Decoy Effects and Brands

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ABSTRACT

The relative preference for a target product over a competitor can be increased by providing a third alternative (a decoy) that is clearly inferior to the target but is not necessarily inferior to the competitor. We investigated how these "decoy" effects are influenced by the presence or absence of brand name information and the level of consumer brand knowledge. A field experiment was conducted with three hundred and twenty married females. Results indicated that overall, inclusion of a decoy in the choice set significantly increased the relative preference for the target (i.e., a decoy effect). However, identifying alternatives with real brand names eliminated this effect when participants possessed an extensive amount of knowledge about the brands, but it did not when participants had relatively limited knowledge. These results were generally consistent with implications of the category-based processing view about brand name information.

INTRODUCTION

The decoy effect (or attraction effect) refers to a possibility that adding a new alternative in the choice set increases the choice for one of the existing alternatives that dominates the new one. This effect, which was first identified by Huber, Payne, and Puto (1982), has been replicated in a wide variety of choice situations involving not only commercial products (Ariely & Wallsten, 1995; Dhar & Simonson, 2003; Pettibone & Wedell, 2000; Sen, 1998; Simonson, 1989), but also gambling (Wedell, 1991), jobs (Highhouse, 1996) and political candidates (Pan, O'Curry, & Pitts, 1995). The cognitive processes that potentially underlie these effects have also been extensively investigated (i.e., Dhar & Glazer, 1996; Park and Kim 2005; Pettibone & Wedell, 2000; Shafir, Simonson, & Tversky, 1993; Wedell & Pettibone, 1996).

Most of the past research, however, has investigated the decoy effect in situations under which no real brand names were given. That is, participants typically received attribute information about a target, a competitor, and a decoy that were denoted only by hypothetical brand names or simple letters (e.g., Brand A, B, C). Presumably, these participants had to choose among them, or evaluate each alternative only based on the externally available product information. The decoy effect was then claimed to be evidenced if the preference for the target (relative to the competitor) increased when the decoy was present compared to than when it was not. In the real world, however, there are only rare situations in which consumers compare alternatives without knowing their brand names. Moreover, the literature has shown that brand names can exert distinct influences on cognitive processes underlying consumer judgments and choices. Thus, the effects of a decoy might turn out quite differently in terms of magnitude and/or direction if brand names are provided along with specific product information. The present research intended to provide insights into this matter.

THEORETICAL BACKGROUND

Suppose there are two competing brands in the market: a target (T) and a competitor (C) as in Table 1. The attribute configurations indicate a trade-off: the target is superior to the competitor on dimension 1 but inferior on dimension 2. Consider that a third alternative (D) is also available, one that is clearly inferior to the target but not to the competitor. Adding D (a decoy) in the consideration set is likely to increase preferences for T (i.e., decoy effects). Now suppose that the three products are not only described using the attributes but also explicitly identified by real brand names such that T and C are competing brands but T and D are of a same brand (see Table 1). How then would the brand names influence participants' decisions regarding the alternatives? According to the literature on brand name effects, there seem to be at least two distinct possibilities. First, a brand name can serve simply as another piece of attribute information about the alternative. In this case, the evaluative implication of the brand name might be incorporated with implications of the other information into overall evaluations of the product in an averaging fashion (hereafter, "averaging process view"). Second, a brand name can be more than just an attribute. That is, it can serve as a distinctive cue activating a brand schema or category from memory, thus inducing category-based processes during judgment formation. In this case, providing a brand name might systematically influence the amount or direction of cognitive processes of the other information (hereafter, "category-based process view"). Both views predict a general decrease in the magnitude of the decoy effects when real brand names are available. However, they make different predictions regarding how the level of consumer brand knowledge would interact with the brand names. These are elaborated in turn below.

Averaging Process View

The way in which individual informational items are integrated into an overall judgment of the target is well articulated by the information integration theory (Anderson 1971, 1981). It assumes the evaluation of alternatives as a function of individual informational items about the target object. Further, it posits the "averaging model" which assumes that each attribute's importance is adjusted according to the weight of the other attributes being considered (e.g., Anderson 1971; Birnbaum & Mellers 1983). If so, adding new information is likely to reduce the impact of the existing information on overall judgments about the target. It follows that providing real brand names along with attribute information about alternatives is likely to decrease the impact of the latter information on overall evaluations. Since the decoy effect occurs due to specific attribute configurations of the existing and new alternatives (e.g., Wedell and Pettibone 1996; Pettibone and Wedell 2000), adding brand names is likely to reduce the magnitude of the decoy effects. Further, this should occur regardless of the level of knowledge that participants have accumulated about the brands. People certainly differ in terms of extensiveness of product knowledge. Thus, upon exposure to a same brand, different people will activate different memory associations that might have different evaluative implications about the brand. However, the activated brand knowledge would still weaken the impact of the attribute information on judgments of the alternatives, regardless of the specific nature of the implications of it. This can be formally stated in the hypothesis below.

Hypothesis (averaging process view): The effect of a decoy will be reduced or eliminated when real brand names are provided along with attribute information about choice alternatives. Moreover, this will occur regardless of the level of consumer brand knowledge.

Category-based Process View

Consumer researchers have also identified an alternative way of forming product judgments, i.e., category-based processing (e.g., Meyers-Levy and Tybout 1989; Rao and Monroe 1988; Sujan 1985; Sujan and Dekleva 1987). Further, it has been shown that a brand name can serve as a category label and thus lead to a category-based evaluation (e.g., Aaker and Keller 1990; Maheswaran, Mackie and Chaiken 1992; Sujan and Bettman 1989). The category-based product judgments have been typically conceptualized with reference to dual processing formulations of impression formation (see Fiske, Lin and Neuberg 1999; Fiske and Neuberg 1990). According to the formulations, perceivers first attempt to categorize an object on the basis of available cues that might signal a particular social category to which it belongs. The affect or the evaluations associated with the category are then transferred to the object and serve as a basis for evaluating it without engaging in a detailed analysis of additional features or individuating information. Further, perceivers may engage in relatively elaborative processing of individuating information. However, this additional process is usually confirmatory in nature, i.e., to preserve the initial categorization, and also largely dependent upon the level of personal relevance of the evaluation object for the perceivers and their ability to process the additional information.

One obvious implication of the categorization literature for decoy effects is that providing brand names would induce a category-based processing, thus reducing the impact of individuating information of alternatives on preference construction. Therefore, the effect of a decoy on preference for the target is likely to be reduced or eliminated when brand names are available. On the other hand, the existing literature on consumer knowledge suggests that consumers with high knowledge usually have previously-formed evaluations of various brands, hold strong confidence with their evaluations, as well as possess detailed information about the brands. Furthermore, it has been shown that category-based processing tends to be even more pronounced when stereotypes or category schema in memory are strong rather than weak (e.g., Fiske 1982). Therefore, decisions by high knowledge consumers might be quite independent of the specific information that is externally available on the spot. Consequently, the negative influence that providing real brand names might have on the magnitude of decoy effects is likely to be the case, particularly for participants with extensive brand knowledge. In contrast, consumers with limited knowledge usually do not have a strongly-held prior evaluation about products. Therefore, their decisions might have to be constructed on the spot, mainly based on the externally provided information. Thus, attribute configurations of a decoy can come easily into play.

The categorization literature also suggests a possibility that attribute information about alternatives can be actively processed even if brand information is available. In this case, however, the attribute information is typically processed in accordance with implications of the existing schema in memory. It is particularly so when the schema or category stereotype is strongly held (e.g., Maheswaran 1994; for more theoretical processes see Fisk and Neuberg 1991). If so, we can expect that providing real brand names is likely to reduce decoy effects, particularly for the high knowledge consumers. This prediction also seems to be in line with the previous finding that decoy effects may not be observed when the information about alternatives is rich and meaningful to consumers (Ratneshwar, Shocker, and Stewart 1987), when we consider another previous finding that attribute information is more meaningfully encoded when brand information is available (e.g., Maheswaran 1994; c.f., Hong and Wyer 1990). In sum, the above considerations suggest that providing real brand names is likely to reduce decoy effects, particularly for high knowledge consumers. This can be summarized into the hypothesis below:

> *Hypothesis (Category-based process view)*: The effect of a decoy will be reduced or eliminated when real brand names are provided along with attribute information about choice alternatives. However, this is more likely to occur for participants with a high level of brand knowledge than for those with limited knowledge.

EXPERIMENT

A field experiment with married females was conducted to test the implications of the averaging process view vs. the category-based process view. To do so, we provided participants with information about a target (T) and a competitor (C), which was either accompanied by information about a decoy (D) or not. In addition, in some cases, real brand names were used to identify the alternatives: T and C were two competing brands in the market, whereas T and D were the same brand. In other cases, simple letters (e.g., A and B) denoted alternatives instead. Then, attractiveness ratings of each alternative and the preference were measured.

Participants and Design

Three hundred and twenty married females in a metropolitan city participated in the study. They were randomly assigned to each cell of a 2 (*decoy* conditions: no-decoy vs. decoy) x 2 (*brand name* conditions: no-brand vs. real-brand). Later, these participants were divided into two groups of brand knowledge (high vs. low). A median split was used for this division based on the measured knowledge scores regarding the target product category in the market. Therefore, the study involved a 2 x 2 x 2 between the subject factorial design.

Stimulus Material

The stimulus materials we presented are summarized in Table 1. That is, the target product (T) was a refrigerator that had fast freezing time but moderately high operating cost, whereas the competitor (C) was a refrigerator that had slow freezing time but low operating cost. The decoy (D) had virtually the same (fast) freezing time as the target but much higher operating cost than either the target or the competitor. Therefore, the decoy was dominated by the target but not by the competitor. In addition, simple letters (A and B) were used to identify the alternatives for no-brand name conditions, whereas the real (famous) brand names were used for real-brand name conditions.

Procedure

The survey was administered by a professional survey organization. The data were collected through face-to-face interviews with individual respondents, assisted by a structured questionnaire. All interviewers were highly experienced and well trained regarding the purpose of the survey and the contents of the questionnaire.

The participants were told that we were concerned with how consumers make judgments on the basis of limited information. They were told that they would be asked to consider several alternative refrigerators, each of which would be described along two dimensions. They were also told to assume that they were actually going to visit an electric appliance shop. They were then presented with product information about choice alternatives.

Participants first reported their preferences. They then evaluated each refrigerator along a scale from 1 (unattractive) to 10 (attractive). In addition, they evaluated the desirability of the

TABLE 1
Attribute Values of Choice Alternatives, Stimulus Materials

	Refrigerator alternatives		
	Competitor (C)	Target (T)	Decoy (D)
Relative attractiveness			
Dimension 1	2	4	4.1
Dimension 2	4	2	1
Stimulus Material			
Freezing time (min)	25	10	9
Running Cost	$49	$56	$69
Brand	Brand A	Brand B	Brand B

alternatives along each dimension individually along scales from 1 (not good) to 7 (good). Finally, they indicated their subjective knowledge about refrigerator types and characteristics along a scale from 1 (I do not know about it better than the others) to 7 (I know about it better than the others).

Results

To reiterate, it was expected that overall, the effect of a decoy would be reduced or eliminated when real brand names are provided along with attribute information about choice alternatives. Further, the averaging process view predicted that such reduction is likely to occur regardless of the brand knowledge levels, whereas the category-based process view predicted that it is more likely to be the case for participants with extensive rather than limited brand knowledge.

In order to examine these predictions, we analyzed the overall attractiveness ratings data (for each alternative) and the choice data. Mean attractiveness ratings and percentages of participants who chose the target are summarized in Table 2 as a function of *decoy* (no-decoy vs. decoy) and *brand name* (no-brand vs. real-brand) and *brand knowledge* (high vs. low). We now present results from the two types of data separately.

Attractiveness ratings. Separate ANOVAs with decoy, brand name, and brand knowledge as between-subject factors were conducted on evaluations of T and evaluations of C. As apparent in Table 2, evaluations about the competitor did not vary significantly across experimental conditions, all *p*'s>.10. However, the evaluations of the target systematically varied over the conditions.

First, the ANOVA on evaluations of T yielded a significant interaction effect of *brand name* and *decoy*, $F(1, 316)=9.80$, $p<.01$. As expected, the evaluation of T in no-brand name conditions increased significantly when the decoy was available (6.38) as compared to when it was not (5.31), $F(1,158)=22.58$, $p<.01$. By contrast, this was not the case in the real-brand name conditions (6.81 vs. 6.69), $F(1,158)=0.07$, $p>.10$.

Second, the two-way interaction effect between *decoy* and *brand name* was qualified by *brand knowledge*, $F(1, 312)=4.77$, $p<.05$. Subsequent analyses indicated that for the low-knowledge group, there was a significant main effect of a decoy on evaluations, $F(1, 118)=13.11$, $p<.01$, which was not contingent upon the brand name conditions (no-brand name vs. real-brand name), $F(1, 118)<1$. For the high-knowledge group, however, the interaction between *brand name* and *decoy* was significant, $F(1, 194)=13.55$, $p<.01$. The target was evaluated more favorably in the decoy conditions than in the no-decoy conditions (6.36 vs. 5.37) when no real brand names were used, but the pattern was reversed when real brand names were available (7.22 vs. 6.52). This pattern of results was more consistent with the implications of the category-based processing view.

Choices

Results from the choice data were quite similar to those from the attractiveness ratings data. Since the choice data was categorical in nature, we used a binary logistic regression to analyze it as a function of consumer knowledge, decoy condition, and brand name condition.

First, there was a significant interaction of *brand name* and *decoy* (B=-.980, Wald=3.98, $p<.05$). Specifically, proportions of participants who chose the target were higher in the decoy conditions (.388) than in the no-decoy conditions (.175), $z=3.10$, $p<.01$ when no real brand names were available. However, this difference was negligible (.500 vs. .525), $p>.10$, when real brand names were provided.

Different patterns of results, however, emerged when the level of brand knowledge was considered. In the low-knowledge group, the decoy significantly increased the choice of the target (.208 vs. .536), (B=-1.46, Wald=6.03, $p<.05$), which was not contingent upon the no-brand name vs. real-brand name conditions (B= -0.02, Wald=0.01, $p>.10$). In the high-knowledge group, by contrast, there was a significant two-way interaction of *brand name* and *decoy* (B=-1.31, Wald= 4.26, $p<.05$). Further analyses indicated that the decoy effect was significant only in the no-brand name conditions (.333 vs. .184), $z=1.80$, $p=.07$, whereas in the real-brand name conditions, the decoy had no effect on choices (.457 vs. .586), $z=1.09$, $p>.10$. In sum, these results were generally consistent with the implications of the category-based processing view.

DISCUSSION

In this paper, we investigated the role of brand names in the effect of a decoy on preference construction. The averaging view and category-based processing view were considered to make predictions. Both views predict a general reduction in the decoy effect if the real brand names are provided along with attribute information about choice alternatives. On the other hand, the two views make different predictions regarding the moderating role of

TABLE 2

Relative Attractiveness Ratings and Choice of Target as a Function of Decoy Type, Brand Name, and Brand Knowledge

	No brand name		Brand name	
	No-decoy	Decoy	No-decoy	Decoy
Attractiveness ratings of each alternative				
Target (T)				
Low knowledge group	5.23	6.40	5.73	6.91
High knowledge group	5.37	6.36	7.22	6.52
Total	5.31	6.38	6.81	6.69
Competitor (C)				
Low knowledge group	6.55	6.34	6.82	6.50
High knowledge group	6.37	6.76	6.52	6.91
Total	6.44	6.58	6.60	6.74
Proportions participants choosing target				
Low knowledge group	.161	.457	.273	.618
High knowledge group	.184	.333	.586	.457
Total	.175	.388	.500	.525

consumer brand knowledge. That is, the category-based processing view predicts a significant moderating role of brand knowledge (i.e., a significant reduction of decoy effects by presenting real brand names only for high brand knowledge conditions), but the averaging view predicts no such role.

Results from a field experiment supported the category-based processing view. Specifically, both attractiveness ratings and choices data revealed that providing real brand names eliminated the decoy effects only when participants possessed extensive knowledge of various brands in the market.

In addition, in the brand and decoy condition and for high-knowledge consumers, we actually found that the target share or evaluation was reduced in the decoy condition. This surprising opposite pattern for a decoy effect could be explained by the role of "persuasion knowledge" in a context effect (Friestad and Wright 1994). That is, consumers who are knowledgeable about a product category are also likely to be equipped with a substantial amount of persuasion knowledge. When an inferior decoy product has the same brand as the target product, these consumers would activate their persuasion knowledge and infer a negative motive about that brand. This will lead to no effect or even a negative effect of the decoy.

This study has several limitations that suggest the direction for future studies. First, in this study we did not include any measures or methods to further explore the underlying mechanisms (such as "averaging view" and "category-based processing view"). Second, we need more concrete evidence for explaining the unexpected decoy effect for high-knowledge consumers in the brand and decoy condition. Finally, our study focused only on the presence or absence of brand name information, and used the same brand for the target and decoy product. In future research, we can systematically vary the strength of, as well as location of, brands in the set to further enhance our understanding about the role of brands in the decoy effects.

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