EXPLORING THE RECIPROCAL EFFECT OF NEGATIVE INFORMATION OF BRAND EXTENSIONS ON PARENT BRAND

LIN ZHANG, Truman State University
RONALD D. TAYLOR, Mississippi State University

This research focuses on how negative information on brand extensions impact customers' attitude towards the parent brand. It attempts to clarify the previously mixed findings on reciprocal effects of brand extension. More importantly, it endeavors to investigate such effects over several moderators: brand extension fit, information negativity, and association set size with parent brand. Two studies (using student samples and non-student samples) both confirmed that brand extension's negative information has a dilution effect on the parent brand. In addition, information negativity and association set size were shown to be two important moderators while brand extension fit did not have a significant moderating effect. These results were consistently observed in both of low-involvement and high-involvement products treatments.

INTRODUCTION

Brand equity has been highlighted as one of the most valuable assets a company possesses (Aaker and Keller 1990). One popular strategy that companies use to build and leverage equity is using brand extensions that launch new products with the original brand names (Aaker and Keller 1990; Bottomley and Holden 2001; Desai and Keller 2002; Meyvis and Janiszewski 2004). Successful extensions can provide benefits, such as reducing cost of introduction, gaining distribution and customer trial, and minimizing the risk of new product failures (Aaker and Keller 1990). Negative information related with brand extension, such as brand extension failures, can lead to negative perceptions, which may be difficult to reverse. Therefore, it is of critical interest for managers and academicians to have a better understanding of the effect of brand extension on the parent brand, especially its negative effect. In this research, the focus is to investigate the feedback effect of negative information of brand extension on the parent brand.

The Marketing Management Journal
Volume 19, Issue 1, Pages 1-15

One important factor that has been consistently overlooked is the severity of negative information. Both the category and the associative network theories suggest that the level of perceived congruity will influence the processing of the new information, and thus the existing category or schema (Del Vecchio and Smith 2005). However, previous research focused only on the perceived fit between the parent brand and brand extension as the determinant for perceived congruity (Martinez and Pina 2003), while ignoring the level of the severity of negative information. The level of negativity might contribute to a great extent to whether the information is considered as congruent or incongruent with the parent brand.

Another factor that lacks research attention is the association set size of the parent brand. As the size of an association set for a given concept increases, the likelihood of any given associated node being activated is reduced. Thus as more nodes are activated, the lower the chance other nodes will be activated (Anderson 1983; Nelson, Bajo and Casanueva 1985). Learning additional facts about a concept takes strength away from already known facts (Anderson 1983). In view of that, the activated nodes associated with the brand when the consumer makes the evaluation will influence the impact of the negative information on the

parent brand. When this factor is omitted, the explanatory power of any model will likely be reduced.

In sum, this research's main objective is to investigate the effect of negative information of brand extension on the parent brand. Specifically, three moderators are considered: namely, the perceived fit between parent brand and brand extension, the severity of negative information, and the association set size of the parent brand.

THEORY BACKGROUND AND HYPOTHESES

Mandler's (1982) schema congruity model seems to provide an insightful and detailed explanation by varying the level of incongruity. The schema congruity model (Mandler 1982) suggests that individual's existing schema serves as a frame of reference and guides the processing of incongruity. Thus, the degree of fit with the activated schemas (i.e., level of congruity) is likely to determine what specific internal process people use when they are faced with new information. In addition, attitudes and evaluations are affected through the process of resolving incongruity. Therefore, how successful individuals are in resolving an incongruity within their cognitive schema network will likely influence their affective responses.

Specifically, Mandler (1982) began with the proposition that congruent information tends to be accepted with mildly favorable response because it does not require resolution and, therefore, is generally predictable and satisfying. In this situation, the congruent information fits in with the existing schema quite readily, and thus does not require engaging in the resolution process to solve discrepancies. As a result, the simple process involved makes it easier to integrate congruent information into the existing schema.

In contrast with congruent information, information that contains mild incongruity is believed to generate more extensive processing because people attempt to resolve and find meaning in the incongruity (Mandler 1982). Usually, moderate incongruities are solved or made sense of by enacting minor changes in one's memory. Therefore, when facing moderately incongruent information, individuals tend to either assimilate the new information or use an alternative schema. Assimilation refers to the placement of the incongruent information into an existing schema, which is likely to occur when the new information is slightly incongruent with the existing schemas and thus can be easily incorporated into the schema (Mandler 1982). Alternative schema refers to utilization of other schemas by analogical reasoning. Alternative schema involves forming new connections and/or transferring prior knowledge to resolve incongruity, which does not involve drastic changes in current schema structure (Mandler 1982). This is consistent with the schema-plus-tag model proposed and tested by Graesser and Nakamura (1982) which suggests that new incongruent information is stored with prior knowledge (i.e., existing schema) but attached with a set of tags indicating that it is atypical and irrelevant. Atypical events that are specifically tagged are therefore more easily recognized. This salience tends to result in relatively bigger impact of incongruent information on individuals' schemas and attitudes.

Assume that one has a favorable and positive perception of a brand, and then this individual is exposed to new negative information about the brand extension. Because the parent brand and the brand extension are linked through the same brand name, by spreading activation of connected links (Anderson 1983), the linkages between parent brand and the negative information may be forged and triggered. When the negative information is mildly incongruent with the existing perception of the schema, it will be assimilated or processed by analogical reasoning to become a part of the existing schema. Besides, it will be put together with a set of tags, indicating that it is atypical and making it more conspicuous and accessible. Therefore, the existing schema of and attitude

toward the brand are more likely to be changed by the negative information.

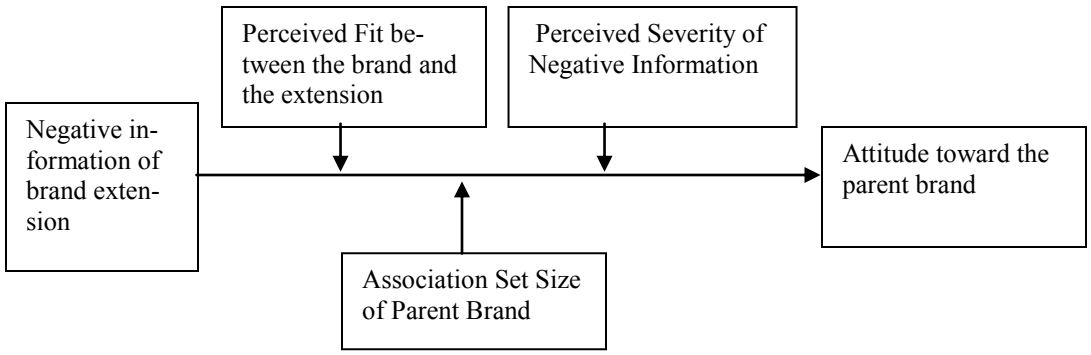
However, if one is faced with severe incongruity, the individual cannot use analogy or transfer prior knowledge from an existing schema to the target incongruity as in assimilation or alternative schema (Mandler 1982). A new schema is required for this kind of situation. Specifically, in response to severe incongruities, one might restructure his/her knowledge schema or build new associative links between existing schemas that were not previously connected. As distinguished from simple assimilation and alternative schema, people will typically build a new subcategory and separate the new information from the existing schemas to resolve the severe incongruity. This information processing is consistent with the Sub-typing model, developed by Weber and Crocker 1983, which indicates that when people respond to new information by seeing it as exceptions to the rule, they place the new information in a subcategory apart from existing knowledge. When the negative extension information is perceived to be severely incongruent with the existing positive schema of the brand, instead of modifying the existing schema of the brand, the individual tends to form a new and separate subcategory for this incongruent information. Consequently, the schema of and the attitude toward the brand remain relatively unchanged, and the negative information, together with the brand extension, will be seen as separate and different from the parent brand.

Based on the previous discussion, a research model is presented here (see Figure 1). The perceived congruity between the negative information and the parent brand will be influenced by the perceived fit between parent brand and brand extension and the level of negativity of the new information. The research model also identifies that the relationship between negative information of brand extensions and attitude toward the parent brand can be modified by the association set size of the parent brand.

The Impact of Negative Information

It is intuitive to speculate that negative information about an extension would be detrimental to the family brand. This is evident from the broad support for the potency of negative information throughout the behavioral and marketing literature. For instance, research has found that negative adjectives are more powerful than positive adjectives (Anderson 1983), and the weights given to negative adjectives have exceeded the weights given to positive adjectives (Romeo 1991). Unfavorable ratings, as compared to favorable product ratings, prompt significantly strong attributions to product performance, belief strength, and

FIGURE 1
Research Model



affect toward products (Till and Shimp 1998). Literature in various psychological traditions has theorized and/or shown empirically that negative information has disproportionate influence on consumers' beliefs and evaluative judgments (Judd, Drake, Downing and Krosnick 1991).

When a consumer thinks about a brand, the link with the brand extension node is activated to a certain level through spreading activation (Anderson 1983). The joint activation of the parent brand and the brand extension provides a path over which one's evaluation of the brand extension has an opportunity to transfer to the brand. The key to the process is the simultaneous activation of the parent brand and the brand extension nodes. Negative information about the brand extension activates the brand extension node, which then activates the parent brand to some degree and allows reduced evaluation of the brand extension to transfer to the parent brand.

H_1: Given a sufficiently strong associative link between a parent brand and brand extension, subsequent negative information about the brand extension will result in lowered evaluations of the parent brand.

Moderator 1: Degree of Perceived Fit

Mandler's schema congruity model (1982) differentiates routes of information processing based on the level of incongruity between the new information and the existing schema. In the case of our research problem, the effect of negative extension information on the attitude to the parent brand, two major factors influencing the level of the incongruity between the negative brand information and the existing schema of the brand are identified: namely, "perceived fit between the brand and the extension" and the "severity of the negative information." The first factor has been widely used in research on reciprocal effects of brand extension (Martinez and Pina 2003).

The reasoning on the role of fit is as follows. The negative information alone already represents incongruity to the existing positive schema of the brand (assume the consumer has a prior attitude toward the brand which is positive). When there is a low fit between the parent brand and the extension, information related to the extension is considered less relevant to evaluating the parent brand than when the fit between the core brand and an unsuccessful extension is high. Therefore, in this low-fit situation, the incongruity between the negative information and the parent brand is deemed mild and is likely to be either assimilated or processed according to Mandler's schema congruity model (Mandler 1982). On the other hand, when there is a high fit between the parent brand and the extension, information related to the extension is considered more relevant to evaluating the parent brand and there is a greater negative effect from the extension to the parent brand. This, in turn, would imply that the damage to the core brand would be greater when the extension is fit to the parent brand than when it is not.

Although several previous studies (Keller and Aaker 1992; Romeo 1991) on this moderator for the brand dilution effect did not find significant support, methodological issues might have hindered their investigations. The present study employs the same hypothesis while at the methodological issues are considered and improved as discussed later.

H_2: If negative information is attached to brand extension, consumers are more likely to have negative evaluation of the parent brand when they perceive a strong fit between the parent brand and the brand extension than when the perception is of a weak fit.

Moderator 2: Severity of the Negative Information

Mandler's schema congruity model (Mandler 1982) suggests that the level of incongruity between new information and the existing schema will moderate the effect of the new information on the changes of the existing schema. Severity of the negative information is

also a determinant for the level of perceived incongruity. Assuming that the consumer already has a positive perception of the brand, the more severe the negative information is the more incongruent the new information is with the existing schema. According to the schema incongruity model, when the new information is considered mildly incongruent with the existing schema, people tend to either assimilate the new information or use an alternative schema. Accompanied with this process, consumers' attitude towards the parent brand will be negatively changed. However, if the negative information is severe, the incongruity between the new information and the existing schema is difficult to resolve as consumers are more likely to form a sub-category for the negative information. Consequently, the strength of the association between the negative extension and the parent brand is unlikely to be strong, and the impact of the negative information on attitude toward the parent brand is not likely to be high. Thus, mildly negative information will have a higher impact on parent brand than will severely negative information. Therefore, the following hypothesis is proposed.

H_3: If negative information is related to the brand extension, consumers are more likely to have negative evaluation of the parent brand when the negative information is mild than when it is severe.

Moderator 3: Size of Association Set

An association set represents the preexisting associates, or group of concepts, that are related meaningfully to an object (Nelson, Schreiber and McEvoy 1992). As the size of an association set for a given object increases, the likelihood of any given associated node being activated is reduced; the greater the number of concepts activated, the less intensively each will be activated (Anderson 1983; Nelson et al. 1985). Activation of a set of nodes can inhibit the activation of related nodes (Martindale 1991). This basic principle is known as the fan effect.

Interference will be more pronounced for brand names with large association sets, because a greater number of diverse associations might interfere with the activation of specific links. Thus, memory for brand information may be poorer for those brands with a large rather than a small association set (Meyers-Levy 1989).

In the situation where the association set is smaller there is less pronounced interference and the connection between brand extension and parent brand is strong. Hence, the negative information may easily trigger the link to parent brand and bring the parent brand name into consumers' memories. As a result, negative information can have an adverse effect, through lowered brand evaluations of the parent brand. However, when the parent brand has a larger association set, due to the more pronounced interference, the likelihood for the negative information to trigger the link to parent brand is reduced. Consequently, the negative information will not have a significant detrimental effect on the parent brand. This speculation is crucial in that negative information about a brand extension may be problematic for the parent brand only when consumers have scant association sets, or knowledge structures for the parent brand. The negative reciprocal effect of brand extension caused by negative information can be limited if the parent brand already has a large set of positive associations.

H_4: If brand extension is related with negative information, consumers are more likely to have negative evaluation of a parent brand when the association set with the parent brand is small than when it is large.

METHOD

The experiment used a 2 x 2 x 2 x 2 mixed factorial design. The between-subject variables were severity of negative information (mild/severe), parent brand's association set size (large/small), and category fit between parent brand and brand extension (same category/different category). A replication of two product categories (high involvement and low involvement product) was used as a within-

subject variable. Each subject received a subset of two of the total set of 16 scenarios. These were designed to vary in terms of product category and category fit. To increase the generalizability, two studies using different subjects were conducted. Similar to most of the brand extension research to date (Brudvig and Raman 2006; Dawar 1996; Martinez and Pina 2003; Meyvis and Janiszewski 2004), a student sample was used in the first study. Undergraduates from a large southern university were recruited to participate and were randomly assigned to one of the study conditions. Following this study, a small non-student sample was also used to validate the results. Both studies used the same questionnaires except for the demographic questions.

An important decision was whether to use real or fictitious brands. Both have strengths and weaknesses. When using fictitious brands, the problem of projecting the results to the real marketing situation is evident (Klink and Smith 2001). Nevertheless the elevated control of the experimental conditions makes it possible to have greater internal control (Martinez and Pina 2003) because the effect of other relevant factors is minimized (Churchill and Iacobucci 2002). After the decision was made to use fictitious brands, a series of pretests were conducted to (1) select the two product categories; (2) select the brand names; (3) measure perceived fit between parent and brand extension, and (4) measure the perceived negativity of the negative information.

Desktop computers (brand name is I-Machine or simplified as I) and manual toothbrushes (brand name is CompleteTeeth or simplified as C) were selected as the high involvement and low involvement product categories respectively. The selection of brand extensions was based on two standards: (1) extensions in the same and different categories, and (2) real problems reported in the past based on product recalls and alerts on the website of the U.S. Consumer Product Safety Commission. The two extensions chosen for desktop computers were laptop computers (same product category) and plasma televisions (different product category). For manual toothbrushes the extensions were electronic toothbrushes (same product category) and electronic flossers (different product category). Poor product reviews were chosen as mild negative information and product recall announcements and information involving serious bodily injuries caused by the product and potential shock or electrocution hazard were chosen as severe negative information.

Variables used were as follows:

Perceived Fit. The degree of extensions' category fit was assessed with a three-item, seven-point scale (brand extension similarity, brand extension representation, and brand extension consistency) (Broniarczyk and Alba 1994; Keller and Aaker 1992; Loken and Roedder 1993, Park, Miberg and Lawson 1991).

Perceived Negativity. Since Yoon's (2003) three-item seven-point semantic differential scale exhibited problems with face validity and reliability, a four-item seven-point semantic differential scale was developed (negative/not negative; damaging/not damaging; harmful/not harmful; destructive/not destructive).

Brand Attitude. Yi's (1991) scale measuring brand attitude (good/bad, unfavorable/ favorable, and like/dislike) was used to measure attitude toward the brand both before and after the exposure to the negative information in the experiment.

Product Involvement. To determine the product involvement level, a six-item, semantic differential scale (Srinivasan and Ratchford 1991) was used. These items were: I have a great/no interest in it; It is/isn't fascinating; I have/don't have a compulsive need to know more about it; I am/am not crazy about it; I like/don't like it; and I like/don't like to engage in conversation about it.

RESULTS

Study I:

A total of 384 treatments were administered to students at a large southern university, yielding 362 usable questionnaires for a 94.3 percent usable response rate. A proper data screening procedure was conducted before analysis of the data. All missing variables were replaced with their group mean values as Tabachnick and Fidell (1996) suggested.

Manipulation Checks. Three measures of brand extension fit were taken: brand extension similarity, brand extension representation, and brand extension consistency (1=very similar, representative and consistent, 7=very dissimilar, unrepresentative and inconsistent). These three items were averaged to form a composite measure of brand fit (Cronbach's a=. 839 for C and =. 887 for I; C as CompleteTeeth scenario and I as I-Machine scenario). As expected, brand extension fit was successfully manipulated for C ($\bar{X}_{high}$ =2.15, $\bar{X}_{low}$ =3.20, $F_{(1,360)}$ = 51.75, p =. 000) and for I ($\bar{X}_{high}$ =2.59, $\bar{X}_{low}$ =4.09, $F_{(1,360)}$ = 92.70, p =. 000).

Information negativity was measured with four items: negative, damaging, harmful and destructive. All of the items ranged from 1 to7 with 1=very negative and 7=very positive, except for item "negative" which is reverse coded. These four items were averaged to form a composite measure of information negativity (Cronbach's a=. 933 for C and =. 944 for I). As expected, information negativity was successfully manipulated for C ($\bar{X}_{severe}$ =4.13, $\bar{X}_{mild}$ =2.93, $F_{(1,360)}$ = 60.51, p < .001) and for I ($\bar{X}_{severe}$ =4.34, $\bar{X}_{mild}$ =2.91, $F_{(1,360)}$ = 106.02, p < .001).

The scale developed by Srinivasan and Ratchford (1991) was used to measure product involvement. It includes six semantic differential items (ranges from 1-7; 1= very high involvement and 7= very low involvement). These six items were averaged to form a composite measure of product involvement (Cronbach's a=. 857 for C and . 891 for I). As expected, subjects had low involvement with toothbrushes and related products ($\bar{X}_{c}$ = 4.68) and high involvement with desktop computers and related products ($\bar{X}_{i}$ = 3.92). Also, involvement with toothbrushes and related products was significantly different from involvement with desktop computers and related products (t^{362} = 70.01 for C, t^{360} = 53.82 for I, p< .001).

The last independent variable is the association set size the consumer previously had with the original brand. It is manipulated by providing a detailed or a brief case study of the brand to the subjects. Therefore, there is no variable measuring the perceived size of the association set.

General hypothesis about attitude change. T-tests suggest that this hypothesis was supported both for the first brand (CompleteTeeth; thereafter refers to as C) ($\bar{X}_{c1}$ =3.18, $\bar{X}_{c2}$ =4.03; t_1=59.07, t_2=64.00; p< .001) and for the second brand (I-Machine; thereafter refers to as I) ($\bar{X}_{i1}$ =2.76, $\bar{X}_{i2}$ =3.73; t_1=50.73, t_2= 59.31; p< .001).

The other three hypotheses examined the relationships between each of the three independent variables (brand extension fit, information negativity, and association set size

of brand), and respondents' attitude changes to the brand. Due to potential interrelated relationships among the independent variables, a three-way ANCOVA was taken to test for the relationships. The dependent variable is the attitude change (the difference between $\bar{X}_2$ and $\bar{X}_1$).

Hypothesis about brand extension fit. The second hypothesis focused on the relationship between brand extension fit and attitude change. In the case of C ($F_{(1, 352)}$ = 1.59, p=. 208), significant effect of brand extension fit on attitude change was not found. This was also found to be the case with regard to I ($F_{(1, 352)}$= 2.43, p=. 12).

Hypothesis about information negativity. The third hypothesis dealt with the relationship of the severity of negative information and the attitude change. As expected, for C ($F_{(1, 352)}$= 27.75, p< .001), the results suggested that there was a significant relationship between the severity of negative information and the attitude change. Consistent with C, significant relationship between the severity of information and attitude change of parent brand was also found for I ($F_{(1, 352)}$= 8.77, p=. 003). Mean comparisons for I-Machine suggested there was a significant relationship between extension information negativity and attitude change. However, mean comparisons revealed opposite directions for the hypothesized relationship. Namely, the attitude change caused by severe negative information is higher than that caused by mild negative information both for C ($\bar{X}_{change-severe}$ =1.146, $\bar{X}_{change-mild}$ = .653) and for I ($\bar{X}_{change-severe}$ = 1.250, $\bar{X}_{change-mild}$ =. 443).

Hypothesis about association set size. The fourth hypothesis focused on the last independent variable. It proposed that the association set size of the parent brand influenced the extent of brand attitude change. For I (F (1, 352)= 4.21, p=. 041), significant relationships were found. Similarly, marginally significant relationships were also found for C (F (1, 352) = 3.86, p=. 050). Namely, the attitude change when the respondent has small association set size is higher than when the respondent has large association set size both for the computers, the high involvement product ($\bar{X}_{change-large}$ =.698, $\bar{X}_{change-small}$ = 1.001) and for I ($\bar{X}_{change-large}$ = 1.055, $\bar{X}_{change-small}$ =. 1.409).

.

No interaction effects between independent variables were hypothesized. Correspondingly, most interactions (two-way and three-way interactions) were not significant. One exception was for CompleteTeeth --- one interaction between brand extension fit and association set size was found marginally significant (F(1, 352)= 3.49, p=.062). By examining the profile plot, it was found that when subjects have a large association set with the parent brand, subjects have larger attitude changes when the brand extension fit is high (vs. low). On the other hand, when subjects have a small association set with the parent brand, subjects have a smaller attitude changes when the brand extension fit is high (vs. low).

Study II:

A total of 174 treatments were administered to students at a small midwestern university. Students were asked to find non-student respondents to answer the questionnaires. A total of 138 questionnaires were returned and 132 were usable, accounting for a 75.9 percent response rate. A proper data screening procedure was conducted before analysis of the data. All missing variables were replaced with

their group mean values as Tabachnick and Fidell (1996) suggested.

Manipulation Checks. Three measures of brand extension fit were averaged to form a composite measure of brand fit (Cronbach's a=. 869 for C and =. 921 for I). As expected, brand extension fit was successfully manipulated for C ($\bar{X}_{high}$ =2.15, $\bar{X}_{low}$ =2.81, $F^{(1,137)}$ = 9.06, P =. 003) and for I ($\bar{X}_{high}$ =2.20, $\bar{X}_{low}$ =3.12, $F^{(1,137)}$ = 15.05, P =. 000) in this study.

The four items measuring information negativity were averaged to form a composite measure of information negativity (Cronbach's a=. 922 for C and =. 933 for I). As expected, information negativity was successfully manipulated for C ($\bar{X}_{severe}$ =3.91, $\bar{X}_{mild}$ =2.91, $F^{(1,131)}$ = 18.08, P =. 000) and for I ($\bar{X}_{severe}$ =4.34, $\bar{X}_{mild}$ =2.91, $F^{(1,131)}$ = 25.56, P< .001).

The six items measuring product involvement were averaged to form a composite measure of product involvement (Cronbach's a=. 899 for C and =. 898 for I). As expected, subjects had a low involvement with toothbrushes and related products ($\bar{X}_{c}$ = 5.23) and a high involvement with desktop computers and related products ($\bar{X}_{i}$ = 4.24). Also, involvements with toothbrushes and related products were significantly different from involvement with desktop computers and related products (t^{138} = 55.49 for C, t^{138} = 35.98 for I, p< .001).

General hypothesis about attitude change. This hypothesis proposed that there is significant difference between respondents' original attitudes toward the brand and their attitudes to the brand after exposure to negative information related to the brand extension. This hypothesis was supported for C ($\bar{X}_{c1}$ =3.17, $\bar{X}_{c2}$ =4.40; t_1=42.75, t_2=39.80; p< .001) and for I ($\bar{X}_{i1}$ =2.69, $\bar{X}_{i2}$ =4.07; t_1=31.43, t_2= 37.69; p< .001).

Hypothesis about brand extension fit. The second hypothesis focused on the relationship between brand extension fit and attitude change. In the case of C ($F_{(1, 129)}$= 6.09, p=. 015), significant effect of brand extension fit on attitude change was found. High-fit brand extensions caused larger changes of brand attitude toward the parent brand D ($\bar{X}_{change-highfit}$ =1.492, $\bar{X}_{change-lowfit}$ = 1.054). However, with regard to I, no evidence was found to support the significant effect of brand extension fit on attitude change ($F_{(1, 129)}$= .507, p=. 478).

Hypothesis about information negativity. The third hypothesis dealt with the relationship between the severity of negative information and the attitude change. As expected, for C ($F_{(1, 129)}$= 28.02, p< .001), the results suggested that there was a significant relationship between the severity of negative information and the attitude change. Similarly with C, significant relationship between the severity of information and attitude change toward the parent brand was also found for I ($F_{(1, 129)}$= 27.98, p< .001). However, mean comparisons revealed opposite directions to the hypothesized relationship. Namely, the attitude change caused by severe negative information is higher than that caused

by mild negative information both for C($\bar{X}_{change-severe}$ = 1.825, $\bar{X}_{change-mild}$ =. 764) and for I($\bar{X}_{change-severe}$ =1.927, $\bar{X}_{change-mild}$ = .795).

Hypothesis about association set size. The fourth hypothesis focused on the last independent variable. It proposed that the association set size of the parent brand influences the extent of brand attitude change. For C ($F_{(1, 129)}$ = 4.62, p=. 033), significant relationships were found. Congruently, marginally significant relationships were also found for I ($F_{(1, 129)}$ = 3.60, p=. 060). Specifically, the attitude change when the respondent has small association set size is higher than when the respondent has large association set size both for C($\bar{X}_{change-large}$ =.763, $\bar{X}_{change-small}$ = 1.231) and for I ($\bar{X}_{change-large}$ = 1.525, $\bar{X}_{change-small}$ = . 2.049).Most interactions (two-way and three-way interactions) were not significant. One exception was for CompleteTeeth, one interaction between brand extension fit and information negativity was found to be significant ($F_{(1, 130)}$= 20.87, p< .001). By examining the profile plot, it was found that when subjects received severely negative product information, they had larger attitude change when the brand extension fit was high (vs. low). On the other hand, when subjects received mildly negative information, they had smaller attitude change when the brand extension fit was high (vs. low).

DISCUSSION

Although prior research in which consumers received negative information about a brand extension has generally shown only limited dilution effect to overall brand attitude (Keller and Aaker 1992) and brand beliefs (Loken and John 1993; Romeo 1991), this research found significant attitude change between before and after the respondents were exposed to negative brand extension information. Reciprocal effects of negative information of brand extension to the parent brands were found in both student samples and non-student samples and across both high-involvement (computers) and low-involvement products (toothbrushes). The significant finding might have been due to the detailed brand, extension, and negative information provided to the subjects. One limitation of previous studies was the small amount of information provided to subjects about the parent brand. In general, subjects have been told only the name of the extending brand and the product category of the new product, and then asked to form evaluations about the parent brand. The lack of detailed descriptive information about the extension may have resulted in subjects being fairly uninvolved and uninterested in the task (Viswanathan 1997).

Brand Extension Fit. Research results from both studies and both product categories indicated that the level of category fit between the parent brand and the brand extension did not have a significant impact on the reciprocal effect of negative brand extension information (the exception was found with the toothbrush treatments in non-student samples). This finding is consistent with some of the past studies examining how an unsuccessful or unfavorable brand extension dilutes its parent brand. For example, Loken and John's (1993) and John, Loken, and Joiner's (1998) research revealed that dilution effects on brand beliefs do emerge when brand extension attributes are inconsistent with the family brand, *regardless of the category similarity of brand extensions*. While Keller and Aaker (1992) concluded that the core brand image is not affected by unsuccessful brand extensions, they still found that the level of how the brand extensions are perceived as typical of the core brand did not have a differential impact, either.

However, the findings about brand extension category fit were not consistent with the

prediction based on the Mandler's Schema Congruity Model. Mandler's model suggests that an individual's existing schema serves as a frame of reference and guides specific types of internal processes according to different levels of incongruity. Negative information of a brand extension of the same product category could be considered as moderately incongruent information and thus should be assimilated with existing schema. While negative information of a brand extension of a different product category, considered severely incongruent information, should be filtered out from existing schema and encoded as a separate case. Therefore, high (vs. low) category fit brand extension should have a more significant influence on the attitude change of parent brand.

The difference between the hypothesis and the experiment results might be due to the lack of difference of level of fit between brand extensions. The research intended to investigate the reciprocal effect caused by negative information rather than that caused by dissimilarity between the brand and the extensions. Thus, when choosing brand extensions, extremely dissimilar brand extensions were intentionally dismissed as to avoid introducing reciprocal effect cause by unfit brand extensions. Therefore, although the levels of fit of the brand extension are statistically different, they might still fall under the moderate fit category.

Thus, to state the findings about brand extension fit from this research more precisely: if the association between the brand and the brand extension is strongly established, and there are no extremely unfit links between the brand and the brand extension, the relative variations of level of fit between the parent brand and the brand extension will not have a significant differential effect on the evaluation of the parent brand. Under this condition, the respondents can assimilate negative information and adjust their attitude to the parent brand accordingly; no negative information is rejected as too incongruent, and thus separated from the original schema.

Information Negativity. Research results from both student samples and non-student samples indicated that the level of information negativity significantly influenced the effect of negative extension information on customer attitudes toward the parent brand, regardless of the product's involvement level. However, the direction of the vector is opposite to the hypothesis. The hypothesis based on Mandler's schema congruity model suggested that when severe negative information about the brand extension is exposed to respondents, the impact would be smaller than when consumers are exposed to mild negative information about the brand extension. The logic is that severe negative information is viewed as more incongruent with the schema, and might be rejected as temporal or unrelated, therefore the severe negative information is established as a subtype and separated from the existing schema. However, in this research, severe negative information is found to lead to more attitude change, whereas mild negative information leads to less attitude change.

One explanation of this unexpected finding might be due to the use of fictitious brand. Although large amounts of information about the brand and brand extension were presented to subjects, attitudes toward the brand were formed shortly before the introduction of negative information. Even with the intervening task that removed the carryover effect of the brand attitude, the short-lived attitude was likely to be easily changed by subsequent negative information.

As mentioned previously, the brand extension in the research did not reach to an extremely dissimilar level, the brand and the brand extension still have bases for associations other than the brand name alone. Negative information of the brand extension could not be isolated from the original brand schema just because of the severity of the negative information. Hence, mild negative information would have a less significant effect than severe negative information on consumer's attitude toward original brands. Because both are assimilated to the original brand schema, severe

negative information might require more effort and more adjustments to maintain consistency across the links within the schema, and consequently would have a stronger influence on the attitude to parent brand. Thus, for highly to moderately consistent brand extensions, severe negative information of brand extension causes more negative customers' attitude change toward the parent brand. It is speculated that when the brand extensions are extremely different, and/or the negative information is extremely severe, subjects might have difficulty assimilating the extremely discrepant information with existing brand schema. They might ascribe the cause of the negative information either to difficulty of transferring the company's capability to the new brand extension, or to factors beyond the brand's control. In the above situations, the negative extension information may not have a severe effect on the brand attitude.

Association Set Size. As predicted by the corresponding hypothesis, the research results from both studies illustrated that association set size of parent brand was a significant factor moderating negative brand extension's reciprocal effect on parent brand, and this effect was observed in the cases of both of low-involvement product (toothbrushes related) and high-involvement product (computers related). When consumers have a large association set with the parent brand, they have a greater number of links associated with the brand. Thus, the interfering effect of other activated related nodes reduces the chance and intensity of the negative information to be processed. The detrimental effect of the negative information on parent brand is small. However, when consumers have a smaller association set, they do not have many activated nodes and interfere with the processing of the negative information will be less. As a result, the effect of negative information is large.

This finding is crucial in that negative information about a brand extension will be more problematic for the parent brand when consumers have scant association sets, or knowledge structures for parent brand. On the other hand, the negative reciprocal effect of brand extension caused by negative information can be limited if consumers already have a large set of positive associations with the parent brand. Consumers' rich and varied cognitive structures of the brand can isolate the brand from negative press. This finding is consistent with other research findings which suggest that brands for which consumers have higher commitment and stronger associations are more resistant to negative publicity (Ahluwalia, Burnkrant and Unnava 2000) and product harm crises (Dawar and Pillutla 2000).

This study has several implications. In general, the significant impact of negative information on parent brand evaluation has been enlightened by this research. This significant finding supplemented the previous findings with the improved experimental design and more details provided for parent brand and brand extensions. This finding is an important addition to brand extension research suggesting a significant relationship between negative brand extension information and the evaluation of parent brand. This sends a message to brand managers who are facing a proliferation of brand extensions that the potential of getting involved with negative extension information increases the chances of the damaging the parent brand. Corporations should carefully manage new brand extensions and, thus, reduce the potential damage to the established original brand.

Second, there no studies that had evaluated the role of severity of negative information in the context of brand extension before. This research extended the application of schema theory to brand extension from merely conceptualizing the congruity in terms of perceived fit between parent brand and brand extensions to the congruity influenced by the severity of negative information. Research findings indicate that severity of negative information is a significant moderator for the relationship between brand extension negative information and consumers' attitude change toward parent brand. This significant finding has great implication for negative information

research since severity of information has always been overlooked as an important dimension. It provides new avenues for negative extension information research.

The findings about negativity of brand extension information also have important managerial implications. Depending on the level of severity of the information, consumers would take different routes for information processing, creating different levels of change in consumer attitudes toward the brand. Thus, the estimation of the damage to brand equity of the parent brand also would depend on the severity of brand extension negative information. Also, it implies that facing different level of severity, the company might need to use different methods and techniques to respond to negative information.

Third, the association set size is another newly introduced concept to brand extension research. This variable reflects the conflicting and interfering effects by other associative nodes of a concept. The more nodes associated with the brand, the less likely one specific node will have a great impact on the overall evaluation of the concept because all activated nodes will compete for attention and processing capacity. The findings related with association set size of the brand also provide significant practical implications. More specifically the findings suggested that if the consumers already have a large set of well-defined association with the brand, then negative information would not hurt the brand to a large extent. It implies that company should engage in precautious activities, which means even before actually encountering any possible negative information, the company should try to create and manage a positive and extensive association network with the brand. High brand equity probably will shield the company from future negative information.

Fourth, another significance of this study involves methodological issues. Several of the previous reciprocity studies on brand extension have methodological limitations. In particular, one limitation of the previous studies is the amount of information provided to subjects about the parent brand. In general, subjects have been told only the name of the extending brand and the product category of the new product, and then asked to form evaluations about this extension. The lack of more complete descriptive information about the extension may have resulted in subjects being fairly uninvolved and uninterested in the task (Viswanathan 1997). This low involvement may have contributed to the insignificant reciprocal effects findings. However, this research avoids this limitation by varying the involvement level with the product category when designing for product replicates, and providing an expanded brand and extension description to subjects.

STUDY LIMITATIONS

Several characteristics of the study itself limit the generalization ability of the results. This research did not use extremely unfit brand extensions to test the hypotheses so as to avoid introducing confounding effect caused by unfit extensions other than by negative information. This manipulation might be a causing factor for the insignificant findings about brand extension fit. Future research should include different levels of unfit extensions in the experiment to investigate brand extension fit's moderating effect.

In addition, this research utilized fictitious brand names in two product categories. Future studies should examine negative reciprocal effects for real brands in other product categories. For instance, would these same results apply to real brands? Would these results apply to very dissimilar brand extensions? Future studies may find that extension fit have influence on the attitude change if the effect of negative information and effect of unfitting brand extensions can be separated.

Another limiting factor is the compressed time in which the phenomenon was examined. Each complete experiment, which involved learning about the brand, developing the association

between the brand and brand extension, and reacting to exposure to the negative information, was done in 35 to 45 minutes. In the marketplace, the process would occur over weeks, if not years. Future research may investigate how negative information's effect on parent brand change over time.

REFERENCES

Aaker, David and Kevin Lance Keller (1990), "Consumer Evaluations of Brand Extensions," *Journal of Marketing*, 54, 27-41.

Ahluwalia, Rohini, Robert E. Burnkrant, and H. Rao Unnava (2000), "Consumer Response to Negative Publicity: The Moderating Role of Commitment," Journal of Marketing Research, 37 (May), 203-214.

Anderson, J.R. (1983), "A Spreading Activation Theory of Memory," Journal of Verbal Learning and Verbal Behavior, 22, 261-295.

Bottomley, Paul A. and John R. Doyle (1996), "The Formation of Attitudes Towards Brand Extensions: Testing and Generalising Aaker and Keller's Model," International Journal of Research in Marketing, 13(4), 365-377.

Broniarczyk, Susan M and Joseph W. Alba (1994), "The Importance of the Brand in Brand Extension," Journal of Marketing Research, 31, 214-228.

Brudvig, Susan and Pushkala Raman (2006), "The Impact of Fit and Goal Congruency on Consumers' Attitude to Brand Extensions," Marketing Management Journal, 16 (2), 171-178.

Churchill, Jr., Gilbert A. and Dawn Iacobucci (2002), Marketing Research: Methodological Foundations. Orlando, Florida, Harcourt, Inc.

Dawar, Niraj (1996), "Extensions of Broad Brands: The Role of Retrieval in Evaluations of Fit," Journal of Consumer Psychology, 5 (2), 189-207.

Dawar, N., & Pillutla, M. N. (2000). Impact of product-harm crises on brand equity: The moderating role of consumer expectations. Journal of Marketing Research, 37, 215–226.

Del Vecchio, Devon and Danile C. Smith (2005), "Brand-Extension Price Premiums: The Effects of Perceived Fit and Extension Product Category Risk," Journal of the Academy of Marketing Science, 33(2), 184-196.

Desai, Kalpesh Kaushik and Kevin Lane Keller (2002), "The Effects of Ingredient Branding Strategies on Host Brand Extendibility," Journal of Marketing, 65, 73-93.

John, Roedder Deborah, Barbara Loken, and Christopher Joiner (1998), "The Negative Impact of Extensions: Can Flagship Products Be Diluted?" Journal of Marketing, 62 (January), 19-32.

Judd, Charles M., Roger A. Drake, James W. Downing, and Jon A. Krosnick. (1991), "Some Dynamic Properties of Attitude Structures: Context-induced Response Facilitation and Polarization," Journal of Personality and Social Psychology, 60, 193-202.

Keller, Kevin Lane and David A. Aaker (1992), "The Effects of Sequential Introduction of Brand Extensions," Journal of Marketing Research, 29 (February), 35-50.

Klink, Richard R. and Daniel C. Smith (2001), "Threats to External Validity of Brand Extension Research.," Journal of Marketing Research, 38 (3), 326-335.

Loken, Barbara and Deborah John Roedder (1993), "Diluting Brand Beliefs: When Do Brand Extensions Have a Negative Impact?" Journal of Marketing, 57 (3), 71-84.

Mandler, George (1982), "The Structure opf Value: Accounting for Taste," in Affect and Cognition: The 17th Annual Cargenie Symposium, Fiske Margaret S. Calrk and Susan T (Ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Martindale, Collin (1991), Cognitive Psychology:A Neural-Network Approach. Belmont, CA: Cole Publishing Co.

Martinez, Eva and Jose' M. Pina (2003), "The Negative Impact of Brand Extensions on Parent Brand Image," Journal of Product & Brand Management, 12 (7), 432-448.

Meyers-Levy, Joan (1989), "The Influence of a Brand Name's Association Set Size and Word Frequency on Brand Memory," Journal of Consumer Research, 16 (September), 197-207.

Meyvis, Tom and Chris Janiszewski (2004), "When Are Broader brands Stronger Brands? An Accessibility Perspective on the Success of Brand Extensions," Journal of Consumer Research, 31 (September), 346-357.

Nakamura, Glenn V. and Author C. Graesser (1985), "Memory for Script-typical and Script-atypical Actions: A Reaction Time Study," Bulletin of the Psychonomic Society, 23 (4), 384-86.

Nelson, Douglas L, Maria T. Bajo, and Diane Casanueva (1985), "Prior Knowledge and Memory: The Influence of Natural Category Size as a Function of Intention and Distraction," Journal of Experiemental Psychology Learning,Memory, & Cognition, 11 (1), 94-105.

Nelson, Douglas L, Thomas A Schreiber, and Cathy L. McEvoy (1992), "Processing Implicit and Explicit Representations," Psychological Review, 99 (2), 322-348.

Park, C. Whan, Sandra Miberg, and Robert Lawson (1991), "Evaluation of Brand Extensions: The Role of Product Feature Similarity and Brand Concept Consistency," Journal of Consumer Research, 18, 185-193.

Romeo, Jean B. (1991), "The effect of Negative Information on the Evaluations of Brand Extensions and the Family Brand," Advances in Consumer Research, 18, 399-406.

Srinivasan, Narasimhan and Brian T Ratchford (1991), "An Empirical Test of an External Search for Automobiles," Journal of Consumer Research, 18 (September), 233-242.

Tabachnick, Barbara G. and Linda.S. Fidell (1996), Using Multivariate Statistics (3 ed.). New York: Harper Collins.

Till, Brian D. and Terrence A. Shimp (1998), "Endorsers in Advertising: The Case of Negative Celebrity Information," Journal of Advertising, 27 (1), 67-82.

Viswanathan, Nanda K. (1997), "An Anchoring and Adjustment Model of Brand Extension Effects On the Core Brand," The Ohio State University.

Weber, Renee and Jennifer Crocker (1983), "Cogntive Processes in Revision of Stereotypic Beliefs," Journal of Personality and Social Psychology, 45 (November), 961-77.

Yi, Youjae (1991), "The Influence of Contextual Priming on Advertising Effects," in Advances in Consumer Research, R.H. Holman and M.R. Solomon (eds), Vol. 18, 417-425.

Yoon, Doyle (2003), "The Effect of Web-Based Negative Information on Brand Attitude," Unpublished doctoral dissertation, University of Missouri.