature and Digital Sound Control is the enhanced one; for the other half, Digital Sound Control is the new feature and Studio System is the enhanced one. This constitutes a 2 (entry strategy) x 2 (product familiarity) x 2 (new feature) factorial design. 160 college students, 20 in each cell, were recruited in the study.

4.2.2 Stimuli

A portable CD player was used as the familiar product stimulus. All its attributes and attribute levels were adapted from *Consumer Reports* (1999), but coined names were given to the enhanced and new features. The instant language translator, a madeup product, was used as the unfamiliar product (cf. Carpenter and Nakamoto 1989). By so doing, the novel product could be

featured with similar attribute combinations used in the familiar product case, but the attribute description is changed slightly. The description of an language translator is as follows:

An instant language translator is a brand-new product designed specifically for tourists. With a microchip, a microphone, and an inside speaker, it can translate simple oral English to other languages such as French and Spanish, and vice-versa, phonetically. This new product greatly helps tourists handle language translation problems and enables them to enjoy the pleasure of sightseeing without the risk of loss.

Altogether, four brands (A, B, and C/C') for each class were created on the basis of the attribute levels. Brand C was the enhanced late entrant and Brand C' the distinctive one. Based on the pretests, Brand C/C' was designed as objectively superior to Brand A (the pioneer) and B (second entrant), and Brand A and B were equally attractive. So the success of the manipulation of the pioneering effect could be demonstrated by the results that Brand A was preferred to Brand B (cf. Kardes and Kalyanaram 1992; Zhang and Markman 1998). To reflect the idea of moderate discrepancy and to control the possible confounding effects of multi-attributes, Brand C/C' is designed as better than Brand A only on *one* attribute (Sujaan and Bettman 1989, p. 461). This also has ecological validity in that manufactures often "introduce new products that differ from existing alternatives only on one attribute" (Meyers-Levy and Tybout 1989, p. 43; Banbury and Mitchell 1995, p.153). The attribute descriptions of each brand and their levels are presented in the Table 4-1.

Table 4-1 Attributes of CD Players/Language Translators Used in Study 1

1. New feature is Studio Signal System

Attribute	Levels*	Pioneer (Brand A)	Second (Brand B)	3 rd : Enhanced (Brand C)	3 rd : Distinctive (Brand C')
Locate speed	2 or .5 seconds	2	2	2	2
Memory Buffer	10 or 40 seconds	40	15	40	40
Error Correction Rating	4.00 or 4.25	4.00	4.25	4.00	4.00
Sound Control	Stereo or Digital	Stereo	Stereo	Digital	Stereo
New feature					Studio System

2. New feature is Digital Sound Control

Attribute	Levels*	Pioneer (Brand A)	Second (Brand B)	3 rd : Enhanced (Brand C)	3 rd : Distinctive (Brand C')
Locate speed	2 or .5 seconds	2	2	2	2
Memory Buffer	10 or 40 seconds	40	15	40	40
Error Correction Rating	4.00 or 4.25	4.00	4.25	4.00	4.00
Signal System	Stereo or Studio	Stereo	Stereo	Studio	Stereo
New feature					Digital Sound Control

* Attribute level 2 is superior to level 1.

Note: The novel product, a language translator, is designed to possess similar attribute combinations as the familiar product (CD player), but the attribute description is changed slightly.

4.2.3 Procedure

In the experiment, subjects were told to evaluate hypothesized products. The questionnaire consisted of three sections. In *section 1*, the product class was described and attribute descriptions were provided. Attribute information about Brand A was also provided. To make it a successful pioneer (Carpenter and Nakamoto 1989), it was stated that Brand A is the pioneer and has been pretty successful. To induce participants to study the attribute descriptions, subjects were asked to evaluate the brand on a nine-point scale (“bad”/“good”, “unsatisfactory”/“satisfactory”, “unfavorable”/“favorable”) and indicated their confidence in judgment (Kardes and Kalyanaram 1992; Zhang and Markman 1998).

Then, like other category-related/schema-related studies, subjects turned to a 5-minute distractor task to avoid short-term memory effects on brand evaluations in the following section

(e.g., Carpenter and Nakamoto 1989; Meyers-Levy and Tybout 1989; Sujan and Markman 1989; Peracchio and Tybout 1996). The distractor task was unrelated to the experiment yet was constructed as a seemingly integral part of the experiment.

After completing the distractor task, subjects turned to **Section 2**, which contained the name of the pioneer and attribute information of a follower. The pioneer, indicated as “this is the brand you saw before”, was presented first (but no attribute information is provided³) and followed by the attribute descriptions of the follower. Again, in order to induce participants to study the attribute descriptions, subjects were asked to evaluate the brands.

Then, another 5-minute distractor task was used to clear short-term memory. After the distractor task, subjects turned to **Section 3**, which contained the names of the first two entrants and the attribute information of the last entrant, either the enhanced entrant or the distinctive one. The first two entrants were indicated as “this is the brand you saw before” respectively and the attribute information of the last entrant was presented. Participants were asked to make brand evaluations and preference judgements, and indicated their perceptions of the third entrant and answered several questions regarding manipulation checks. Finally, they were given a page with an enhance/distinctive brand name at the top and asked to recall as many features of the brand as they could. They were not allowed to look at the descriptions for this task. The entire procedure took about 30 minutes to administer.

³ There are two reasons for not providing attribute information of the pioneer in Session 2 and 3. First, according to the category-based learning perspective, new brands are learned through a comparison by referring to the pioneering brand, whose attribute combination is stored in consumers’ memory. Second, providing attribute descriptions of both the pioneer and follower is likely to lead to a pure attribute-by-attribute comparison. Because it is hard to create a brand-equity effect for the pioneer in the experiment, this attribute-by-attribute comparison will disadvantage the pioneer (Kardes and Kalyanaram 1992, p. 351).

4.2.4 Measurement

Independent Variables. As discussed earlier, two primary independent variables are *entry strategy* (enhanced vs. distinctive strategy) and *product category* (unfamiliar vs. familiar product class). Entrant strategy was an enhanced or distinctive one through the manipulation of the attributes possessed by the last entrant. A language translator acted as an unfamiliar product and a CD player the familiar one.

Dependent Variables. The dependent variables are preference judgment, feature recall, and consumer perceptions (perceived differentiation, comparison difficulty, and perceived performance risk). All the measures were either adapted from established research or specifically designed and refined for this dissertation. As reported below, the Cronbach coefficients of all the measures (except preference judgement and feature recall) varied from .71 to .94, exceeding the usual 0.70 benchmark (Nunnally and Bernstein 1994).

1. *Preference Judgment.* A constant sum scale was used to measure brand preference in Section 3. Participants were asked to allocate 100 points among the three brands to reflect their relative preferences of each brand. This scale provides an indicator of choice probability at an individual level (cf. Hauser and Shugan 1980) and thus represents a useful surrogate for market share (Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992).

2. *Feature Recall.* One naive rater classified recall protocols as correct or incorrect based on both the attribute and the feature levels. The rater scored the number of shared, enhanced, and unique features correctly recalled. I coded one-half of the responses selected randomly, and there was 99% agreement between raters. Disagreements were resolved by discussion. The proportion of correct feature recall was used as the measure.

3. *Perceived differentiation*. Based on Sujan and Bettman (1989, p. 458) as well as pretests, a three-item nine-point Likert-scale (1: strongly disagree, 9: strongly agree) measure was developed. Participants were asked to indicate their agreement/disagreement with statements like “this brand is distinctive from other brands”, “this brand is different from other brands”, and “this brand can be easily distinguished from other brands” (Cronbach $\alpha = .943$).

4. *Comparison difficulty*. Based on Kalra and Goodstein (1998, p. 214), Zhang, Kardes, and Cronley (2002), and pretests, a three-item nine-point Likert scale (1: strongly disagree, 9: strongly agree) measure was developed for this study. Participants were asked to indicate their agreement/disagreement with statements like “it is easy for me to compare this brand to other brands”, “it takes me little effort to compare this brand to other brands”, and “I feel puzzled when comparing this brand to other brands” ($\alpha = .713$).

5. *Perceived performance risk*. The measure of perceived performance risk was adapted from previous studies (Grewal, Gotlieb, and Marmorstein 1994; Shimp and Bearden 1982). Participants indicated their agreement/disagreement on three nine-point scaled items: “I am sure that this brand will perform as described”, “I am certain that this brand will work satisfactorily”, and “I am confident that this brand will perform as expected” ($\alpha = .932$).

Manipulation Check. Three manipulation checks were included: *product familiarity*, *feature newness*, and *feature importance*. Participants indicated their familiarity with both the product and the features of the product (nine-point Likert scale; $\alpha = .922$). They also indicated whether the superior feature possessed by the last entrant was a brand-new feature (nine-point Likert scale, 1 = strongly disagree; 9 = strongly agree) and the importance of purchasing a product with a superior feature (nine-point Likert scale, 1 = not at all important; 9 = very important).

4.2.5 Results

Manipulation check. The manipulation of product familiarity was significant: subjects were more familiar with CD players (mean = 6.13) than with language translators (mean = 2.16; $F(1, 158) = 170.35, p < .001$). The manipulation of feature newness was also significant. A feature, whether the digital sound control or studio signal system, was perceived as more as a brand-new feature when positioned as a unique feature (mean = 6.61) than when positioned as an enhanced feature (mean = 4.76; $F(1, 158) = 36.08, p < .001$). Finally, digital sound control (mean = 6.91) and studio signal system (6.65) were seen as equally important ($F(1, 158) = .853, p = .357$).

Preference judgments as a function of order-of-entry was tested to assess whether the experiment design adequately captured the pioneering effect. Because Brand A and B were designed as equally attractive, if Brand A was judged more favorably than Brand B, then a pioneering advantage was obtained through the design (Kardes and Kalyanaram 1992; Zhang and Markman 1998). A paired t-test revealed a significant difference in preference judgments of these two brands: more points were allocated to Brand A ($m = 31.98$) than to Brand B ($m = 22.37, t(159) = 6.16, p < .001$), suggesting the successful manipulation of pioneering effects. The results of the preference judgments are presented in Table 4-2.

Table 4-2 Means of Preference Judgments

		Pioneer (Brand A)	Second Entrant (Brand B)	Last Entrant (Brand C/C')
Overall	(n = 160)	31.977	22.373	45.650
Familiar product	(n = 80)	33.468	21.968	44.564
Enhancing strategy	(n = 40)	36.553	22.860	40.587
Distinctive strategy	(n = 40)	30.384	21.075	48.541
Unfamiliar product	(n = 80)	30.486	22.778	46.736
Enhancing strategy	(n = 40)	29.294	20.781	49.925
Distinctive strategy	(n = 40)	31.678	24.776	43.546
Enhancing strategy	(n = 80)	32.923	21.821	45.256
Distinctive strategy	(n = 80)	31.031	22.925	46.044

Hypothesis Testing. Because it is proposed that preference judgments can be explained by feature recall and perceptual mechanisms, I first compared perceptions (H1) and preference judgments (H5 and H7) of each entrant. Then feature recall (H2 and H3) was tested to reveal the underlying comparison process. Finally, the role of behavioral mechanisms (H4) was assessed. Because the manipulation of new feature had no impact on the results, I do not discuss it further.⁴

Perceptions and Preference Judgments

H1 states that, compared to an enhanced late entrant, a distinctive late entrant is perceived to be more differentiated (H1a), more difficult-to-compare (H1b), and more performance-risky (H1c). A MANOVA test indicates the significant difference between consumer's perceptions of these two strategies. Subsequent t-tests (see Table 4-3) show that a distinctive strategy, compared to an enhancing strategy, leads to a greater perception of differentiation (5.71 vs. 4.87, $p = .002$), comparison difficulty (3.74 vs. 3.42, $p = .065$, marginally significant), and performance risk (4.21 vs. 3.50, $p = .001$), supporting H1. To test whether feature importance affects the results, another MANCOVA with feature importance as covariate was also run and feature importance was found to be nonsignificant.

Table 4-3 Perceptions of Distinctive and Enhanced Late Entrants (H1)

Mean and S.D.	Enhanced late entrant (n = 80)	Distinctive late entrant (n = 80)	t (158)	p value
Perceived Differentiation	4.871 (1.912)	5.713 (1.656)	2.976	.002
Comparison Difficulty	3.417 (1.340)	3.737 (1.322)	1.524	.065
Performance Risk	3.500 (1.338)	4.208 (1.322)	3.369	.001

Note: MANOVA Wilks' Lambda = .873, $F(3, 156) = 7.536$, $p < .001$

⁴ A MANOVA was run to test the effect of new feature on preference judgments and the results indicated that new feature had no significant influence on preference judgments (MANOVA Wilks' Lambda = .978, $F(2, 157) = 1.780$, $p > .10$).

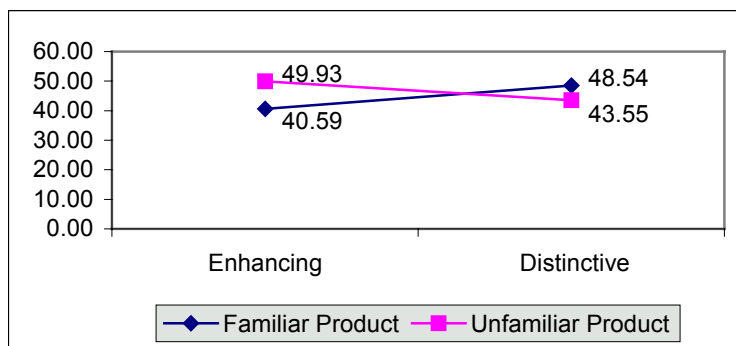
H5 deals with consumer preference judgments of distinctive/enhanced entrants in familiar/unfamiliar product classes. An ANOVA (see Table 4-4) revealed that the interaction effect of strategy \times product category is significant ($F(1, 156) = 11.651, p = .001$). Planned comparisons showed that a distinctive late entrant is judged more favorably than the enhanced one in the familiar product class (distinctive = 48.541, enhancing = 40.587, $t(156) = 2.679, p < .01$), while an enhanced one is allocated more points than the distinctive case in an unfamiliar product class (distinctive = 43.546, enhancing = 49.925, $t(156) = 2.148, p < .05$), supporting H5 (see Figure 4-1). To test whether feature importance affects the results, an ANCOVA with feature importance as covariate was also run. Feature importance was found to positively impact preference judgments ($F(1,155) = 9.16, p < .01$), but the interaction effects of strategy \times product category is still highly significant ($F(1,155) = 13.07, p < .001$).

Table 4-4. Hypotheses Testing (H5)

a. ANOVA test	ANOVA F(1, 156)					
	Product category	Entry strategy	Product \times Strategy			
H5: Preference Judgment	1.070	.141	11.651 ***			
b. Planned Comparison Mean and S.D.	Familiar Product			Unfamiliar Product		
	Enhancing	Distinctive	t(156)	Enhancing	Distinctive	t(156)
H5: Preference Judgment	40.587 (13.518)	48.541 (11.008)	2.679 ***	49.925 (14.512)	43.546 (13.814)	2.148 **

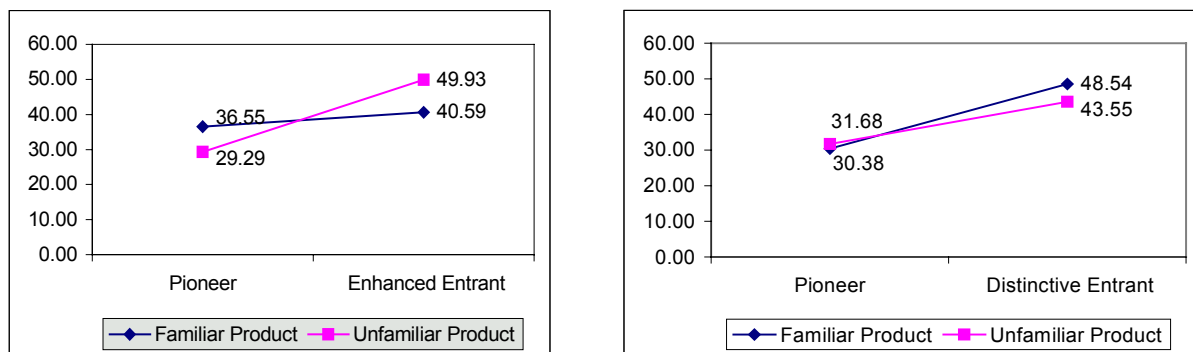
Note: *** $p < 0.01$ (1-tailed), ** $p < 0.05$ (1-tailed), * $p < 0.10$ (1-tailed).

Figure 4-1. Preference Judgments: Effects of Enhancing and Distinctive Strategies (H5, Study 1)



H7 deals with the effects of late entry strategies in overcoming pioneering advantage. Consistent with H7, a 2 (order of entry: pioneer, last entrant; within-subject) \times 2 (strategy: enhancing, distinctive; between subject) \times 2 (product: familiar and unfamiliar; between subject) mixed ANOVA performed on preference judgments yielded a significant interaction effect of order of entry \times strategy \times product ($F(1, 156) = 11.30, p = .001$). Follow-up tests showed that the enhanced entrant was allocated more points than the pioneer in the unfamiliar product case ($M = 49.93$ vs. $29.29, p < .001$) but not in the familiar product case ($M = 40.59$ vs. $36.53, p > .10$), and the former effect is stronger than the latter one ($F(1, 78) = 10.61, p = .002$), lending support to H7a. Further, the distinctive entrant tended to be preferred over the pioneer in both the familiar ($M = 48.54$ vs. $30.38, p < .001$) and unfamiliar ($M = 43.55$ vs. $31.68, p = .001$) case, and the former is slightly stronger than the latter effect ($F(1,78) = 1.941, p = .084$), supporting H7b (see Figure 4-2).

Figure 4-2 Preference Judgments: Effects of Enhancing and Distinctive Strategies (H7, Study 1)

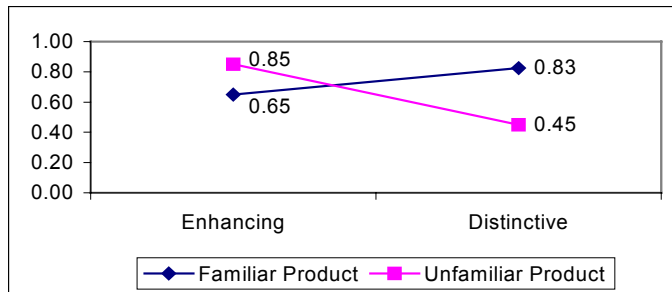


Feature Recall

A 2 \times 2 MANOVA was used to test H2 and H3 (see Table 4-5). H2 argues that unique features are recalled better than enhanced features in familiar product classes but worse in unfamiliar product cases. Consistent with our prediction, Table 4-5 shows a significant

interaction effect of strategy \times product category ($F(1, 156) = 17.264, p < .001$). Planned comparisons revealed that more unique features ($m = .825$) are recalled than enhanced features ($m = .650, p < .05$) in the CD player case, but more enhanced features ($m = .850$) are recalled than unique features ($m = .450, p < .001$) in the language translator case, supporting H2⁵ (see Figure 4-3).

Figure 4-3. Enhanced/Unique Feature Recall (H2, Study 1)



H3 deals with shared feature recall. Table 4-5 shows that the interaction effect of strategy \times product category is significant ($F(1, 156) = 5.680, p < .01$). Subsequent analysis revealed that consumers recalled more shared features of an enhanced entrant ($m = .658$) than those of a distinctive one ($m = .338, p < .001$) in a familiar product case, supporting H3a. However, shared feature recalls are similar for enhanced ($m = .517$) and distinctive entrants ($m = .431, p > .10$) in an unfamiliar product case. Thus, H3b is not supported (see Figure 4-4). Because in the experiment design, an enhanced entrant has three shared features while a distinctive one has four, another test with number of shared feature recall as the dependent variable was run and got consistent results: the findings lend support to H3a but not to H3b (see

⁵ Because there is only one enhanced or unique feature, enhanced/unique feature recall is 0/1 variable. So a concern is that F-test may be inappropriate for this test. To address this concern, a Z-test was conducted to test H2. The results show that unique features are recalled better than enhanced features in the CD player case ($Z = 1.785, p < .05$), but worse in the language translator case ($Z = 3.750, p < .001$), supporting H2. Nevertheless, F-test is reported because conceptually, enhanced/unique feature recall is a ratio-scaled measure.

Table 4-5b, H3’). To test whether feature importance affects the result, a 2×2 MANCOVA (feature importance as covariate) was run and feature importance was found to be nonsignificant.

Figure 4-4. Shared Feature Recall (H3, Study 1)

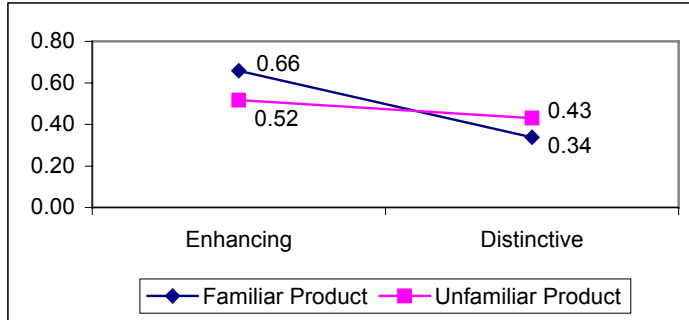


Table 4-5. Hypotheses Testing (H2 and H3)

a. ANOVA test	ANOVA F(1, 156)		
	Product category	Entry strategy	Product \times Strategy
H2: Enhanced/Unique Feature Recall	1.599	2.644	17.264 ***
H3: Proportion of Shared Feature Recall	.235	16.916 ***	5.680 ***
MANOVA Wilks' λ	.983	.896 ***	.808 ***

b. Planned Comparison Mean and S.D.	Familiar Product			Unfamiliar Product		
	Enhancing	Distinctive	t(156)	Enhancing	Distinctive	t(156)
H2: Enhanced/Unique Feature Recall	0.650 (0.483)	0.825 (0.385)	1.788 **	0.850 (0.362)	0.450 (0.504)	4.088 ***
H3: Proportion of Shared Feature Recall	0.658 (.342)	0.338 (.269)	4.594 ***	0.517 (.362)	0.431 (.266)	1.223
H3': Number of Shared Feature Recall	1.975 (1.025)	1.350 (1.075)	2.632 ***	1.550 (1.085)	1.725 (1.062)	.737

Note: *** $p < 0.01$ (1-tailed), ** $p < 0.05$ (1-tailed), * $p < 0.10$ (1-tailed).

Post Analysis on Feature Recall. H2 and H3 compare the recall of an enhanced entrant's features with the recall of a distinctive entrant's features. To further test the proposed process underlying a new brand learning (i.e., unique features are the focus of comparison in a familiar product class while enhanced features receive more attention in an unfamiliar product case), a number of post analyses were conducted (see Table 4-6).

Table 4-6. Post Analyses on Feature Recall

	Enhanced Entrant			Distinctive Entrant		
	Familiar Product	Unfamiliar Product	t(78)	Familiar Product	Unfamiliar Product	t(78)
a: Enhanced Feature Recall	0.650	0.850	2.096 **			
b: Unique Feature Recall				0.825	0.450	3.741 ***
c: Shared Feature Recall	0.658	0.517	1.801 **	0.338	0.431	1.569 *

Note: *** $p < 0.01$ (1-tailed), ** $p < 0.05$ (1-tailed), * $p < 0.10$ (1-tailed).

The results of post analyses show that, enhanced features are recalled better in an unfamiliar product class than in a familiar case (see Table 4-6a); in contrast, unique features are recalled better in a familiar case than in an unfamiliar case (see Table 4-6b). These findings are consistent with the proposed perspective. The tests of shared feature recall showed some interesting result (see Table 4-6c). For an enhanced entrant, shared features are recalled better in a familiar case than in an unfamiliar case; while for a distinctive entrant, the results are reversed. These findings seem to support Lynch and Srull's (1982) notion that consumers have limited attention and processing capacities.

Because shared features do not provide much diagnostic information to the judgments (Zhang and Markman 1998), it sounds plausible to propose that enhanced/unique features are more likely to be recalled than shared features. Paired t-tests were run to test this proposition. The results show that for the enhanced entrant, enhanced feature recall ($m = .85$) is better than shared feature recall ($m = .52$, $t = 3.91$, $p < .001$) in an unfamiliar product class, but not in the familiar product case (enhanced = .65, shared = .66, $t = .11$, $p > .10$). For the distinctive entrant, unique feature recall ($m = .83$) is better than shared feature recall ($m = .34$, $t = 6.66$, $p < .001$) in a familiar product class, but not in the unfamiliar case (unique = .45, shared = .43, $t = .24$, $p > .10$). These findings provide partial support to the diagnosticity argument and more support to the proposed perspective.

The Role of Behavioral Mechanisms

H4 examines the effects of behavioral mechanisms (perceived differentiation, comparison difficulty, and performance risk) upon preference judgments. Regression analyses were run to test H4 and the results are presented in Table 4-7, Model 3 (entry strategy is coded as a dummy variable: 0 = enhancing strategy, 1 = distinctive strategy; feature importance is the control variable; construct correlations are reported in Table 4-8). Table 4-7a, Model 3 was used to test H4a. Consistent with the prediction in H4a, the results show that in a familiar product class, preference judgment is strongly affected by perceived differentiation ($\beta = .385$, $p < .001$) but not by either comparison difficulty ($\beta = -0.097$, $p > .10$) or performance risk ($\beta = .059$, $p > .10$). Table 4-7b, Model 3 shows that in an unfamiliar product class, preference judgment is positively related to perceived differentiation ($\beta = .213$, $p < .05$), not associated with comparison difficulty ($\beta = -.003$, $p > .10$), and negatively linked to performance risk ($\beta = -.444$, $P < .001$), leading partial support to H4b. A further model comparison between an unconstrained model which freely estimated all the coefficients and a constrained model that set the coefficients of differentiation and performance risk equal to each other showed that performance risk has a stronger impact on preference judgments than differentiation ($F(1,74) = 7.756$, $p < .01$). This result lends strong support to H4b.

In the framework, the behavioral mechanisms are proposed to account for the effects of entry strategies upon preference judgment, i.e., behavioral mechanisms are proposed as mediators. To test the mediating role of these mechanisms, regression analyses were run following Baron and Kenny (1986) (see Table 4-7). Table 4-7a shows that entry strategy significantly affects preference judgment (Model 1) and its effect becomes only marginally significant (Model 3) when the behavioral mechanisms enter the model, signifying that these

mechanisms do act as mediators. Further, Table 4-7a suggests that perceived differentiation is the key factor that impacts the effects of a late entry strategy in a familiar product class. Table 4-7b shows that in an unfamiliar product class, perceived differentiation does impact the evaluations, but not as a mediator (Model 4). Performance risk appears to be the key mediator (Model 5). Taken together, these results provide strong support for our proposed perspective.

Table 4-7. Standard Coefficient Estimation (H4 & Mediation Test)

Independent Variables	a. Familiar Product			b. Unfamiliar Product				
	(1)	(2)	(3)	(1)	(2)	(3)	(4)	(5)
Strategy	.308***		.154*	-.245**		-.151*	-.248**	-.125
Perceived Differentiation		.439***	.385***		.196**	.213**	.276***	
Comparison Difficulty		-.108	-.097		-.027	-.003	-.112	.018
Performance Risk		.103	.059		-.479***	-.444***		-.478***
Feature Importance	.228**	.213**	.207**	.233**	.129*	.150*	.188**	.168**
R-Square	.149	.259	.277	.103	.333	.353	.186	.310

Note: *** p < .01, ** p < .05, * p < .10

(1) Dependent Variable: Preference Judgments

(2) Entry Strategy is coded as “0 = enhancing strategy” and “1 = distinctive strategy”.

(3) All the VIFs < 1.50, indicating that multicollinearity is not a concern in this study.

Table 4-8. Means, Standard Deviations, and Correlations

	Preference judgment	Entry strategy	Perceived Differentiation	Comparison Difficulty	Performance Risk	Feature Importance
Preference Judgment	1.000					
Entry Strategy	.029	1.000				
Perceived Differentiation	.352*	.230*	1.000			
Comparison Difficulty	-.109	.120	.079	1.000		
Performance Risk	-.261*	.259*	-.038	.227*	1.000	
Feature Importance	.221*	.052	.121	-.010	.153	1.000
Mean	45.650	—	5.292	3.577	3.854	6.781
S.D.	13.685	—	1.832	1.337	1.372	1.797

* Correlation is significant at the 0.05 level (2-tailed).

4.2.6 Discussion

Overall, the results of Study 1 provide strong support for the proposed model. First, the recall tests (H2, H3, and the post analyses) revealed the underlying process through which a late entrant is learned and evaluated. That is, unique features are the focus of comparison in a familiar product class. However, if the product class is particular novel, common features, especially enhanced features, will receive particular attention.

Further, the study tested the behavioral mechanisms that enable an enhancing or distinctive strategy to achieve a late-mover advantage (H4 and mediation tests). Discrepancy effects and ambiguity effects are found to mediate the relationship between late entry strategies and consumer's preference judgment. In a familiar product class, discrepancy effects (perceived differentiation) is the key factor that determines entry strategy's efficacy. In contrast, in an unfamiliar product class, ambiguity effects (perceived performance risk) is the leading factor.

Previous studies have shown that the pioneer can enjoy an advantage over even an objective late entrant (Kardes and Kalyanaram 1992). This study suggests an objective late entrant with an enhancing or distinctive strategy to be able to overtake pioneering advantages under certain circumstances (H7). Consistent with Zhang and Markman (1998), we find that an enhanced late entrant may outperform the pioneer. But contrary to Zhang and Markman, we find that an enhancing strategy overtakes pioneering advantage only in the unfamiliar product case but not in the familiar product case (H7a). Moreover, we find that a distinctive strategy works in either case, suggesting that unique features can also enable a late mover to outperform the pioneer (H7b). Finally, a distinctive strategy is more effective in a familiar product class, while an enhancing strategy works better in an unfamiliar product class (H5).

4.3 Study 2

The results of study 1 strongly support the proposed framework. However, one particular type of ambiguity effects – comparison difficulty – was found to have no impact on consumer evaluations of late entrants (see Table 4-7). This is inconsistent with Zhang and Markman's (1998) arguments and Zhang, Kardes, and Cronley's (2002) findings. Two possible explanations are: (1) the judgment task is quite easy so that the variance of comparison difficulty is not large enough to detect the effects; and (2) performance risk is the key determinant factor, thereby, with the presence of performance, comparison difficulty becomes less salient. Another potential limitation in Study 1 is the entrant strategy (distinctive vs. enhanced) is a between-subject factor, so Study 1 doesn't reveal much about consumer evaluations and judgments when distinctive and enhanced late movers enter the market together.

To examine these issues, test H6, and further test H1, H4, H5, and H7, Study 2 was developed. Study 2 is different from Study 1 in that: (1) the distinctive/enhanced late entrants enter the market simultaneously in Section 3, so entry strategy in Study 2 is a within-subject factor. (2) Brands A (the pioneer) and B (the second entrant) in Study 1 are reversed in Study 2. That is, the pioneer in Study 1 serves as the second entrant in Study 2, the second entrant in Study 1 serves as the pioneer in Study 2. As such, if the pioneer is still preferred to the second entrant, then we could say the pioneering effect is achieved and robust in this experiment design. The feature combination of Brand C/C' is adjusted accordingly. The attribute descriptions of each brand and their levels are presented in the Appendix 2. (3) After participants make the preference judgments in Section 3, they are asked to justify their decisions regarding evaluations and then indicate their perceptions of the last two entrants (i.e., the enhanced and distinctive entrants). (4) A between-subject factor, presentation order, is used to control the possible order

effect, i.e., whether the enhanced mover is provided either before or after the distinctive one (on the same page) in Section 3.

4.3.1 Design

The two primary independent variables were *entry strategy* (enhancing vs. distinctive strategy) and *product familiarity* (unfamiliar vs. familiar product). Entry strategy was run within subjects and product category was a between-subject factor. *New feature* was a between subject factor to control the potential confounding effects of attribute importance. *Presentation order* was added as another between-subject factor to control the possible order effect. That is, in Section 3, for half of the participants, the enhanced entrant was presented first followed by the distinctive one; for the other half, the order was reversed. These two factors (new feature and presentation order) had no impact on the data patterns, so I collapsed the cells in the analysis. 98 college students were recruited in the study for extra credit. The stimuli and procedure were similar to those in Study 1.

4.3.2 Measurement

Dependent Variables. The dependent variables were preference judgment, thought justification, and consumer perceptions (perceived differentiation, comparison difficulty, and performance risk). As in Study 1, a constant sum scale was used to measure preference judgment. The measures of perceived differentiation (Cronbach $\alpha > .92$), comparison difficulty ($\alpha > .70$), and performance risk ($\alpha > .93$) were same as before and possessed satisfactory reliability.

For *thought justification*, one naive rater classified thought justifications into three mutually exclusively categories: (1) use of enhanced features, (2) use of distinctive features, and

(3) other statements. I randomly coded one-third of the responses, and there was 98% agreement between raters. Disagreements were resolved by discussion. These data then are used to test H6.

Manipulation Check. Similar to Study 1, three manipulation checks were included: *product familiarity, feature newness, and feature importance*. The manipulation of product familiarity was significant: subjects were more familiar with CD players (mean = 6.76) than with language translators (mean = 2.81; $F(1, 96) = 126.141, p < .001$). The manipulation of feature newness was also significant. A feature, whether the digital sound control or studio signal system, was perceived as more novel when positioned as a unique feature (mean = 6.06) than when positioned as an enhanced feature (mean = 5.11; $t(97) = 3.678, p < .001$). Finally, digital sound control (mean = 6.58) and studio signal system (6.36) were perceived as equally important ($t(97) = 1.146, p = .255$).

4.3.4 Results

As in Study 1, I first examined preference judgments as a function of order of entry. Then the tests of perceptions (H1) and judgments (H5 and H7) are reported, followed by behavioral mechanisms (H4) and thought justifications (H6).

To test the order-of-entry effects, a repeated-measures ANOVA was run and revealed a significant difference in preference judgments of these four brands ($F(3, 291) = 8.983, p < .001$). Post Hoc analyses showed that the pioneer received more points ($m = 24.19$) than the second entrant ($m = 19.64, F(1, 97) = 7.436, p < .01$), indicating the successful manipulation of pioneering effects. Further, the distinctive entrant ($m = 29.78$) was perceived more favorably than both the pioneer ($F(1, 97) = 6.76, p < .01$) and the second entrant ($F(1,97) = 22.66, p < .001$). The enhanced entrant ($m = 26.44$) was more favorable than the second entrant ($F(1,97) = 12.45, p < .001$) but not significantly better than the pioneer ($F(1,97) = 1.362, p > .10$). Finally,

the distinctive entrant was allocated more points than the enhanced entrant ($F(1,97) = 2.31, p = .066$, marginally significant), suggesting that the distinctive entrant may benefit from the comparison with the enhanced entrant. The means of preference judgments are presented in Table 4-9.

Table 4-9. Means of Preference Judgments

	Pioneer (Brand A)	Second Entrant (Brand B)	Enhanced Entrant (Brand C)	Distinctive Entrant (Brand C')
Overall (n = 98)	24.194	19.643	26.439	29.776
Familiar product (n = 50)	22.800	19.320	25.380	32.500
Unfamiliar product (n = 48)	25.646	19.979	27.542	26.938

Perceptions and Preference Judgments

Paired t-tests were used to test H1 and the results are presented in Table 4-10. Consistent with our predictions, a distinctive strategy (compared to an enhancing strategy) leads to a greater perception of differentiation (5.84 vs. 4.72, $p < .001$), comparison difficulty (4.36 vs. 4.01, $p < .05$), and performance risk (4.17 vs. 3.87, $p = .03$), supporting H1.

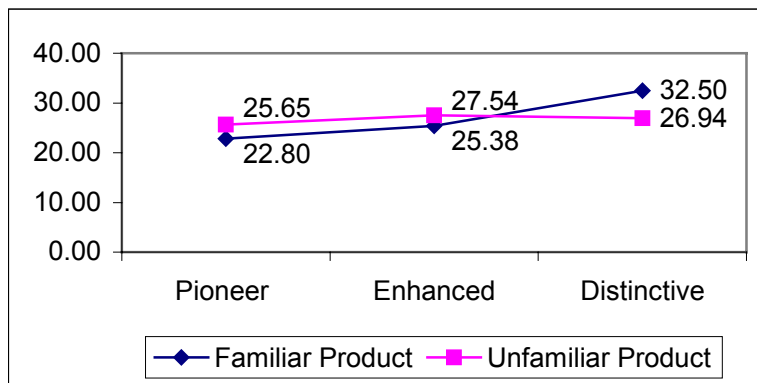
Table 4-10. Perceptions of Distinctive and Enhanced Late Entrants (H1)

Mean and S.D.	Enhanced late entrant (n = 98)	Distinctive late entrant (n = 98)	t (97)	p value
Perceived Differentiation	4.722 (1.773)	5.835 (1.762)	-4.522	0.000
Comparison Difficulty	4.007 (1.315)	4.357 (1.386)	-2.238	0.014
Performance Risk	3.874 (1.423)	4.170 (1.506)	-1.965	0.026

H5 compares the effects of a distinctive strategy vs. an enhancing strategy. A 2 (strategy: enhancing, distinctive; within subject) \times 2 (product: familiar and unfamiliar; between subject) mixed ANOVA performed on preference judgments was run to test H5. The results indicated a significant main effect of strategy ($F(1,96) = 2.253, p < .10$, marginally significant), suggesting

that overall the distinctive strategy ($m = 29.78$) is slightly more effective than the enhancing strategy ($m = 26.44$). The interaction effect of strategy \times product is also significant ($F(1, 96) = 3.17, p < .05$). A follow-up comparison showed that a distinctive late entrant ($m = 32.50$) is judged more favorably than an enhanced entrant ($m = 25.38, p < .01$) in the familiar product class, supporting H5a. However, in an unfamiliar product class, an enhanced entrant ($m = 27.54$) was not perceived significantly more favorable than a distinctive one ($m = 26.94, p > .10$). Thus, H5b is not supported (see Figure 4-5).

Figure 4-5. Preference Judgments (H5 and H7, Study 2)



To test H7, a 3 (order-of-entry: pioneer, enhanced entrant, distinctive entrant; within-subject) \times 2 (product: familiar and unfamiliar; between subject) mixed ANOVA was run the the results indicate a significant interaction effect of order of entry \times product ($F(2, 192) = 2.531, p = .041$, see Figure 4-5). A follow-up test showed that the enhanced entrant was not significantly more favorable than the pioneer in either the unfamiliar product case ($M = 27.54$ vs. $25.65, p > .10$) or the familiar product case ($M = 25.38$ vs. $22.80, p > .10$), and the former effect is similar to the latter ($F(1, 96) = .031, p > .10$). Thus, H7a is not supported. Further, the distinctive entrant received more points than the pioneer in the familiar product case ($M = 32.50$ vs. $22.80, p$

< .01) but not in the unfamiliar product case ($M = 26.94$ vs. 25.65 , $p > .10$), and the former is stronger than the latter effect ($F(1, 96) = 3.951$, $p < .05$), supporting H7b.

Behavioral Mechanisms and Thought Justifications

H4 deals with the effects of behavioral mechanisms on preference judgment. Regression analyses were run to test H4 (see Table 4-11). Table 4-11 shows that in familiar product classes, perceived differentiation is strongly associated with the preference judgment of both the enhanced ($\beta = .397$, $p < .01$) and distinctive late entrant ($\beta = .427$, $p = .001$), and performance risk negatively impacts the evaluation of the distinctive entrant ($\beta = -.306$, $p < .05$). In the unfamiliar product case, the effects of perceived differentiation are only marginally significant ($p < .10$), while the effects of performance risk are more salient ($\beta = -.279$, $p < .05$; $\beta = -.347$, $p < .01$). As in Study 1, comparison difficulty was found to have no significant impact in either case.⁶ Taken together, these results provide strong support for predications regarding perceived differentiation and performance risk, but not for comparison difficulty.

Table 4-11. Standard Coefficient Estimation (H4)

Independent Variables	a. Familiar Product		b. Unfamiliar Product	
	Enhanced Entrant (n = 50)	Distinctive Entrant (n = 50)	Enhanced Entrant (n = 48)	Distinctive Entrant (n = 48)
Perceived Differentiation	.397***	.427***	.206*	.179*
Comparison Difficulty	-.148	-.032	-.021	.074
Performance Risk	-.091	-.306**	-.279**	-.347***
Feature Importance	-.046	-.070	-.029	.280**
R-Square	.198	.311	.158	.279

Note: *** $p < .01$, ** $p < .05$, * $p < .10$ (one-tailed)

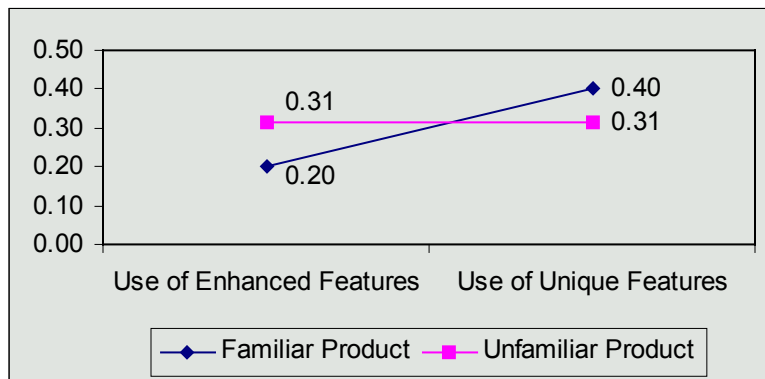
⁶ To test whether the insignificance of comparison difficulty is due to the presence of performance risk, four more regression models (without performance risk) were run and comparison difficulty was found to be nonsignificant in all the models.

H6 deals with the use of enhanced or unique features to justify decisions (see Table 4-12). Paired t-tests were run to test H6.⁷ Consistent with H6a, the results show that preference judgments are justified more by unique features than by enhanced features in a familiar product class ($m = .400$ vs. $.200$, $t(49) = 2.021$, $p < .05$). However, in an unfamiliar product class, enhanced and unique features are listed as justifications to the same extent ($m = .313$ vs. $.313$, $t(47) = .000$, $p > .10$). Thus, H6b is not supported (see Figure 4-6).

Table 4-12. Thought Justification (H6)

	Use of enhanced features	Used of unique features
Overall (n = 98)	0.255	0.357
H6a: Familiar product (n = 50)	0.200	0.400
H6b: Unfamiliar product (n = 48)	0.313	0.313

Figure 4-6. Thought Justification (H6, Study 2)



⁷ Because thought justification is 0/1 variable, a Z-test was further run to test H6. The results show that unique features are used more than enhanced features in the familiar case ($Z = 2.236$, $p < .05$), but not in the unfamiliar product case ($Z = .00$, $p > .10$).

4.3.5 Discussion

The results of Study 2 provide further support for the proposed model, especially the effects of behavioral mechanisms (H4). That is, discrepancy effects (perceived differentiation) is the key factor that determines entry strategy's efficacy in a familiar product class; while in an unfamiliar product class, ambiguity effects (perceived performance risk) is the leading factor. Similar to Study 1, comparison difficulty was found to have no effects on preference judgments.

Interestingly, the findings show that when an enhanced late mover enters the market together with a distinctive entrant, the distinctive entrant tends to receive more positive evaluation. Compared to the enhanced one, it is perceived more favorable in the familiar case (H5a) and similarly desirable in the unfamiliar case (H5b). It appears that the comparison makes the unique features more salient and thus benefits the distinctive entrant. The tests of thought justifications (H6) add more evidence to this reasoning.

In Study 1, both enhanced and distinctive entrants are perceived more favorable than the pioneer in the unfamiliar product case (H7b). However, in Study 2, neither the enhanced nor distinctive entrants outperform the pioneer in the unfamiliar product class (H7b). It seems that if consumers are less familiar with the product, and the task is complex (e.g., having both an enhanced and distinctive entrants), they may just stick to the pioneer to avoid uncertainty, even if the late entrants are objectively superior. However, we must be cautioned about this interpretation because comparison difficulty has no significant effects on preference judgments.

The insignificance of comparison difficulty is a little surprising. The additional analysis of H4 rules out the explanation that the insignificance of comparison difficulty is because of the presence of performance risk, thus we might infer that the reason is the lack of variance of comparison difficulty in the experiment design. To test this possibility, comparison difficulty in

Study 2 was compared to that in Study 1 (see Table 4-13). Table 4-13 shows that the mean of comparison difficulty in Study 2 is significant higher than that in Study 1 for both the enhanced entrant ($t = 2.95$, $p < .01$) and distinctive entrant ($t = 3.03$, $p < .01$), signifying the task in Study 2 to be more complex than that in Study 1. Further, F-tests indicate that the variances of the measure in Study 2 are equal to those in Study 1 ($F = .140$ and $.101$, $p > .10$), suggesting that lack of variance may be the reason for the insignificance of comparison difficulty.

Table 4-13. Comparison Difficulty in Studies 1 and 2

Mean and S.D.	Study 1 (n = 80)	Study 2 (n = 98)	t (97)	p value
Enhanced late entrant	3.417 (1.340)	4.007 (1.315)	2.953	.004
Distinctive late entrant	3.737 (1.322)	4.357 (1.386)	3.029	.003

4.4 Summary

In sum, Studies 1 and 2 provide strong support for the proposed model and most of the hypotheses. However, one potential issue is the confounding effect of the product-familiarity manipulation, i.e., the familiar and unfamiliar product classes may differ in aspects other than familiarity. To assess this possibility, A MANOVA was run to test whether these two product classes result in different perceptions of differentiation, comparison difficulty, and performance risk and the results indicate that none of the mean difference are significant (see Table 4-14). Since perceived differentiation and performance risk are key factors that impact the efficacy of a late entry strategy, the issue may not be a concern in our studies.

Table 4-14. Comparison of Perceptions

Variables	Perceived Differentiation	Comparison Difficulty	Performance Risk
Study 1			
Familiar Product	5.250	3.725	3.679
Unfamiliar Product	5.333	3.429	4.029
p-value of (Δ Mean)	0.775	0.162	0.107
Study 2 – enhanced entrant			
Familiar Product	4.974	4.033	3.887
Unfamiliar Product	4.458	3.979	3.861
p-value of (Δ Mean)	0.151	0.840	0.930
Study 2 – distinctive entrant			
Familiar Product	5.753	4.313	4.093
Unfamiliar Product	5.920	4.403	4.250
p-value of (Δ Mean)	0.642	0.751	0.609

Note:

1. For Study 1, a 2×2 MANOVA was first run and the results indicated that the interaction effect of strategy \times product is not significant (MANOVA Wilks' Lambda = .973, $F(3, 154) = 1.449$, $p = .231$).
2. For Study 2, three 2×2 mixed ANOVAs were first run to test the interaction effects of strategy \times product on perceived differentiation, comparison difficulty, and performance risk respectively. The results show that none of the interaction effects are significant ($p = .167, .649$, and $.548$ respectively).

However, one might still argue that these two product classes differ in other extraneous variables that may affect preference judgments. To assess this concern, Study 3 is developed in which only one product class is used and product knowledge is proposed as the key moderator. The next chapter will discuss the details of Study 3.

CHAPTER 5 STUDY 3

Study 3 intends to test the moderating role of product knowledge in the order-of-entry context. In the literature, three types of product knowledge have been identified: objective knowledge, subjective knowledge, and familiarity. *Objective knowledge* refers to accurate product category knowledge stored in long-term memory. *Subjective knowledge* refers to the self-assessed knowledge which reflects how knowledgeable one believe herself/himself to be about a product category. *Familiarity* refers to the level of accumulated product-related experiences (Alba and Hutchinson 1987; Park, Mothersbaugh, and Feick 1994; Sujan 1985).

Each of these three constructs, though correlated, can influence information processing in different ways. For example, Park, Mothersbaugh, and Feick (1994) find that product-related experience (familiarity) has a greater influence on subjective knowledge than on objective knowledge. Objective knowledge, compared to subjective knowledge, is more strongly related to “product class information” stored in memory. Subjective knowledge and objective knowledge also lead to different information processing activities. Subjective knowledge tends to increase one’s reliance on previously stored information, while objective knowledge facilitates new information acquisition and deliberation (Rudell 1979). Further, Brucks (1985, p. 12) found that in an information search activity, “only objective knowledge was significantly related to the number of attributes examined, and only subjective knowledge was significantly related to the tendency to request dealer opinions rather than attribute information”. Therefore, the choice of knowledge type for a particular research is subject to the research requirements of the experimental tasks (Alba and Hutchinson 1987; Park, Mothersbaugh, and Feick 1994).

New brand learning involves a categorization process. As discussed earlier, a central factor that influences the categorization process is the consumer’s existing product category

schema, which refers to a cognitive structure that contains knowledge about the attributes of a category and the links among these attributes (Bettman, Johnson, and Payne 1991). Because objective knowledge represents one's accurate understanding of product attributes, attribute importance, and relations among attributes, it is more relevant to a person's *product category schema* (Park, Mothersbaugh, and Feick 1994). In the previous conceptual development (Chapter 3), although the term of product category familiarity is used, the underlying logic is that in a familiar product class, consumers usually possess a well-defined product category schema, while in an unfamiliar or particularly novel product class, consumers only have a weak category schema. Since objective knowledge more accurately represents a product category schema, we use it in this study. This is also consistent with other category-related studies (e.g., Sujjan 1985; Moreau, Lehmann, and Markman 2001).

Knowledge determines one's ability to interpret incoming information (MacInnis and Jaworski 1989). Sometimes only experts (those who have a well-developed knowledge base) can interpret incoming messages and generate certain responses (Wright 1975). This suggests that novices (less knowledgeable consumers) may find it difficult to generate attribute-oriented thoughts. Given that novices have at least a rudimentary knowledge structure, they may prefer to make judgments and choices using category-based affective processes (Sujan 1985). Therefore, when a late entrant comes with a new feature, novices may lack the ability to evaluate the new feature performance and thus cannot elaborate on it. Hence, they may ignore the new feature and pay more attention to common features. In contrast, experts are able to process the new feature and generate more feature-related thoughts (Sujan 1985). They have the ability to appreciate the uniqueness of a distinctive late entrant. This suggests that an enhancing strategy may be more effective for novices (similar to the unfamiliar product case), while a distinctive strategy works

better for experts (similar to the familiar product case). Therefore, we could rephrase former hypotheses into follows:

H5a': For experts, a distinctive late entrant will be judged more favorably than an enhanced late entrant.

H5b': For novices, a distinctive late entrant will be judged less favorably than an enhanced late entrant.

H4a': For experts, preference judgments will be affected more by perceived differentiation and less by perceived comparison difficulty and performance risk.

H4b': For novices, preference judgments will be affected less by perceived differentiation and more by perceived comparison difficulty and performance risk.

H7a': The preference for the pioneer will be attenuated in the presence of an enhanced late entrant, especially for novices (vs. experts).

H7b': The preference for the pioneer will be attenuated in the presence of an enhanced late entrant, especially for experts (vs. novices).

5.1 Method

Point-and-shoot cameras were selected as product stimulus because of its relevance and relative unfamiliarity to the subjects (Moreau, Lehmann, and Markman 2001; Sujan 1985). By doing so, we can also assess the applicability of the proposed model in another product category.

In Studies 1 and 2, the pioneering effect was achieved through explicit statement (Carpenter and Nakamoto 1989) and more exposures (Kardes and Kalyanaram 1992; Zhang and Markman 1998). However, pioneering advantage also arises from brand loyalty, switching costs, reputation effects, etc. (Kerin, Varadarajan, and Peterson 1992). To capture these effects, Study 3 used a new cover story:

Suppose you bought a point-and-shoot film camera one year ago. The camera you bought (**Brand A**) was the pioneering brand in the market and has been successful. You have taken many rolls of pictures with it and are happy with most of them. Unfortunately, it was lost during a vacation. Now you have to buy a new camera.

In previous experiments, consistent with Schnaars's (1994, p. 212) observation that 39.3% late movers beat the pioneer with a imitate-and-improve strategy, both the enhanced and distinctive late entrants were designed to dominate the pioneer. An interesting issue then is whether enhanced/distinctive entrant can overtake the pioneer even if they are not dominating the pioneer. For this reason, a new between-subject factor, *domination*, is added to test this issue.

5.1.1 Pretest

A pretest was conducted to develop a specific attribute combination for a point-and-shoot camera. Based on *Consumer Reports* (2001), ten attributes were included, with each attribute having two feature levels (one level is superior to the other, see Appendix 2). 29 students participated in the pretest and were asked to indicate the attribute importance for a camera with a superior feature level on a nine-point scale (1 = "not at all important" and "9 = very important"). The results of importance ratings are presented in Appendix 3. To avoid "a ceiling effect" as well as "a floor effect", two moderately important feature levels (i.e., wide-area autofocus system and digital exposure system) were selected as the focal attributes for Study 3 (Sujan and Bettman 1989, p. 458). In addition, these two superior features were rated as equally important (wide-area autofocus system: 6.75; digital exposure system: 6.68; $t = .15$, $p = .882$). Another objective of the pretest was to refine the measure of objective knowledge. Based on the results, several changes were made to enhance the clarity.

5.1.2 Design

The two primary independent variables are *entry strategy* (enhancing vs. distinctive strategy) and *product knowledge* (novice vs. expert). Both factors are run between subjects. *New feature* is a between subject factor to control to potential confounding effects of attribute importance. *Domination* is a new between-subject factor. For example, for half of the participants, both enhanced and distinctive entrants dominate the pioneer; for the other half, enhanced/distinctive entrants are still relatively superior to but not strictly dominating the pioneer (*quasi-dominating*, see Appendix 2). This constitutes a 2 (entry strategy) x 2 (product knowledge) x 2 (new feature) x 2 (domination) factorial design. 168 college students participated in the study for extra credit.

5.1.3 Stimuli and Procedure

Point-and-shoot cameras are the product stimulus. All the attributes and attribute levels are adapted from *Consumer Reports* (2001), but a coined name is given to the exposure system. The attribute descriptions of each brand are presented in Appendix 2.

The procedure was similar to Study 1. The major differences were that (1) a new cover story was provided; (2) two sections were used instead of three. In Section 2, both the second and the enhanced (or distinctive) entrant were presented; and (3) after participants responded to the dependent scale and manipulation check measures, they turned to a camera knowledge test.

5.1.4 Measurement

Product Knowledge. The measure of camera knowledge was adapted from Moreau, Lehmann, and Markman (2001). Based on Barnes (1997) and *Consumer Reports* (2001), some changes were made and the measure was further refined through the pretest. The final measurement was a 14-item true/false test (see Appendix 4). Subjects' overall test score

indicated their camera knowledge. To make the results more intuitively understandable and also comparable to the results of Studies 1 and 2, camera knowledge was dichotomized as novices and experts using median splits. On average, novices scored 5.644 correct answers ($n = 87$, $s.d. = 1.540$), which is well below what experts scored ($m = 9.617$, $s.d. = 1.488$; $n = 81$; $t(166) = 16.99$, $p < .001$).

Dependent Variables. The dependent variables were preference judgment and consumer perceptions (perceived differentiation, comparison difficulty, and perceived performance risk). Similar to Studies 1 and 2, a constant sum scale was used to measure preference judgment. The perception measures were the same as before and possessed satisfactory reliability (Cronbach α : differentiation = .882; comparison difficulty = .843; performance risk = .894).

5.2 Results

Manipulation Check. Two manipulation checks were included: *feature newness*, and *feature importance*. The manipulation of feature newness was significant. A feature, whether wide-area focus or digital exposure system, was perceived as more novel when positioned as a unique feature (mean = 6.26) than when positioned as an enhanced feature (mean = 5.70; $F(1,166) = 3.713$, $p < .05$). Wide-area focus system (mean = 6.88) and digital exposure system ($m = 6.86$) were perceived as equally important ($t = .131$, $p = .896$).

Hypothesis Testing. As in previous studies, I first tested preference judgments as a function of order-of-entry, then H1, H5', and H7', and then H4'. Because the manipulation of new feature had no impact on the results, I do not discuss it further. The manipulation of dominating vs. non-dominating did not significantly affect the results either (see Table 5-1). Table 5-1 shows that when enhanced/distinctive entrants do not dominate the pioneer, they

receive fewer points and the pioneer gains more. However, the differences are not significant ($F(2,332) = .674, p = .511$). So I collapsed these cells in further analyses.

Table 5-1 Means of Preference Judgments

	Pioneer (Brand A)	Second Entrant (Brand B)	Last Entrant (Brand C/C')
Overall (n = 168)	33.875	22.655	43.589
Expert (n = 81)	32.642	22.543	44.815
Enhancing strategy (n = 40)	32.900	24.150	42.950
Distinctive strategy (n = 41)	32.390	20.976	46.634
Novice (n = 87)	35.023	22.759	42.448
Enhancing strategy (n = 44)	32.545	22.841	44.841
Distinctive strategy (n = 43)	37.558	22.674	40.000
Enhancing strategy (n = 84)	32.714	23.464	43.940
Distinctive strategy (n = 84)	35.036	21.845	43.238
Dominating case (n = 84)	33.643	21.881	44.595
Non-dominating case (n = 84)	34.107	23.429	42.583

A repeated-measures ANOVA was run to test the order-of-entry effects and the results (see Table 5-1) revealed a significant difference in preference judgments of these three brands ($F(2, 334) = 89.01, p < .001$). Post Hoc analyses showed that more points were allocated to Brand A ($m = 33.88$) than to Brand B ($m = 22.66, F(1, 167) = 72.83, p < .001$), suggesting the successful manipulation of pioneering effects. Further, the last entrant (enhanced/distinctive entrant, $m = 43.59$) was judged more favorably than both the pioneer (Brand A, $m = 33.88, F(1, 167) = 28.92, p < .001$) and the second entrant (Brand B, $m = 22.66, F(1,167) = 182.08, p < .001$).

A MANOVA was used to test H1 and the results indicate the significant difference between consumer's perceptions of these two strategies. Subsequent t-tests (see Table 5-2) show that a distinctive strategy, compared to an enhancing strategy, leads to a greater perception of differentiation (5.71 vs. 5.06, $p < .01$) and performance risk (4.12 vs. 3.73, $p < .05$), but not more comparison difficulty (4.30 vs. 4.20, $p > .10$), showing mixed support for H1. To test whether

feature importance affects the results, another MANCOVA with feature importance as covariate was also run and feature importance was found to be nonsignificant.

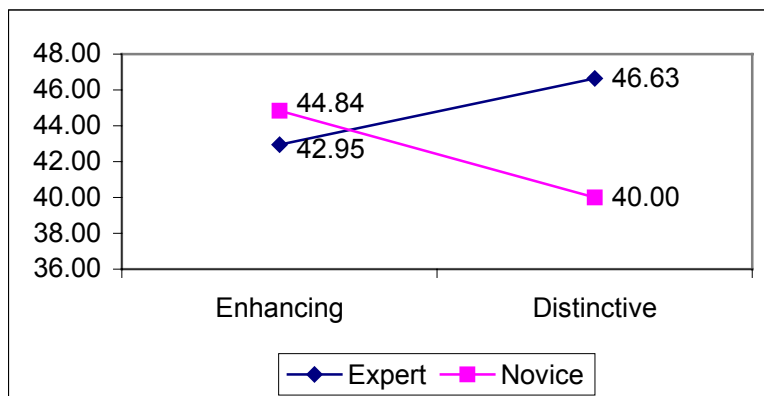
Table 5-2 Perceptions of Distinctive and Enhanced Late Entrants (H1)

Variables	Enhanced late entrant (n = 84)	Distinctive late entrant (n = 84)	t(166)	p value
Perceived Differentiation	5.060 (1.490)	5.714 (1.588)	2.756	.004
Comparison Difficulty	4.198 (1.704)	4.302 (1.704)	.392	.400
Performance Risk	3.734 (1.441)	4.119 (1.275)	1.833	.035

Note: MANOVA Wilks' Lambda = .897, F (3, 164) = 6.301, p < .001

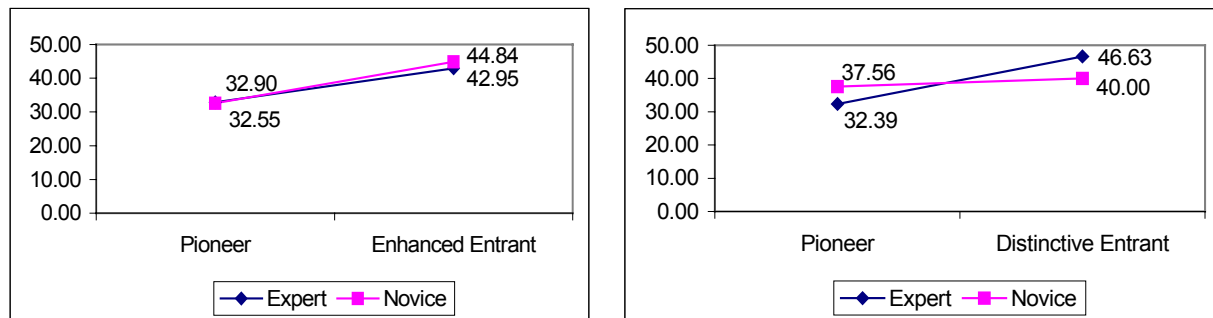
H5' deals with consumer preference judgments of distinctive/enhanced entrants. A 2 (product knowledge) × 2 (strategy) ANOVA was used to test H5'. The results reveal that the main effects of strategy and product category are insignificant, but the interaction effect of strategy × product knowledge is significant (F(1, 164) = 4.323, p < .05). A follow-up comparison showed that experts perceive the distinctive entrant more favorably than the enhancing one (distinctive = 46.634, enhancing = 42.950, t = 1.477, p < .10, marginally significant), while for novices, an enhanced one is allocated more points (distinctive = 40.000, enhancing = 44.841, t = 1.512, p < .10, marginally significant), supporting H5' (see Figure 5-1).

Figure 5-1 Preference Judgments: Enhancing Strategy vs. Distinctive Strategy (H5', Study 3)



H7' deals with the effects of late entry strategies in overcoming pioneering advantage. Consistent with H7', a 2 (order of entry: pioneer, last entrant; within-subject) × 2 (strategy: enhancing, distinctive; between subject) × 2 (product knowledge: expert, novice; between subject) mixed ANOVA performed on preference judgments yielded a significant interaction effect of order of entry × strategy × knowledge ($F(1, 164) = 3.85, p = .05$). A follow-up test showed that the enhanced entrant was allocated more points than the pioneer for both novices ($M = 44.84$ vs. $32.55, p < .01$) and experts ($M = 42.95$ vs. $32.90, p < .01$), supporting H7a'. However, the former effect is not significantly stronger than the latter effect ($F(1, 82) = .18, p = .34$). Therefore, H7a' get mixed support. Further, the distinctive entrant tended to be preferred over the pioneer for experts ($M = 46.63$ vs. $32.39, p < .001$), but not for novices ($M = 40.00$ vs. $37.56, p > .10$). A further comparison shows that the former effect is stronger than the latter effect ($F(1,82) = 6.107, p < .01$), supporting H7b' (see Figure 5-2).

Figure 5-2 Preference Judgments: The Effects of Late Entry Strategy (H7', Study 3)



H4' examines the effects of behavioral mechanisms (perceived differentiation, comparison difficulty, and performance risk) upon preference judgments. Regression analysis was run to test H4' and the results are presented in Table 5-3, Model 3 (entry strategy is coded as a dummy variable: 0 = enhancing strategy, 1 = distinctive strategy; feature importance is the

control variable). Consistent with the prediction in H4a', Table 5-3a, Model 3 shows that for experts, preference judgment is positively linked to perceived differentiation ($\beta = .255, p < .05$), negatively associated with performance risk ($\beta = -.163, p < .10$, marginally significant), but not related to comparison difficulty ($\beta = -.145, p > .10$). Table 5-3b, Model 3 shows that for novices, preference judgment is influenced more by performance risk ($\beta = -.254, P < .01$) and less by perceived differentiation ($\beta = .203, p < .05$), but is not affected by comparison difficulty ($\beta = -.032, p > .10$), leading partial support to H4b'.

Table 5-3. Standard Coefficient Estimation (H4' & Mediation Test)

Independent Variables	a. Experts (n = 81)					b. Novices (n = 87)				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Strategy	.183**	—	.180**	.208**	.156*	-.140*	—	-.164*	-.096	-.214**
Perceived Differentiation	—	.277***	.255**	—	.269***	—	.148*	.203**	—	.259***
Comparison Difficulty	—	-.159*	-.145	-.059	-.190**	—	-.032	-.032	-.029	-.097
Performance Risk	—	-.136	-.163*	-.184*	—	—	-.286***	-.254***	-.298***	—
Feature Importance	.204**	.205**	.224**	.221**	.211**	.207**	.202**	.196**	.172**	.216**
R-Square	.068	.137	.168	.110	.144	.069	.172	.195	.160	.140

Note: *** $p < .01$, ** $p < .05$, * $p < .10$

A number of regression analyses were run to test the mediating role of behavioral mechanisms (see Table 5-3). The results show that for experts, entry strategy significantly impacts preference judgment (Table 5-3a, Model 1) and its effect become only marginally significant (Model 5) when perceived differentiation entered the model, signifying that perceived differentiation acts as the key mediator. Further, Table 5-3b shows that for novices, performance risk perception is the key mediator (Model 4). Taken together, these results provide strong support for the proposed perspective.

Post Analysis. In the hypotheses testing, knowledge was dichotomized as novice and expert to make the results more intuitively understandable and also comparable to the results of Studies 1 and 2. Additional regression analyses were also run to assess the moderating effects of knowledge as a continuous variable (see Table 5-4) and the results are largely consistent with those reported in Table 5-3. For example, the main effects of perceived differentiation and performance risk are significant, as well as the interaction effects of strategy and knowledge. The interaction effects of knowledge and perceptions parallel the result patterns presented in Table 5-3a and Table 5-3b.

Table 5-4. Standard Coefficient Estimation (Knowledge Test)

Independent Variables	Preference Judgment				
	(1)	(2)	(3)	(4)	(5)
Strategy	-.035	.008	-.061	-.032	-.061
Knowledge (KN)	-.039	-.082	-.044	-.030	-.028
Perceived Differentiation (PD)	.195***	—	.241***	.183***	.224***
Comparison Difficulty (CD)	-.071	-.036	-.133**	—	—
Performance Risk (PR)	-.191***	-.220***	—	-.210***	—
KN × Strategy	.189**	.183**	.202**	.185**	.197**
KN × PD	.051	—	.083	.058	.100*
KN × CD	.004	.040	.004	—	—
KN × PR	.105*	.143**	—	.111*	—
Feature Importance	.200***	.192**	.194**	.206***	.205***
R-Square	.187	.154	.144	.183	.128

Note: *** p < .01, ** p < .05, * p < .10

Interestingly, Table 5-4, Model 3 shows that comparison difficulty has a significant effect on preference judgment ($\beta = -.133$, $p < .05$). To further assess the role of comparison difficulty, I compared its means and standard deviations among 3 studies (see Table 5-5).

An ANOVA shows that the means of comparison difficulty are significant different from each other in these three studies for both the enhanced entrant ($F(2,259) = 6.407$, $p < .01$) and

distinctive entrant ($F(2,259) = 4.523, p < .05$). Planned contrasts further indicate that comparison difficulty in Study 3 is similar to that in Study 2 and significant higher than that in Study 1. Further, F-tests show that the variance of the measure of the enhanced entrant in Study 3 is larger than those in Studies 1 and 2 ($F = 4.418$ and $6.479, p < .05$). The variance of the measure of the distinctive entrant in Study 3 is slightly larger than that in Study 1 ($F = 2.902, p < .10$) and similar to that in Study 2 ($F = 2.233, p > .10$). These results, taken together, suggest that the lack of variance may be the reason for the insignificance of comparison difficulty.

Table 5-5. Comparison Difficulty in Studies 1, 2, and 3

Mean and S.D.	Study 1 (n = 80)	Study 2 (n = 98)	Study 3 (n = 84)
Enhanced late entrant	3.417 (1.340)	4.007 (1.315)	4.198 (1.704)
Distinctive late entrant	3.737 (1.322)	4.357 (1.386)	4.302 (1.704)

To gain more insights of the underlying process, a MANOVA was run to test the effects of expertise on perceptions (see Table 5-6).⁸ Table 5-6 shows that compared to novices, experts perceive the last entrant (either an enhanced or distinctive one) as less differentiated ($p < .05$), less difficult-to-compare ($p < .10$), but similarly performance-risky ($p > .10$). Because experts know more about the product category, learning a new brand is easier but arousing their attention is harder. In contrast, novices may find it difficult to process the information provided by a late entrant, but they tend to perceive the late entrant as novel.

Table 5-6 The Effects of Expertise on Perceptions

Variables	Novice (n = 87)	Expert (n = 81)	F (1,166)	p value
Perceived Differentiation	5.667 (1.628)	5.086 (1.456)	5.898	.016
Comparison Difficulty	4.462 (1.840)	4.023 (1.513)	2.829	.094
Performance Risk	3.887 (1.356)	3.969 (1.393)	.150	.699

Note: MANOVA Wilks' Lambda = .953, $F(3, 164) = 2.703, p < .05$

⁸ A 2×2 MANOVA was first run and the results indicated that the interaction effect of strategy \times expertise is not significant (MANOVA Wilks' Lambda = .985, $F(3, 162) = .847, p = .470$).

5.3 Discussion

Study 3 has several objectives. First, it used one product category to remove the potential confounding effects of product category differences in Studies 1 and 2. Second, it tested the moderating role of product knowledge to provide additional support for the mechanisms underlying the learning process of late entrants. Third, it enabled us to replicate the test in a new product category. Fourth, a new cover story was used to capture the pioneering effects more adequately.

Overall, the results provide additional support for the idea that a distinctive strategy works better if consumers are familiar with the product and an enhancing strategy is more effective when consumers only have limited product knowledge (H5'). More importantly, experts tend to weight differentiation more heavily than performance risk, while novices are more likely to be influenced by perceived risk (H4').

This study also reveals that although an enhancing strategy is not as effective as a distinctive strategy for experts, it overtakes pioneering advantages for both novices and experts (H7a'). A distinctive strategy, however, does not enable a late entrant to outsell the pioneer for novices (H7b'). Alternatively, experts perceive both enhanced and distinctive late entrants as more favorable than the pioneer, while novices only believe an enhanced entrant to be significantly better than the pioneer. This is consistent with Kerin, Varadarajan, and Peterson's (1992) assertion that the pioneering advantage is more enduring for less experienced buyers.

In sum, this study, together with Studies 1 and 2, highlight the importance of product familiarity in determining the effectiveness of a late entry strategy. Hence, these three studies significantly contribute to our understanding of how to achieve late-mover advantage through strategic choice and provide some insights to reconcile the controversy in existing literature.

CHAPTER 6 DISCUSSION

Gain mastery by striking only after the enemy has struck

(Sun Tzu, *The Art of War*)

Given the powerful advantage of being a pioneer in a market (Lieberman and Montgomery 1998), eating away the market share of the early entrant and finally overtaking the pioneer is a tough task for late entrants. To compete successfully with the pioneer, it is critical for late movers to understand and identify how consumers perceive and learn about their offerings, what are the key mechanisms that may help outperform a pioneer, and what are the contingent conditions for an appropriate entry strategy. Only with a substantial understanding of the process underlying how new brands are learned, can a company achieve a late-mover advantage.

To shed some light on achieving late-mover advantage, this research studies the new brand learning process, the key behavioral mechanisms, and further, the efficacy of two basic entry strategies. The findings generally support the hypotheses and a summary of the findings is presented in Table 6-1.

New brand learning process. Previous research on order-of-entry effects provides different views on this issue. For example, the information learning and integration perspective (Kardes and Kalyanaram 1992) suggests that consumers naturally pay more attention to novel information. If a brand possesses too much redundant information, consumers may just stop processing the information. This will benefit the pioneer because all its information is novel and interesting. In contrast, a late mover suffers since it possesses many shared features and its unique feature may not receive enough attention. This perspective, on one hand, highlights the importance of novel information for the pioneer. On the other hand, however, it also claims that the novel information of a late mover is unlikely to arouse much attention.

Table 6-1 Summary of Findings

Hypotheses (Supported or not)		Study 1	Study 2	Study 3
H1	Compared to an enhanced late entrant, a distinctive late entrant results in:			
	a. greater perceptions of differentiation	yes	yes	yes
	b. greater perceptions of comparison difficulty	yes	yes	no
	c. greater perceptions of performance risk	yes	yes	yes
H2a	In familiar product classes, unique features of a distinctive late entrant are more likely to be recalled than enhanced features of an enhanced entrant	yes	—	—
H2b	In unfamiliar product classes, unique features of a distinctive late entrant are less likely to be recalled than enhanced features of an enhanced entrant	yes	—	—
H3a	In familiar product classes, shared features are less likely to be recalled for a distinctive late entrant than for an enhanced entrant	yes	—	—
H3b	In unfamiliar product classes, shared features are more likely to be recalled for a distinctive late entrant than for an enhanced entrant	no	—	—
H4a	In familiar product classes (or for experts), preference judgments will be affected by more by perceived differentiation and less by perceived comparison difficulty and performance risk	yes	yes	yes
H4b	In unfamiliar product classes (or for novices), preference judgments will be affected less by perceived differentiation and more by perceived comparison difficulty and performance risk		yes but not for comparison difficulty	
H5a	In familiar product classes (or for experts), a distinctive late entrant will be judged more favorably than an enhanced late entrant	yes	yes	yes
H5b	In unfamiliar product classes (or for novices), a distinctive late entrant will be judged less favorably than an enhanced late entrant	yes	no	yes
H6a	In familiar product classes, preference judgments will be justified more by unique features than by enhanced features	—	yes	—
H6b	In unfamiliar product classes, preference judgments will be justified more by enhanced features than by unique features	—	no	—
H7a	An enhanced late entrant may overtake the pioneering advantage			
	in unfamiliar product classes (or for novices)	yes	no	yes
	in familiar product classes (or for experts)	no	no	yes
	more effective in unfamiliar vs. familiar product classes (or novices vs. experts)	yes	no	no
H7b	A distinctive late entrant may overtake the pioneering advantage			
	in unfamiliar product classes (or for novices)	yes	no	no
	in familiar product classes (or for experts)	yes	yes	yes
	less effective in unfamiliar vs. familiar product classes (or novices vs. experts)	yes	yes	yes

The reminding-based learning perspective (Zhang and Markman 1998) suggests new brand are learned through a comparison process with the pioneer and the comparison is essentially a *similarity judgment* process, where common features receive particular attention (p. 414). Hence, an enhancing strategy can overtake pioneering advantage because the enhanced features are common features, but a distinctive strategy cannot because the unique features are not comparable. However, it is not clear why the comparison is necessarily a *similarity judgment* process. As documented in the literature, a comparison may involve both a similarity and dissimilarity judgment process (e.g., Fiske and Pavelchak 1985; Tversky 1977).

This research proposes that new brand learning is a category-based learning process, in which common features are processed in a category-based mode and unique features are evaluated in a piecemeal manner. Further, which features receive more attention depends on product category. The findings of H2 and H3 (feature recall) provide support for this proposition. In a familiar product class, unique features are recalled better than enhanced features, suggesting that unique features are the focus of the comparison. In an unfamiliar product class, enhanced features are more likely to be recalled, indicating that they receive more attention. The results of H6 (thought justification) also provide additional evidence for this reasoning. These findings are consistent with Sujan's (1985) notions that experts tend to evaluate the discrepant information piece-by-piece, while novices tend to stick with what they know to reach a judgment.

Behavioral mechanisms. This dissertation suggests that discrepancy effects (perceived differentiation) and ambiguity effects (comparison difficulty and performance risk) are the key factors that determine the efficacy of a late entry strategy. The findings of H4 (Studies 1 and 2) suggest that in familiar product classes, perceived differentiation has a strong and positive impact

on new brand evaluation, and ambiguity effects are largely insignificant or only marginally significant. This proposition received further support in Study 3 (the expert case). These results add to the mounting evidence that differentiation leads to favorable consumer preference or superior organizational performance (e.g., Carpenter, Galzer, and Nakamoto 1994; Gatignon and Robertson 1991; Meyers-Levy and Tybout 1989; Shankar, Carpenter, and Krishnamurthi 1998). In contrast, in unfamiliar product class (or for novices), performance risk is found to be the key factor and perceived differentiation becomes less salient, consistent with recent study of risk perception and incongruity effects (e.g., Campbell and Goodstein 2001). However, comparison difficulty was found to be nonsignificant in all three studies, possibly because the experiment design did not provide enough variance for this measure. The importance of perceived differentiation and performance risk is further demonstrated by the mediation test. The impacts of entry strategy upon consumer preference judgments were found to be mediated either by perceived differentiation or performance risk, depending on product familiarity.

Efficacy of Late Entry Strategies. The perceptual differences between enhancing and distinctive strategies are strongly supported. A distinctive entrant is perceived as more differentiated, more risky, and more difficult-to-compare than an enhanced entrant. The studies also indicate that product familiarity moderates the efficacy of entry strategies. We find that in a familiar product class, consumers tend to prefer an objectively superior late entrant with unique features to an entrant with enhanced features, while in an unfamiliar product class, enhanced late entrants are judged more favorably than distinctive entrants (Study 1). Similarly, a distinctive entrant is perceived as more desirable by experts while an enhanced one is more preferable to novices (Study 3). Study 2 again finds that a distinctive strategy works better in familiar product classes, however, an enhancing strategy is not significantly better than a distinctive strategy in

unfamiliar product classes. One possibility is that when enhanced and distinctive late movers are presented together, the unique features of a distinctive entrant become more salient and thus, benefit the distinctive entrant.

Overcoming Pioneering Advantage. The effects of entry strategies in overtaking pioneering advantage is quite interesting. The findings (H7) actually demonstrate the power of being a pioneer. In all the experiments, both enhanced and distinctive late entrants are objectively superior to and even dominate (or at least quasi-dominate) the pioneer. However, only in 7 out of 12 conditions does the superior late entrant outperform the pioneer (see Table 6-1). This supports Lieberman and Montgomery's (1998) notion that numerous studies have demonstrated the robustness of pioneering advantage.

More specifically, Study 1 shows that a distinctive late entrant is perceived more favorably than the pioneer in both the familiar and unfamiliar product classes, and it is more effective in a familiar product case. An enhanced late entrant beat the pioneer in an unfamiliar product class, but it does not receive a significant better evaluation than the pioneer in a familiar product case. Because an enhanced entrant only possesses common features, it will receive less attention and elaboration if consumers are quite familiar with the product (Kardes and Kalyanaram 1992; Mandler 1982). This emphasizes the importance of unique features in a familiar product class.

In Study 2, only the distinctive strategy in a familiar product class successfully overtakes the pioneering advantage. In an unfamiliar product class, neither strategy is effective. One explanation is that when enhanced/distinctive late movers enter the market together, the comparison task becomes more difficult and ambiguity arises, thus consumers stick with the

pioneer because they are unfamiliar with the product class. In other words, ambiguity effects benefit the pioneer (Muthukrishnan 1995).

Study 3 shows that both strategies are effective for experts but only the enhancing strategy works for novices, suggesting that a pioneering advantage is more durable for less experienced consumers and less effective for knowledgeable consumers (Kerin, Varadarajan, and Peterson 1992). Taken together, these results strongly support the key hypotheses: compared to each other, an enhancing strategy works better in an unfamiliar product class and a distinctive strategy is more effective in a familiar product case.

Boundary Conditions. In reality, a late mover may make previous products totally out-of-date (e.g., color TV vs. black/white TV) or create a new product category (e.g., clean tooth pill) or a subcategory (e.g., electric toothbrush) through discontinuous innovations. A discontinuous innovation either creates a new consumption pattern or substantially reshapes the category (Gatignon and Robertson 1991). In contrast, a continuous innovation only minimally affects existing consumption patterns and just adds new features or improves existing features to the current product class (e.g., manual toothbrush) (Banbury and Mitchell 1995; Gatignon and Robertson 1991; Zhang and Markman 1998). The findings of this thesis apply to late movers with continuous innovations – those who enter a new category or subcategory after the pioneer and do not create a subcategory by themselves (same as Kardes and Kalyanaram 1992; Zhang and Markman 1998). Therefore, the focus of this thesis is on a differentiation strategy (either an enhancing strategy or a distinctive strategy) but not on a subtyping strategy (please see Sujan and Bettman 1989 for a discussion on subtyping strategy). Further, with a subtyping strategy, an entrant itself becomes the pioneer of the subcategory. It would be interesting to see the efficacy of a subtyping strategy in familiar and unfamiliar product classes (or novices vs. experts), but it

is out of the scope of this research (see Moreau, Lehmann, and Markman 2001 for more discussion on this issue).

6.1 Managerial Implications

To outperform a successful or entrant pioneer, few options are available to a late mover. Industry wisdom and anecdotal cases suggest low-prices, market power, and innovative imitation are three ways for late movers to free-ride on and overtake the pioneer (e.g., Levitt 1966; Schnaars 1994). The conventional thinking seems to be that late entrants must offer something extra, but “exactly how one does so is unclear” (Carpenter and Nakamoto 1989, p. 297).

This research suggests new strategic choices for how to “offer something extra”. More specifically, in unfamiliar or novel product classes, where consumers lack experience and know little about the product category as a whole, offering enhanced features may be the key for success. Enhanced features are comparable with existing features provided by the pioneer and thus their superiority can be easily identified. On the other hand, by focusing on these common features, consumers learn more about the product category and eventually, become familiar with the category. This also implies that, during the early growth stage of a product/market life cycle, an enhancing strategy is more desirable. It not only helps a late mover be perceived as superior, but also helps develop the product market.

For established, familiar product classes, an enhancing strategy is less effective because it does not provide something novel and interesting, and thus, is unlikely to arouse great attention from consumers. At that time, offering unique features is a way to be successful. The novelty nature of unique features helps a late entrant to grab attentions from consumers and further distinguishes it from existing brands. As such, the late entrant may achieve a prominent position in consumer’s minds and gradually, be able to overtake the pioneer. This also suggests that during a late growth or mature stage of a product life cycle, to be distinctive is the key for success.

This research further suggests that, even in an established market (e.g., point-and-shoot cameras), it would be worthwhile to segment target customers into novices and experts and then develop different entry strategies for each segment. For novices, an enhancing strategy is more effective to overcome their loyalty to existing brands. For experts, a distinctive strategy works better.

Taking the PC industry as an example, IBM's successful overtaking of Apple partially illustrates the effectiveness of the enhancing strategy in the early stage of a market.⁹ For experts, IBM offered almost nothing innovative and thus was not impressive. But with improved performance, it greatly decreased most customers' uncertainty of the product and thus substantially developed the PC market. With time going on, when PC market became more mature, late entrants made a name of themselves with a more distinctive strategy. Compaq reverse-engineered IBM's BIOS with software and created portable computers, and Dell distinguished itself from other brands through direct mail delivery. These small startups were among the fastest-growing companies in American history (Schnaars 1994, pp. 142-148).

In sum, late entrants must carefully choose an appropriate strategy to develop and position their products. In an unfamiliar product class, a late mover needs to focus more on existing features and had better position its unique features as comparable in order to reduce the perceived performance risk.¹⁰ In contrast, in a familiar product class, unique features are the key

⁹ The reality, of course, is more complicated than the case described here. In practice, late entrants try to do whatever they can to compete against the pioneer. In the PC industry case, for example, IBM also benefited from other factors such as a strong market power and name brand effects (Schnaars 1994).

¹⁰ It is interesting to see that discontinuous innovations usually adopt an enhancing strategy to make them comparable to existing products or features. This is because that an enhancing strategy could decrease the perceived uncertainty and make them more easily acceptable by consumers. An example is FireWire, a new technology developed by Apple recently. As Apple (2002) claims, "FireWire is one of the fastest peripheral standards ever developed. Transferring data at up to 400Mbps, FireWire delivers more than 30 times the bandwidth of the popular USB peripheral standard. With its high data-transfer speed and "hot plug-and-play" capability, FireWire is the interface of choice for today's digital audio and video devices, as well as external hard drives and other high-speed peripherals" (<http://www.apple.com/firewire/>)

for late movers to compete successfully with the pioneer. Hence, claiming superiority for a unique feature and promoting this unique selling point is more desirable in a familiar product class. These suggestions are quite consistent with Capon's (1978) discussion of product life cycle and product entry strategy, i.e., a firm had better be a "pioneer" in the introduction stage, "follow-the-leader" in early growth, "segmenter" in late growth, and "me too" in maturity.

6.2 Research Implications

In the past 20 years, first-mover advantage has aroused great research interest with marketing scholars as well as management researchers. Two research questions have been intensively investigated: (1) should a firm be a pioneer or a follower? and (2), when should a firm enter the market? (Lilien and Yoon 1990; Lieberman and Montgomery 1998). The first question, a qualitative decision making issue, involves a trade-off between the advantages and disadvantages of being a pioneer/follower and has been a hot debate along the research stream (e.g., studies for the first-mover advantage: Robinson and Fornell 1985; Robinson and Min 2002; Urban et. al. 1986; studies against the first-mover advantage: Golder and Tellis 1993; Schnaars 1994; Sullivan 1991). The second question, a quantitative one, emphasizes the balance between a firm's resources, market conditions, the evolution of the industry, and marketing activities of existing and potential entrants (e.g., Lilien and Yoon 1990; Kerin, Raradarajan, and Peterson 1992; Shankar, Carpenter, and Krishnamurthi 1999).

Late-mover advantage, however, has not received enough attention until recently (e.g., Shankar, Carpenter, and Krishnamurthi 1998, 1999; Zhang and Markman 1998) and the strategic choice a late mover can utilize to compete against the pioneer is largely underdeveloped. Further, existing literature provides controversial arguments and predictions regarding the effectiveness of two basic entry strategies: an enhancing strategy vs. a distinctive strategy.

This dissertation contributes to the literature in two major ways. First, this research considers explicitly the strategic choices of a late entrant and further identifies the key behavioral

mechanisms underlying the efficacy of a late entry strategy: discrepancy and ambiguity effects. We propose that both enhancing and distinctive strategies could help a new brand compete successfully with the pioneer, but they accomplish this in different ways. More importantly, this thesis examines the contingency of enhancing and distinctive strategies and empirically demonstrates that a distinctive strategy is more effective in an established, familiar product class due to its attention-grabbing nature. An enhancing strategy would be more successful in a new, unfamiliar product class because of low levels of ambiguity. As such, this thesis provides insights to resolve the controversy in the existing literature.

Consistent with previous studies (e.g., Carpenter and Nakamoto 1989; Muthukrishnan 1995; Zhang and Markman 1998), this dissertation proposes that the pioneer is the brand against which late entrants are judged. So an implicit assumption is that product information stored in memory is organized by brand. Biehal and Chakravarti (1982) indicate that this is a reasonable assumption because brand-coded information (vs. dimension-coded information) leads to higher retrieval accuracy and faster learning times. Further, because most consumers are exposed to products in brand-structured environments such as product displays on supermarket shelves and brand-based advertising, brand-based processing is usually the norm (Hoch and Deighton 1989). This research also suggests that experts have the ability to process new attributes but novices tend to base their judgments more on the pioneer.

In this thesis, the primary dependent variable is a preference measure. As well documented in the literature, different tasks (e.g., preference vs. choice) will involve different cue utilization and attribute weighting. For example, unique features loom larger in choice than in preference judgment, but common features are weighted more heavily in preference task (e.g., Slovic and macPhillamy 1974; Tversky 1977; Tversky, Sattath, and Slovic 1988). Then an interesting question is whether using choice as the dependent variable will change the result patterns. My prediction is that a choice task may make a distinctive strategy more effective since

unique features become more prominent in choice. However, the interaction effects of strategy and product category will not change. That is, a distinctive strategy works better in familiar product classes while an enhancing strategy is more effective in unfamiliar product cases.

In this research, the pioneer is operationalized as a “pretty successful” pioneer. This operationalization is consistent with the definition of pioneering advantage. In the literature, pioneering advantage refers to the ability of *surviving* pioneering firms to enjoy a larger market share or earn more positive economic profits than *surviving* late entrants (Lieberman and Montgomery 1988). Therefore, by definition, the pioneer should be pretty successful in creating a new market and should be the market leaders at the early stage of the product life cycle (Lieberman and Montgomery 1998). From a behavioral perspective, a pioneering brand refers to “the brand that a consumer first chooses in a product category” (Muthukrishnan 1995, p. 98). In a new product class, it tends to be the actual pioneer in the market. In a mature product class, it is the first brand chosen by consumers and thus is possibly the market leader in the market. In either case, the pioneer greatly shapes consumers’ preference structure of the product category and becomes “entrenched” in consumers’ minds. Hence, the focus of this research is on how to compete successfully with an entrenched pioneer. Its implications are more relevant to how to outperform the pioneer in a new product class and more related to how to attack the market leader in a familiar, established market.

This research also provides important implications for future research. First, the effects of discrepancy and ambiguity may be moderated by a number of factors such as task variables, product characteristics, and personal factors. Future research is encouraged to investigate the roles of these factors (e.g., choice set size, purchase frequency, involvement, to name a few). In addition, to maximize the effectiveness of a late entry strategy, other components of marketing mix strategies must be modified accordingly. For example, a premium price could reduce perceived risk and thus may be more appropriate for a distinctive strategy. Similarly, a name

brand may be better off by exploiting the attention-drawing nature of a distinctive strategy, but a non-name brand may want to adopt an enhancing strategy to reduce perceived risk. The interaction effects of entry strategy, pricing, and branding would be an interesting topic for future research. Further, this research only examines the efficacy of enhancing and distinctive strategy. A natural question then is whether another basic entry strategy, a me-too strategy, can enable a late mover to surpass the pioneer. Theoretical work has suggested that a me-too strategy may not be able to overtake pioneering advantage (e.g., Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992). However, case studies show that it is one of the most popular and successful entry strategies for late movers (Schnaars 1994, p. 211). Capon (1978) also notes a me-too strategy may be the most appropriate one in a mature stage of a product life cycle. So is a me-too strategy undersold or oversold? It would be worthwhile to explore and compare the efficacy of this seriously understudied strategy with others.

6.3 Conclusions

First-mover advantage has been a hot topic in strategic marketing and management area in past two decades. However, the strategic choice that a late mover can utilize to surpass the pioneer is largely underdeveloped. Existing theories also provide controversial arguments and predictions regarding the efficacy of two basic late entry strategies: enhancing and distinctive strategies. The key objective of this thesis is to better understand the underlying behavioral mechanisms that enable a late entrant to compete with a successful pioneer and thereby address this inconsistency in the literature. This research proposes that to achieve a late-mover advantage, a follower must possess something unique enough to overcome the prominence of the pioneer (i.e., high differentiation), and/or provide something unambiguously superior and comparable to the pioneer (i.e., low ambiguity). Which mechanism is more salient depends on product familiarity. As such, a distinctive strategy is more effective in a familiar product class

due to its attention-grabbing nature. An enhancing strategy would be more successful in a novel or unfamiliar product class because of low levels of ambiguity.

Appendix 1

Pretest: CD Player Attribute Importance Ratings

Part I. Suppose you are going to buy a Portable CD Player. According to *Consumer Reports*, it is critical to examine the features of the player to judge the quality. Listed are the key features of a CD player and their Attribute Levels or Ratings (ratings are rated by *Consumer Reports*, ranged from 1 = poor, 2 = fair, 3 = good, 4 = very good, to 5 = Excellent).

For each attribute, Level B is relatively superior to Level A. But generally speaking, you need to pay more (about \$10) for a superior attribute.

How Attractive is it for YOU to buy a player with feature Level B compared to one with feature Level A?

Please indicate your evaluations on the following scales. (1 = Not At All Important; 9 = Very Important)

Features	Levels		Level B vs. Level A, How Attractive is it to YOU? Rating Results (20 subjects)	
	A	B		
1. Track location speed: Faster speed adds to the continuity of music being played	2 seconds	0.5 second	5.70	
2. Memory Buffer: Longer memory buffer holds the key to a skip-free performance so that movement won't cause a tracking error.	15 seconds	40 seconds	7.75	
3. Number of Programming Mode: More programming modes add convenience to the use of the player.	4	8	4.30	
4. Signal Processing System: Studio-designed system is superior to a stereo system in that it uses a special sound-field setting to add ambience to music.	Stereo	Studio	6.85	
5. Battery Life: longer life enables a longer continuous play	15 hours	40 hours	7.55	
6. Error Correction Rating: Higher error correction rate shows the player can well handle smudged or scratched discs	4.00	4.25	7.50	
7. Sound Control System: Digital system makes a player to reproduce sound more accurately	Stereo	Digital	7.00	
8. Wired Remote Control: lets you change tracks without touching the player	No	Yes	4.85	
9. Reliability Rating: Higher rating indicates a player is more likely to be trouble-free	4.25	4.50	7.65	
			Not At All Important	Very Important

Appendix 2

Attributes of CD Players/Language Translators Used in Studies 1 and 2

Study 1 – 1. New feature is Studio Signal System

Attribute	Levels*	Pioneer (Brand A)	Second (Brand B)	3 rd : Enhanced (Brand C)	3 rd : Distinctive (Brand C')
Locate speed	2 or .5 seconds	2	2	2	2
Memory Buffer	15 or 40 seconds	40	15	40	40
Error Correction Rating	4.00 or 4.25	4.00	4.25	4.00	4.00
Sound Control	Stereo or Digital	Stereo	Stereo	Digital	Stereo
New feature					Studio System

Study 1 – 2. New feature is Digital Sound Control

Attribute	Levels*	Pioneer (Brand A)	Second (Brand B)	3 rd : Enhanced (Brand C)	3 rd : Distinctive (Brand C')
Locate speed	2 or .5 seconds	2	2	2	2
Memory Buffer	15 or 40 seconds	40	15	40	40
Error Correction Rating	4.00 or 4.25	4.00	4.25	4.00	4.00
Signal System	Stereo or Studio	Stereo	Stereo	Studio	Stereo
New feature					Digital Sound Control

Study 2 – 1. New feature is Studio Signal System

Attribute	Levels*	Pioneer (Brand A)	Second (Brand B)	3 rd : Enhanced (Brand C)	3 rd : Distinctive (Brand C')
Locate speed	2 or .5 seconds	2	2	2	2
Memory Buffer	15 or 40 seconds	15	40	15	15
Error Correction Rating	4.00 or 4.25	4.25	4.00	4.25	4.25
Sound Control	Stereo or Digital	Stereo	Stereo	Digital	Stereo
New feature					Studio System

Study 2 – 2. New feature is Digital Sound Control

Attribute	Levels*	Pioneer (Brand A)	Second (Brand B)	3 rd : Enhanced (Brand C)	3 rd : Distinctive (Brand C')
Locate speed	2 or .5 seconds	2	2	2	2
Memory Buffer	15 or 40 seconds	15	40	15	15
Error Correction Rating	4.00 or 4.25	4.25	4.00	4.25	4.25
Signal System	Stereo or Studio	Stereo	Stereo	Studio	Stereo
New feature					Digital Sound Control

* Attribute level 2 is superior to level 1.

Note: The novel product, a language translator, is designed to possess similar attribute combinations as the familiar product (CD player), but the attribute description is changed slightly.

Attributes of Cameras Used in Study 3

Study 3 – 1. New feature is digital exposure system, Dominating case

Attribute	Pioneer (Brand A)	Second (Brand B)	3 rd : Enhanced (Brand C)	3 rd : Distinctive (Brand C')
zoom lens	3.0X	3.0X	3.0X	3.0X
Flash uniformity rating	4.25	4.00	4.25	4.25
Weight	10 oz	8 oz	10 oz	10 oz
Focus system	Autofocus	Autofocus	Wide-area autofocus	Autofocus
New feature				Digital exposure system

Study 3 – 2. New feature is digital exposure system, Non-Dominating case

Attribute	Pioneer (Brand A)	Second (Brand B)	3 rd : Enhanced (Brand C)	3 rd : Distinctive (Brand C')
zoom lens	3.0X	3.0X	3.0X	3.0X
Flash uniformity rating	4.25	4.00	4.15	4.15
Weight	10 oz	8 oz	10 oz	10 oz
Focus system	Autofocus	Autofocus	Wide-area autofocus	Autofocus
New feature				Digital exposure system

Appendix 3

Pretest: Camera Attribute Importance Ratings

Suppose you are going to buy a point-and-shoot film Camera. According to *Consumer Reports*, it is critical to examine the features of a camera to judge its quality. Listed are the key features of a camera and their attribute Levels or Ratings (ratings are rated by *Consumer Reports*, ranged from 1 = poor, 2 = fair, 3 = good, 4 = very good, to 5 = excellent).

For each attribute, Level B is relatively superior to Level A. But generally speaking, you need to pay more (about \$20) for a superior attribute.

How Important is it for YOU to buy a camera with feature Level B compared to one with feature Level A? Please indicate your evaluations on the following scales.

Features	Levels		Level B vs. Level A, How Important is it to YOU? Rating Results (29 subjects)
	A	B	
1. Image Quality Rating: describes the sharpness and freedom from lens flare and distortion	4.00	4.25	7.62
2. Zoom Lens: very helpful to frame a shot, letting you change the focal length to make subjects appear closer or farther away	3.0X	3.4X	6.31
3. Flash Uniformity Rating: describes the evenness of coverage at the camera's wide-angle setting	4.00	4.25	5.34
4. Flash Range: the farthest distance possible for flash shots with ISO 100 film	12 feet	15 feet	4.72
5. Focus System: wide-area autofocus enables you to catch off-center subjects and are also good for group shots	Autofocus	Wide-area autofocus	6.75
6. Convenience Rating: covers such features as a lens cover, autofocus confirmation, and flash coverage that tracks with the zoom lens	4.00	4.25	5.93
7. Lock System: smart lock prevents the back of the camera from being opened when there is an active roll of film inside – the back won't open until the roll of film has been fully rewound	Regular	Smart	4.93
8. Exposure System: digital exposure system adds exposure compensation automatically, producing a sharp image even in tricky lighting situations	Regular	Digital	6.68
9. Weight: the lighter, the easier to carry	10 oz.	8 oz.	5.45
10. Panorama Mode: let you shoot a panoramic (wide-angle) views, one that's about 3 ½ × 10 inches when printed	Regular	Panorama	4.62

Appendix 4

Camera Knowledge Test

Please read each of the following statements carefully and circle whether you believe that the statement is “true” or “false.”

- | | | |
|--|------|-------|
| 1. A point-and-shoot camera is a type of SLR camera. | True | False |
| 2. An f-stop value of 2 allows more light to pass through the lens than a value of 11. | True | False |
| 3. The aperture controls how long the film is exposed to the light. | True | False |
| 4. An accidentally blurry picture is more likely to occur using ISO 400 than ISO 100 film. | True | False |
| 5. A shutter speed of 125 means that the camera’s shutter is open for 1/125 of a second. | True | False |
| 6. A disposable camera is a type of twin reflex camera. | True | False |
| 7. For a point-and-shoot camera, you view a subject through the same lens that takes the picture. | True | False |
| 8. The smaller the focal length, the wider the maximum angle of view the camera can capture. | True | False |
| 9. An ISO number measures how sensitive a film is to light. | True | False |
| 10. An f-stop value of 11 allows less depth of field than a value of 2. | True | False |
| 11. The f-stop and the shutter speed work together in determining the length of exposure. | True | False |
| 12. Aperture settings are the most important factor for controlling “camera shake.” | True | False |
| 13. For a zoom lens, setting the focal length as 90mm gives more depth of field than a length of 50mm. | True | False |
| 14. A parallax error occurs most often when using a point-and-shoot camera. | True | False |

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RESEARCH INTERESTS

- Marketing Strategy:* Product entry, positioning, and pricing strategies; Cross-cultural assessment of the effectiveness of these strategies
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- Market Orientation:* Customer orientation; Differential effects of market orientation

RESEARCH ACTIVITIES

Journal Publication

Zhou, Zheng, Chenting Su, and Yeqing Bao, "A Paradox of Price-Quality and Market Efficiency: A Comparative Study of the U.S. and China Markets," International Journal of Research in Marketing, *forthcoming*.

Conference Proceedings

Zhou, Zheng and Yeqing Bao (2002), "Users' Attitudes toward Web Advertising: Effects of Internet Motivation and Internet Ability," Association for Consumer Research, *forthcoming*.

Zhou, Zheng and Kent Nakamoto (2001), "Price Perceptions: A Cross-National Study between American and Chinese Young Consumers," in Mary C. Gilly and Joan Meyers-Levy (eds.), *Advances in Consumer Research*, Vol. 28, Association for Consumer Research, 161-168.

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Zhou, Zheng, Liang Li, and Yeqing Bao (1999), "Demographic Profiles of China Internet Users: Implication for International Marketing in China," in Ruby Roy Dholakia and Solveig Wikstrom (eds.), *Electronic Commerce: Behaviors of Suppliers, Producers, Intermediaries and Consumers*, Conference on Telecommunications and Information Markets (COTIM), Vol. 3.

Papers under Journal Review

Poppo, Laura, Zheng Zhou, and Todd Zenger, "An Empirical Test of the Origins and Effectiveness of Relational Norms: Game-Theoretic, Transaction Cost, and Social Relations Perspectives," under *revision for second review* at Administrative Science Quarterly.

Brown, James R., Chekitan S. Dev, and Zheng Zhou, "Foreign Market Entry Modes in the Hotel Industry: Toward a Deeper Understanding," under *revision for second review* at Journal of International Business Studies.

Su, Chenting, Yeqing Bao, and Zheng Zhou, "Southern vs. Northern Chinese: An Exploratory Study on Cultural Segmentation of the China Market" under *revision for second review* at Journal of Business Research.

Zhou, Zheng, James Brown, and Chekitan Dev, "The Differential Effects of Market Orientation on Organizational Performance," under review at the Journal of the Academy of Marketing Science.

Bao, Yeqing, Zheng Zhou, and Chentin Su, "Cultural Differences in Decision-Making Styles: Impact of Face-Consciousness and Risk Aversion," under review at Psychology and Marketing.

Research in Progress

"Market Orientation, Positional Advantage, and Organizational Performance," to be submitted to Strategic Management Journal, with James Brown and Cheki Dev.

"Examining the Limits and Optimal Use of Vertical Integration, Relational Norms and Formal Contract," data collection finished, manuscript in process, with Laura Poppo.

"The Effects of Market Orientation, Human Resource Management, and Institutional Structure in a Transitional Economy," data collection finished, manuscript in process, with David Tse and Nan Zhou.

TEACHING INTERESTS

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