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Processing Product Unique Features: Alignability and Involvement in Preference Construction

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Consumers often form preferences based on the presented attributes of choice options. Previous research has suggested that consumers tend to form their preferences using the attributes that are related to common aspects between the options (i.e., alignable differences) and ignore attributes that are unique to individual options (i.e., nonalignable differences). We combine cognitive psychology and motivation research from social psychology and propose that consumers' preference formation can be systematically affected by whether they focus more on alignable differences or more on nonalignable differences of the options as a function of consumers' involvement with the task. The results of 3 experiments show that preference judgment favors alignable differences over nonalignable differences in a low-motivation condition. In contrast, high motivation to process information enables consumers to increase their use of nonalignable differences in preference formation, which can result in a preference reversal relative to the low-motivation condition. The results suggest that a preference reversal occurs when the nonalignable differences of the target option are superior to both the nonalignable differences and the alignable differences of the reference option. However, the reversal does not occur when the nonalignable differences of the target option are superior only to the nonalignable differences of the reference option. Theoretical and managerial implications relating to differentiation, positioning, and communication strategies for innovative brands are discussed.

In research on consumer-preference formation and choice, a common task is to present participants with descriptions of the attributes of a set of choice options and to ask them to make a decision (e.g., by expressing preferences on a scale or by choosing an option). This stream of research suggests that people represent the attributes of the options and compare them to determine their preference ordering (for a review, see Bettman, Johnson, & Payne, 1991; Simonson & Tversky, 1992). For this reason, it is critical to understand how comparisons influence the information used in a choice and how the comparison process interacts with situational factors to affect preferences. In this article, we explore the cognitive psychology-based structural alignment view of similarity for preferences formed during comparison and incorporate motivation research from social psychology to examine how this process is affected by one situational variable (i.e., differences in the degree of involvement of the consumer with the preference formation task).

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CONCEPTUAL BACKGROUND

The Nature of Differences

For many years, the dominant model of comparison in psychology was Tversky's (1977) contrast model, which was initially designed to account for judgments of similarity. This model assumes that people represent information about an object (like the attributes of an option) as a set of features. The sets of features representing each option can be compared by finding their intersection. Those features in the intersection are the commonalities of the pair, and those features not in the intersection are the differences. Many studies have explored predictions of this feature comparison process for decision

making (e.g., Houston, Sherman, & Baker, 1989, 1991; Sanbonmatsu, Kardes, & Gibson, 1991; see also Chernev, 1997; Dhar & Sherman, 1996). For example, because the differences of a pair of options, not the commonalities, are the determinants of choices, those differences of the focal (or comparing) option should draw more attention and carry more weight in judgments than those in the nonfocal option (Houston et al., 1989, 1991; Tversky, 1977).

Interestingly, this direction-of-comparison effect was found to depend on the nature of the differences involved in the comparison. The effect was observed when the differences of the options came from different dimensions (i.e., when they were unique or noncomparable differences) but not when the differences occupied different points on the same dimension (i.e., when they were comparable differences; Sanbonmatsu et al., 1991). Similarly, people making judgment predictions about options tended to focus on dimensions with values for all of the options rather than by dimensions unique to a single option (Slovic & MacPhillamy, 1974). Although the differential influence of these types of differences has been noticed, models of similarity like the contrast model do not have a straightforward mechanism for explaining this effect. Recent studies of similarity in cognitive psychology have developed an alternative model of the similarity comparison process called structural alignment that goes beyond the feature-based contrast model to account for a number of additional phenomena, including the nature of differences (for a review, see Gentner & Markman, 1997).

Similar to the contrast model, structural alignment assumes that identical elements in the representations of a pair of items are the commonalities of the objects. Structural alignment differs from the contrast model in its treatment of differences. It assumes that object representations contain explicit relations among properties. The same relation may appear in the representations of two objects but may relate different aspects of each object. For example, imagine two brands of microwave popcorn (objects), one of which pops in a bag (a property) and the other of which comes with a special microwave bowl (a different property). Each of these properties serves the function of providing a container to pop the popcorn (a relation), although they are clearly different types of containers (aspects). The structural alignment view assumes that people will notice the commonality that both have types of containers to pop the popcorn, which will lead the different types of containers to be placed in correspondence. A difference that arises from the way the items are placed in correspondence is called an alignable difference. Alignable differences can arise in many ways, including cases in which aspects of each item are placed in correspondence on the basis of some matching relation between the objects (as in the example just described) as well as cases in which the corresponding elements occupy different points on the same dimension.

Alignable differences can be contrasted with nonalignable differences, which are aspects of one item that have no corresponding element in the other. For example, one brand of popcorn might be known to contain citric acid. If citric acid is not mentioned for the other brand, then there is an element in one brand that has no corresponding element in the other brand. In this case, the property "has citric acid" is a nonalignable difference. The distinction between alignable and nonalignable differences is psychological. For any given property of one item, if a particular person finds a corresponding property of the other item, then it will be treated as an alignable difference. Otherwise, it will be treated as a nonalignable difference.

Notice again that nonalignable differences are defined broadly and can be interpreted in the context of features either as a feature mentioned in one option but not in the other (e.g., missing information about features) or as a feature uniquely associated with only one of the options (e.g., unique features). Some of the existing work on inference making deals with missing feature information (e.g., Huber & McCann, 1982; Johnson & Levin, 1985; Meyer, 1981; Ross, William, & Creyer, 1992; Sanbonmatsu, Kardes, Posavac, & Houghton, 1997; Simmons & Lynch, 1991). Other work focuses on the role of unique features in preference and choice (e.g., Dhar & Sherman, 1996; Houston et al., 1989, 1991; Sanbonmatsu et al., 1991; Tversky & Gati, 1982).[1] For the specific research issue in this article, we do not make an empirical distinction between these differences because we assume that by virtue of being noncomparable both should be similarly influenced by the variable of task involvement.

Predictions of Structural Alignment and Their Limitations

The structural alignment model of similarity assumes that the comparison process determines the commonalities and alignable differences of a pair of objects (Gentner & Markman, 1997; Markman & Genter, 1993a, 1993b). Nonalignable differences are not part of the output of comparison because they are not related to the commonalities of the pair. Thus, the model predicts that alignable differences will be given more attention than nonalignable differences in comparison tasks. Consistent with the importance of alignable differences to comparison, many studies of judgment and choice have suggested that alignable differences are more focal than nonalignable differences. For example, Slovic and MacPhillamy (1974) found that people making predictions tended to focus on dimensions with values for all of the options (i.e., alignable differences) rather than on dimensions unique to a single option (i.e., nonalignable differences). In a choice justification task, Markman and Medin (1995) found that people justified their choices using alignable differences of the options rather than nonalignable differences. Finally, in a brand learning and memory-based preference formation task, Zhang and Markman (1998)

[1]Some of the authors may have used the term *unique features* to mean missing feature information. However, we cited these works as examples of intending to use the concept of unique features not as missing feature information, but as features being uniquely associated with only one option. For example, the amenities uniquely associated with some apartments are not associated with other apartments.

found that people were more likely to learn attributes of newly presented options and use those attributes to form preferences when they were alignable differences with the known options than when they were nonalignable differences.

Nonalignable Differences and Motivation to Process Information

The results just described suggested that people's preference judgments focus primarily on the alignable differences of options. Thus, new brands that are intended to compete with existing brands should first and foremost excel on the alignable differences with the existing brand and have nonalignable differences cast as alignable differences through the phrasing of the comparison with existing products. Various real-world product examples support this insight (e.g., Schnaars, 1994). However, products are also differentiated, advertised, and highlighted by nonalignable differences, and consumers often do use nonalignable differences of the options when forming preferences. Consequently, it is important, both theoretically and managerially, to understand when and how nonalignable differences play a role in consumer-preference formation.

The structural alignment view described previously makes the prediction that nonalignable differences are generally ignored. A strong interpretation of this prediction is that under no circumstances will nonalignable differences play a role in preference formation. A weak interpretation of the prediction is that the model makes no prediction as to when nonalignable differences play a role and how other contextual variables may moderate the alignability effect in consumer-preference formation. Our studies address these questions by incorporating the contextual variable of involvement as a moderating factor. Involvement in the task is used because it influences consumers' motivation to process information and, therefore, their processing effort during the comparison process. Nonalignable differences require more processing effort relative to alignable differences for (at least) two reasons: (a) They are difficult to compare and perceived to provide less amount of information relevant for making trade-offs (Zhang & Fitzsimons, 1999), and (b) they must be evaluated on an absolute scale rather than on a relative scale (Hsee, 1996).

Involvement can be defined as personal relevance (e.g., Petty, Cacioppo, & Schumann, 1983) or an individual's subjective feeling of the importance of the judgment process or importance of the object about which judgment is being made (e.g., Mantel & Kardes, 1999). Previous research has suggested that involvement increases motivation to process information and distinguishes involvement from ability/opportunity (e.g., comprehension, and lack of distraction or time pressure) to process available information (e.g., Fazio, 1990; Petty & Cacioppo, 1986). Both involvement and ability/opportunity are likely to moderate the effect of alignability. In particular, effortful, careful, and detailed information processing should occur when both involvement and ability/opportunity are high. Nonalignable differences of a pair of options suggest attribute noncomparability and may cause consumers to be sensitive to missing or incomplete information. As a result, consumers may attempt to resolve feature noncomparability and trade-off difficulty—a process that seems to require processing effort and motivation to process information and presumes the ability/opportunity to recognize features as nonalignable differences. We therefore choose to investigate involvement with the task—motivation to process the information and form preferences, given the ability/opportunity (e.g., Johar, 1995; Kardes, 1988; MacInnis & Park, 1991; Maheswaran & Meyers-Levy, 1990).

Many studies have demonstrated that people process information more thoroughly with higher levels of involvement (e.g., Celsi & Olson, 1988; Maheswaran, Mackie, & Chaiken, 1992). In a judgment task, consumers with a higher level of involvement are more likely to consider and evaluate all attributes during the comparison process to form a preference. Thus, we suggest that those who are highly involved with the task will be more likely to seek out information beyond the alignable differences that are normally promoted by the comparison process. Thus, nonalignable differences, which are not the focus of comparisons and are more difficult to process, will have a greater tendency to enter into preference judgments formed by highly involved consumers. In contrast, consumers who are not highly involved are more likely to focus on easily available cues that allow them to form preferences with less effort. Because alignable differences are highlighted by the comparison process and thus are easy to process, consumers who are not highly involved will focus primarily on alignable differences and ignore nonalignable differences.

Experimental Tests of Involvement, Alignment, and Preference Formation

We present three studies that explore the interaction between involvement and alignment in preference formation. In these studies, participants are presented with two fictitious brands of microwave popcorn, such as those shown in Table 1. We selected microwave popcorn for two reasons. First, it is a product class in which consumers generally show less involvement and consider selecting a brand an ordinary routine decision. Popcorn is also representative of consumer products that the target population (college students) has purchased. Second, there are few brands in this product class that are strongly identified with particular clusters of features.

Each brand is described by 12 attributes. Of these, 4 are commonalities, 4 are alignable differences, and 4 are nonalignable differences. The alignable differences are pretested to be properties for which people could find the corresponding attribute for the other brand. The brands are constructed so that one brand, Brand P (the alignable-better brand), has superior alignable differences to the other brand, but inferior nonalignable differences to it. For this reason, we refer to the second brand, Brand Q, as the nonalignable-better brand. The brands are presented together on a sheet of paper, and participants are asked to rate the importance of the attributes of the brands (as described next) to get them to process the attributes. Then, after a short delay, partici-

TABLE 1
Stimulus Brands Organized by Attribute Types for Experiments 1 and 2

Brand P[a]	*Brand Q*[b]
Commonalities	
Low cost per serving	Low cost per serving
Low level of sodium	Low level of sodium
Not salty	Not salty
Easy to prepare	Easy to prepare
Alignable differences	
Large-size kernels	Medium-size kernels
Pops in its own bag	Requires a microwave bowl
Calories equal to a slice of bread	Calories equal to a tablespoon of sugar
Crunchiness lasts long	Crunchiness lasts for 3 hr
Nonalignable differences	
Slightly low in corn and grain flavor	Easy to swallow
Tastes a bit sweet	Not likely to burn
Has some citric acid	Not tough
With waterproof wrapping	Kind of crispy

Note. A fixed order of attributes was used for the actual stimulus brands. This fixed order was determined by a random ordering of the attributes for one brand and matching of the attributes for the other brand.
[a]Alignable-better brand. [b]Nonalignable-better brand.

pants are asked to recall as many attributes of the brands as they can and to assess their preference for the brands. They are also asked to give a retrospective protocol of their thoughts during the preference judgment task.

This procedure is explored in Experiment 1. We expect that, in general, participants who are presented with these two brands will compare the attributes and form preferences by focusing primarily on alignable differences rather than nonalignable differences (e.g., Slovic & MacPhillamy, 1974). This pattern is one we think is typical of low-involvement participants:

H1a: The alignable-better brand will be preferred to the nonalignable-better brand.

To explore the underlying mechanism involved in this preference judgment, we examine the thoughts that participants list as justifications for their preferences. If participants indeed focus more on alignable differences than on nonalignable differences during comparison and preference formation, then differences should be revealed by the listed thoughts for the decisions. We test this possibility by counting the number of thoughts specifically expressed about alignable differences and nonalignable differences for each participant, and predict the following.

H1b: The preference judgments will be justified primarily by alignable differences.

We also explore a third issue with these studies. In our previous work, we found that participants' preference judgments were related to the number of alignable and nonalignable differences of the products that participants were able to recall (which was assumed to be a reflection of what they learned; Zhang & Markman, 1998). In those studies, participants learned the brands sequentially across sessions separated by up to 1 week. Thus, they could not form relative preferences for the brands until after all the brands had been presented. According to the analysis by Hastie and Park (1986), this type of preference judgment should have been made from representations of the options stored in memory. The results of our studies were consistent with this view. In the studies presented here, however, the brands are presented simultaneously, so preferences can be formed on-line for the presented options. Thus, participants need not use the information that they can recall to form preferences (e.g., Biehal & Chakravarti, 1986; Hastie & Park, 1986):

H1c: For the task of forming preferences for simultaneously presented options, the properties that can be recalled will be a poorer predictor of preference judgments than will the properties mentioned in the preference justifications.

In Experiments 2 and 3, we manipulate participants' degree of involvement through the instructions they are given. One half of the participants will be put in a low-involvement condition, and the other half will be placed in a high-involvement condition (we describe the instructional manipulation in detail next). In Experiment 2 (as in Experiment 1), the brands are designed so that the average attractiveness of the attributes of the alignable-better brand is the same as the average attractiveness of the attributes of the nonalignable-better brand. This design is accomplished via a pretest by ensuring that the attractiveness of the alignable differences of the alignable-better brand is equal, on average, to the attractiveness of the nonalignable differences of the nonalignable-better brand. Given this configuration of attributes, participants in the low-involvement condition should act in accord with H1a and H1b, preferring the alignable-better brand to the nonalignable-better brand. In contrast, in the high-involvement condition, participants should make more use of the nonalignable differences than should participants in the low-involvement condition and therefore find both options similarly attractive. As a result, we predict the following:

H2a: For high-involvement participants, the alignable-better option will no longer be preferred.
H2b: For high-involvement participants, the thoughts listed for the preference judgments will contain both alignable differences and nonalignable differences, the latter of which plays a more significant role.

An interesting possibility based on the reasoning leading to H2a and 2b is that participants' preferences for a pair of options may depend on the attractiveness of the nonalignable differences of the nonalignable-better brand relative to the attractiveness of the alignable differences of the alignable-better brand. Specifically, a preference reversal may occur under

conditions in which the nonalignable-better brand has nonalignable differences that are so attractive that they make the nonalignable-better brand more attractive overall than the alignable-better brand. We tested this possibility in Experiment 3 by giving the nonalignable differences of the nonalignable-better brand attributes that are much more attractive than the alignable differences of the alignable-better brand. Given this design, participants in the low-involvement condition should prefer the alignable-better brand (in accordance with H1a and H1b), even though it is now objectively less attractive than the nonalignable-better brand. In contrast, participants in the high-involvement condition, who are predicted to make use of the nonalignable differences to a greater degree than participants in the low-involvement condition, should actually prefer the nonalignable-better brand to the alignable-better brand:

H3: For high-involvement participants, the nonalignable-better option will be preferred to the alignable-better option when the nonalignable differences of the nonalignable-better option are more attractive than the alignable differences of the alignable-better option.

EXPERIMENT 1

Method

Participants and design. A total of 33 participants from the Columbia University community took part in the main study. They came to the lab in small groups and were paid for their participation. The design of the study was a 3 (types of attributes) × 2 (brands) within-subjects design. The dependent variables were attribute importance, recall, preference judgment, and thought listing (i.e., justification of the preference judgment).

Materials and pretest. Two brands of microwave popcorn (see Table 1), an alignable-better brand (Brand P) and a nonalignable-better brand (Brand Q) were created with three types of attributes (four commonalities, four alignable differences, and four nonalignable differences). Before the main study was conducted, an independent pool of 46 participants provided ratings of attractiveness (one half of the participants) and importance (the other one half) for 58 attributes. Based on the ratings, attributes were selected such that the following three criteria were met:

1. The alignable-better brand (Brand P) and the nonalignable-better brand (Brand Q) were equivalent in the overall favorability judgment given to them—that is, ratings of attractiveness ($M = 5.91$, $M = 5.99$, $t < 1$) and importance ($M = 5.40$, $M = 5.57$, $t < 1$).

2. The alignable differences of alignable-better brand received higher ratings ($M_{\text{Attractiveness}} = 6.20$, $M_{\text{Importance}} = 5.38$) than those of the nonalignable-better brand ($M_{\text{Attractiveness}} = 4.65$, $M_{\text{Importance}} = 4.56$), $t(22) = 5.52$, $p < .001$, for attractiveness and $t(22) = 2.20$, $p < .05$, for importance.

3. The nonalignable differences of the nonalignable-better brand received higher ratings ($M_{\text{Attractiveness}} = 6.50$, $M_{\text{Importance}} = 6.20$) than those of the alignable-better brand ($M_{\text{Attractiveness}} = 4.74$, $M_{\text{Importance}} = 4.36$), $t(22) = 4.72$, $p < .001$, for attractiveness and $t(22) = 3.79$, $p < .001$, for importance.

The pretest ratings for these attributes are shown in the Appendix.

Procedure. Participants were given booklets that contained instructions on the front page that informed them that they were participating in a study about brands of microwave popcorn. Inside the booklet, participants were shown the attribute descriptions of the two brands (which were labeled Brand P and Brand Q). The left–right order of the brands on the page was counterbalanced between participants. As an encoding task (and a check of stimulus construction) on the next page, participants were asked to provide importance ratings for each attribute in the descriptions. Participants were then asked to provide some demographic information and to assess their familiarity with the product and their frequency of use.

Participants were then told that they would participate in another study, after which they would return to the microwave popcorn study. After a delay of about 20 min, during which they performed an unrelated study, participants returned and provided responses to the dependent measures of recall, preference judgment, and thought listing. In the recall task, participants were asked to write down as much attribute information as they could remember for the two brands. In the preference judgment task, participants were asked to allocate 100 points across the two brands in proportion to their preference for the brands. Finally, participants were instructed to provide any and every thought or reaction they had while they were making the preference judgments. The entire experiment, including the unrelated task, took about 30 min.

RESULTS

Stimulus Construction Checks

Questions about the importance of each attribute were intended to induce the participants to study the attribute descriptions. Responses to these questions should reflect the importance ratings for the types of attributes used in the pretest. The mean importance ratings for each type of attribute were averaged across individual attributes. These ratings are shown in Table 2. As expected, participants provided higher importance ratings for the alignable differences of the alignable-better brand ($M = 5.97$) than of the

TABLE 2
Attribute Importance, Recall, Preference Judgment, and Thought Listing From Experiment 1

Dependent Measures	*Alignable-Better Brand*	*Nonalignable-Better Brand*	*Equal Preference*	*No. of Mentions*
Importance[a]				
Commonalities	6.38	6.36		
Alignable differences	5.97	5.51		
Nonalignable differences	4.51	6.42		
Recall				
Commonalities	0.54	0.44		
Alignable differences	0.56	0.57		
Nonalignable differences	0.36	0.17		
Preference				
Points allocations	55.87	44.12		
Number of people[b]	21	9	3	
Thought listing[c]				
Commonalities				0.79
Alignable differences				0.97
Nonalignable differences				0.30
Concern[d]				0.09
Others[e]				0.42

[a]The results were averaged across attributes within each type. [b]The number of people who give more points to the brand. [c]The number of mentions of types of attribute descriptions provided by the participants during the thought-listing task. [d]Examples of Concern include, "What is this about?," "I don't eat popcorn too much," and so forth. [e]Others stand for thoughts that did not belong to the previous four categories of responses, such as "My friend likes marshmallows" or "I like nonfat products."

nonalignable-better brand ($M = 5.41$), $t(32) = 1.69$, $p < .09$, and higher importance ratings for nonalignable differences of the nonalignable-better brand ($M = 6.42$) than of the alignable-better brand ($M = 4.51$), $t(32) = 5.27$, $p < .0001$. No differences in ratings were observed between the brands for the shared common features ($M = 6.38$ vs. $M = 6.36$).

Hypothesis Testing

Preferences. The data from Experiment 1 are summarized in Table 2. We assumed that the preference judgments are based on the information that emerges from a comparison of the brands. Because structural alignment predicts that alignable differences will typically be the focus of comparisons, we predicted in H1a that participants would prefer the alignable-better brand. As expected, participants allocated more points to the alignable-better brand ($M = 55.87$) than to the nonalignable-better brand ($M = 44.13$). The statistical test we used was to determine whether the points allocated to the alignable-better brand were significantly above or below 50 (the inverse holds for the nonalignable-better brand). In support of H1a, the number of points allocated to the alignable-better brand was significantly above 50, $t(32) = 2.55$, $p < .05$. Consistent with this pattern of data, an analysis of the individual participants revealed that 21 out of 33 gave more points to the alignable-better brand than to the nonalignable-better brand. Three participants gave equal number of points to both brands.

Thought listings. The responses in the thought-listing task were coded by two independent raters into five mutually exclusive categories. These categories were: (a) use of a commonality, (b) use of an alignable difference, (c) use of a nonalignable difference, (d) statement of concerns, and (e) other statements. Overall, the interrater reliability was 0.89. Differences between raters were resolved through discussion. These data are shown in Table 2.

Most of the listed thoughts referred to commonalities or differences of the products. There were some statements of concern about the task (e.g., "Why do you ask for importance of attribute?" and "Popcorn is popcorn, and I never noticed differences before"). Only a small number of the statements did not fit into one of the four main categories, and they were categorized as "other" (e.g., "My friend likes microwave popcorn" and "My parents sometimes buy this kind of stuff").

In H1b, we predicted that participants' preference ratings would be justified primarily with alignable differences. Consistent with this hypothesis, the thought listings contained more than three times as many uses of alignable differences ($M = 0.97$) than of nonalignable differences ($M = 0.30$), $t(32) = 3.75$, $p < .001$. As further support for the role of structural alignment in preference formation, commonalities were listed more often in participants' thoughts ($M = 0.79$) than were nonalignable differences ($M = 0.30$), $t(32) = 2.48$, $p < .05$.

Regression of preferences on thoughts. We assumed that participants' thought listings reflected the properties they used to construct their preference judgments. To assess this possibility, we ran a regression analysis predicting the number of points allocated to the alignable-better brand by each participant from the mean number of thoughts of alignable and nonalignable differences for that participant. Because the stimulus set had one brand that was better along the alignable differences and one that was better along the nonalignable differences, we expected that the coefficient re-

lating the number of alignable differences in the thoughts to preference for the alignable-better brand would be positive and that the coefficient relating the number of nonalignable differences in the thoughts to preference for the nonalignable-better brand would be negative. Consistent with this prediction, the coefficient for alignable differences was significantly greater than 0 ($b = 5.21$), $t(1, 28) = 2.19$, $p < .05$, and the coefficient for nonalignable differences was significantly less than 0 ($b = -8.27$), $t(1, 28) = -2.33$, $p < .05$. This analysis supports our claim that people's listed thoughts are a reflection of the information they used to construct their preference judgments.

Recall. As discussed in the introduction, the method from this experiment is likely to induce participants to make their preference judgments when the stimuli are in front of them rather than from memory (Hastie & Park, 1986). If the judgment is made on-line, then the information used in the judgment needs to be the same as the information about the brands that is learned and thus able to be recalled later. Therefore, in H1c we predicted that the relation between the properties recalled and the preference judgments would be weaker than what we observed for the listed thoughts (which are a more direct reflection of the information used in the judgments). The recall data from Experiment 1 are summarized in Table 2.

A 2 (brand) × 3 (attribute type) mixed-model analysis of variance (ANOVA) revealed a main effect of brand, $F(1, 32) = 18.83$, $p < .001$, reflecting that a higher proportion of attributes was recalled for the alignable-better brand ($M = 0.47$) than for the nonalignable-better brand ($M = 0.34$). There was also a main effect of attribute type, $F(2, 64) = 31.09$, $p > .001$, reflecting that participants recalled more alignable differences ($M = 0.57$) than nonalignable differences ($M = 0.26$), $t(32) = 8.90$, $p < .0001$. In addition, participants recalled more commonalities ($M = 0.49$) than nonalignable differences, $t(32) = 5.51$, $p < .001$. This finding supports the contention that both commonalities and alignable differences are focal outputs of the comparison process, but nonalignable differences are not.

An interaction between brand and attribute type was observed, $F(2, 64) = 5.25$, $p < .01$. Post hoc tests indicate that, as expected, the same proportion of alignable differences were recalled for the alignable-better brand ($M = 0.56$) and the nonalignable-better brand ($M = 0.58$). Unexpectedly, more commonalities were recalled for the alignable-better brand ($M = 0.54$) than for the nonalignable-better brand ($M = 0.44$), $t(32) = 2.71$, $p < .01$. Also unexpectedly, more nonalignable differences were recalled for the alignable-better brand ($M = 0.36$) than for the nonalignable-better brand ($M = 0.17$), $t(32) = 3.71$, $p < .001$.

Regression of preferences on recall. Turning to the relation between preference judgments and recall, we performed a similar regression analysis to the one we did to assess the relation between preference and listed thoughts. The coefficients in this model were sensible, as a small positive coefficient was obtained for alignable differences ($b = 2.72$), $.05 < p < .10$, and a small negative coefficient was obtained for nonalignable differences ($b = -1.61$), $p > .10$, but these relations were clearly weaker than those in the model presented earlier. Indeed, the overall regression model failed to reach significance, $F(2, 30) = 1.71$, $p > .10$. This pattern of data supports our contention that participants were making their judgments in the presence of the stimuli rather than from memory. The recall data in subsequent studies exhibited a similar pattern and are not discussed further in this article.

Discussion

In this experiment, we examined how people form preferences in general without a task-involvement manipulation. Based on the similarity judgment model of structural alignment, we suggest that people focus primarily on alignable differences of options rather than on nonalignable differences. Consistent with this hypothesis, the alignable-better brand was preferred to the nonalignable-better brand. Furthermore, the thought listings contained more discussions of alignable differences than of nonalignable differences. As evidence that the thought listings are related to the preference ratings, a regression analysis found that both the number of alignable and nonalignable differences mentioned in the thought listings are systematically related to people's preference ratings.

The recall data were consistent with our hypothesis that the preference judgments were made on-line rather than from memory (Hastie & Park, 1986). The relation between the preference ratings and the recalled alignable differences and nonalignable differences was weak. Thus, the properties people were able to recall were not a reflection of their preference judgments. This pattern contrasts with the finding that the listed thoughts were significantly related to people's preference judgments.

So far, these data are compatible with a number of earlier studies demonstrating that when people form preferences, they focus on information about the options that is alignable (e.g., Slovic & MacPhillamy, 1974). Of particular interest to us in this article, however, is the way that people come to use nonalignable differences of options when forming preferences. The nonalignable differences of an option may reflect a key advance of one product over another, so it is important from both a theoretical and a managerial standpoint to know how people can be influenced to attend to these properties. We suggested earlier that consumers who are involved in the task of forming preferences might be more likely to use the nonalignable differences than will consumers who are not that involved in the task. We test this possibility in Experiment 2 by manipulating the degree of consumer involvement through the instructions given in the task.

EXPERIMENT 2

Following previous research (e.g., Johar, 1995; Maheswaran & Meyers-Levy, 1990), we manipulated participants' involvement

with the task through instructions that provide information about the degree of contribution of each individual participants' data to the overall research results. The low-involvement participants were told that their data was going to be pooled with those of a large number of other participants. They were further told that the products they were reading about were being considered for development. In contrast, the high-involvement participants were told that they were one of a very small select group of participants whose data were being used to finalize the development of a product that would be marketed in their area soon. These participants were also told that their names would be entered in a drawing to receive free merchandise.

Assuming that these manipulations of involvement are effective, we expected systematic differences in performance between the low-involvement participants and the high-involvement participants. In particular, the data from the low-involvement participants should replicate the findings of Experiment 1, providing further support for H1a, H1b, and H1c. In contrast, the data from the high-involvement participants should show a greater influence of nonalignable differences in the preference judgment task and the associated thought-listing task. This pattern of data would support H2a and H2b.

Method

Participants and design. A total of 68 participants from Columbia University took part in the study. They came to the lab in small groups and were paid for their participation. The design of the experiment was a 3 (types of attributes) × 2 (brands) × 2 (levels of involvement) mixed design. Involvement was a between-subjects factor. The dependent variables were exactly the same as those in Experiment 1.

Materials. The materials were the same as those in Experiment 1.

Procedure. The procedure was very similar to that used in Experiment 1 except for two changes. The first change was that participants were given booklets that contained the cover story for the involvement manipulation on the front page. In this manipulation, low-involvement participants were told that they were among 10,000 respondents participating in the study, which was being conducted in several cities in the United States, and that their responses would be combined with those of the other people to get a sense of the average consumer. In addition, these participants were told that the purpose of the study was to get their opinions about brands that might be considered for preliminary product development. Participants in the high-involvement condition were told that they were among a very small and select group chosen to participate in the study and that their responses were very important. They were also told that the brands would be soon introduced to the market in the city and that their names would be entered into a lottery for a free 1-month supply of the product or a gift certificate of equal value.

The second change was that after the presentation of the dependent measures, participants answered a set of involvement manipulation check questions. These questions were answered by circling numbers on a number of 9-point scales adapted from Johar (1995), ranging from (a) (*were not interested/were very interested*), (b) (*were not absorbed/were very absorbed*), (c) (*skimmed the description quickly/read the description thoroughly*), (d) (*unimportant/important*), (e) (*irrelevant/of concern to you*), (f) (*worthless/valuable*), (g) (*boring/interesting*), to (h) (*uninvolving/involving*). The first three questions were about the participants, and the rest were about the product descriptions.

RESULTS

Manipulation Check

The manipulation check questions were averaged to form an index of involvement (Cronbach's $\alpha = .80$) and revealed higher involvement for the participants in the high-involvement condition ($M = 5.30$) than in the low-involvement condition ($M = 4.19$), $F(1, 66) = 3.84$, $p < .05$.

Stimulus Construction Check

The importance ratings given by participants during the encoding task were averaged across attributes. The mean for the three types of attributes for each brand and condition are shown in Table 3. As in Experiment 1, the importance ratings for the commonalities were about the same for both the alignable and nonalignable-better brands ($M = 6.48$ vs. $M = 6.35$) aggregated across conditions, $t < 1$. Furthermore, the alignable differences of the alignable-better brand, Brand P, were given higher importance ratings ($M = 6.46$) than those of the nonalignable-better brand, Brand Q ($M = 5.30$), $t(68) = 4.91$, $p < .001$. In contrast, the nonalignable differences of the nonalignable-better brand, Brand Q, were given higher ratings ($M = 6.15$) than those of the alignable-better brand, Brand P ($M = 4.50$), $t(68) = 8.18$, $p < .0001$.

Hypothesis Testing

Preferences. The data from this study are shown in Table 3. As in Experiment 1, participants in the low-involvement condition were expected to prefer the alignable-better brand. Participants in the high-involvement condition were expected to show a smaller preference for the alignable-better brand than the participants in the low-involvement condition. Consistent with this prediction, significantly more points, on average, were allocated to the alignable-better brand by participants in the low-involvement condition ($M = 57.14$) than by participants in the high-involvement condition ($M = 47.93$), $t(66) = 2.51$, $p < .05$.

Also as in Experiment 1, the mean number of points allocated to the alignable-better brand by participants in the low-involvement condition was significantly greater than 50, $t(34) = 3.21$, $p < .01$. This finding reflects a significant prefer-

TABLE 3
Attribute Importance, Recall, Preference Judgment, and Thought Listing From Experiment 2

	High Involvement				*Low Involvement*			
Dependent Measures	*Alignable-Better Brand*	*Nonalignable-Better Brand*	*Equal Preferences*	*No. of Mentions*	*Alignable-Better Brand*	*Nonalignable-Better Brand*	*Equal Preferences*	*No. of Mentions*
Importance[a]								
Commonalities	6.60	6.53			6.35	6.16		
Alignable differences	5.89	5.25			5.96	4.84		
Nonalignable differences	4.58	6.32			4.42	5.96		
Recall								
Commonalities	0.50	0.52			0.50	0.45		
Alignable differences	0.63	0.64			0.59	0.56		
Nonalignable differences	0.29	0.20			0.37	0.22		
Preference								
Points allocations	47.94	52.06			57.14	42.86		
Number of people[b]	13	16	3		22	7	5	
Thought listing[c]								
Commonalities				0.45				0.46
Alignable differences				0.81				0.83
Nonalignable differences				0.61				0.48
Concern[d]				0.36				0.22
Others[e]				0.27				0.49

[a]The results were averaged across attributes within each type. [b]The number of people who give more points to the brand. [c]The number of mentions of types of attribute descriptions provided by the participants during the thought-listing task. [d]Examples of Concern include, "What is this about?," "I don't eat popcorn too much," and so forth. [e]Others stand for thoughts that did not belong to the previous four categories of responses, such as "My friend likes marshmallows" or "I like nonfat products."

ence for the alignable-better brand in the low-involvement condition, supporting H1a. As further support for this pattern of data, 22 of the 29 participants expressing a preference for one of the brands favored the alignable-better brand. Five participants gave equal points to both brands.

The high-involvement condition yielded a different pattern of results. In support of H2a (the alignable-better brand will no longer be preferred), the mean number of points allocated to the alignable-better brand ($M = 47.94$) was less than 50, but this difference was not significant, $t(32) = .70$, $p > .10$. This pattern was also seen when looking at the data from individual participants. Of those 30 participants expressing a preference for one of the brands, 14 allocated more points to the alignable-better brand, while 16 allocated more points to the nonalignable-better brand (with 3 participants allocating 50 points to each brand). This pattern of data was consistent with the stimulus construction in which the brands were designed to be about equally preferable if both the alignable and nonalignable differences were taken into account.

Thought listing. The listed thoughts about differences were analyzed with a 2 (involvement) × 2 (attribute types) mixed-model ANOVA. There was only a main effect of attribute type, $F(1, 66) = 4.70$, $p < .05$, reflecting that more alignable differences ($M = 0.82$) were listed than nonalignable differences ($M = 0.54$) for judgment justifications. Planned pairwise contrasts indicate that this main effect was largely due to the low-involvement condition. Consistent with H1b, in the low-involvement condition, a larger number of alignable differences ($M = 0.83$) was mentioned than nonalignable differences ($M = 0.48$), $F(1, 34) = 4.68$, $p < .05$, suggesting that participants used more alignable differences in judgment formation. Generally consistent with the results of H2b, in the high-involvement condition, participants listed a similar number of thoughts reflecting alignable differences ($M = 0.81$) and nonalignable differences ($M = 0.61$), $F = 1$. No significant differences were observed for the listed thoughts between conditions. Unlike Experiment 1, commonalities were not listed as frequently in the thought listings as either alignable or nonalignable differences.

Regression of preferences on thoughts. Once again, we examined the relation between the listed thoughts and the preference judgments using linear regression. As before, given the structure of the stimulus set, we expected that the coefficient relating preference for the alignable-better brand to thoughts of alignable differences should be positive, and the coefficient relating preference to thoughts of nonalignable differences should be negative. In the low-involvement condition, the model revealed a significant positive coefficient for thoughts of alignable differences ($b = 6.24$), $t(32) = 2.44$, $p < .05$. The coefficient for listed nonalignable differences was negative, but not significantly lower than 0 ($b = –4.89$), $t(32) = 1.47$, $p > .10$. This analysis is consistent with that performed in Experiment 1. The coefficients suggest that participants in the low-involvement condition may have placed more emphasis on the alignable differences than on the nonalignable differences.

The model for the high-involvement condition is also consistent with our expectations. There was a positive coefficient for alignable differences, but this coefficient was not significantly greater than 0 ($b = 4.28$), $p > .10$. In contrast, there was a

significant negative coefficient relating nonalignable difference to preference ($b = 9.07$), $p < .05$. This pattern of regression coefficients is consistent with the interpretation that participants in the high-involvement condition placed more emphasis on the nonalignable differences than on the alignable differences. Taken together, these regression analyses suggest that participants' listed thoughts were a reflection of the information they used to generate their preference judgments.

Discussion

The results of Experiment 2 demonstrate an important influence of involvement on preference construction. Participants in the low-involvement condition replicated the findings of Experiment 1. For these participants, there was a reliable preference for the alignable-better brand, and the regression analysis suggests that more emphasis was placed on the alignable differences than on the nonalignable differences. In contrast, for the high-involvement condition, significantly fewer points were allocated to the alignable-better brand than had been allocated in the low-involvement condition. In the high-involvement condition, a similar number of points was allocated to the alignable-better and nonalignable-better brand. Furthermore, the regression analysis suggests that more emphasis was placed on the nonalignable differences than on the alignable differences.

Although we did not discuss the recall data, for completeness it is presented in Table 3. Consistent with our expectations, involvement had a greater impact on the preference judgments and thought listings than it did on recall. This pattern is consistent with the interpretation given previously that the judgments were made at the time of stimulus presentation rather than from memory. Based on this consistent pattern of recall results (Experiments 1 and 2), we expected that the on-line preference judgments to be performed in Experiment 3 would yield a similar pattern of recall results.

Although the studies presented so far support our hypotheses, one additional demonstration is required. In the high-involvement condition of Experiment 2, significantly fewer points were allocated to the alignable-better brand than had been given to it in the low-involvement condition. However, the number of points allocated to this brand was not significantly different from 50. This result was expected because the brands were designed to be equally preferable if all of the attributes were considered. The equal attractiveness of the two brands was due to the fact that the alignable differences of the alignable-better brand on average were pretested to be equally attractive to the nonalignable differences of the nonalignable-better brand. In Experiment 3, we changed the stimulus set so that we enhanced the attractiveness of the nonalignable differences of the nonalignable-better brand to the extent that those nonalignable differences are judged to be more attractive than the alignable-differences of the alignable-better brand. Thus, in this case, if participants in the high-involvement condition were indeed attending to all of the attributes and relying more on the nonalignable differences in forming preferences, they would not only allocate fewer points to the alignable-better brand than the participants in the low-involvement condition, but they would actually show a significant preference for the nonalignable-better brand over the alignable-better brand. In contrast, participants in the low-involvement condition would still rely more on the alignable differences and prefer the alignable-better brand to the nonalignable-better brand. A central aim of Experiment 3 is to demonstrate this preference reversal.

EXPERIMENT 3

Method

Participants and design. A total of 58 participants from the University of California, Los Angeles, community took part in this study. They came to a lab in small groups and were paid for their participation. The design was the same as that in Experiment 2, a 3 (types of attributes) × 2 (brands) × 2 (levels of involvement) mixed-design. The dependent measures were also the same. However, the materials were adjusted as described next.

Materials. The alignable-better brand in Experiment 3 was the same as that in Experiments 1 and 2. For this study, a new nonalignable-better brand was created with a new set of nonalignable differences (see the Appendix). These new features were all judged to have higher attractiveness and importance ratings, such that the ratings of the nonalignable-differences of the nonalignable-better brand ($M_{\text{Attractiveness}} = 7.48$, $M_{\text{Importance}} = 7.16$) were greater than those of the alignable-differences of the alignable-better brand ($M_{\text{Attractiveness}} = 6.20$, $M_{\text{Importance}} = 5.39$), $t(22) = 3.03$, $p < .01$, and $t(22) = 2.86$, $p < .01$, for the attractiveness and importance contrasts, respectively. As a result, the nonalignable-better brand ($M_{\text{Attractiveness}} = 6.32$, $M_{\text{Importance}} = 6.06$) received higher overall favorability judgment than the alignable-better brand ($M_{\text{Attractiveness}} = 5.91$, $M_{\text{Importance}} = 5.40$), $t(22) = 2.52$, $p < .05$, and $t(22) = 3.79$, $p < .01$, for the attractiveness and importance contrasts, respectively. Moreover, pretest participants indicated that the new features (in Appendix) "does not stick in the teeth" and "very crispy and easy to swallow" were innovative as compared with the original features.

Procedure. The procedure was the same as in Experiment 2.

RESULTS

Manipulation Checks

As in Experiment 2, the involvement manipulation-check questions were averaged to form an index (Cronbach's α =

.82). Once again, the high-involvement group gave higher ratings (M = 5.89) than the low-involvement group (M = 4.74), $F(1, 55) = 9.08$, $p < .001$.

Stimulus Construction Checks

Once again, we examined the importance ratings given by participants during the encoding task, as shown in Table 3. As in Experiment 2, the importance ratings for the commonalities were about the same for both brands, aggregated across conditions ($M = 6.96$ vs. $M = 6.91$), $t < 1$. As before, the importance of the alignable differences was greater for the alignable-better brand ($M = 6.46$) than for the nonalignable-better brand (M = 5.30), $t(58) = 6.35$, $p < .0001$. Also as before, the importance ratings of the nonalignable differences was greater for the nonalignable-better brand (M = 6.84) than for the alignable-better brand (M = 4.36), $t(58) = 10.23$, $p < .0001$. Finally, and of importance, consistent with the essential stimulus design, the importance ratings for the nonalignable differences of the nonalignable-better brand was greater ($M = 6.85$) than the importance ratings for the alignable differences of the alignable-better brand ($M = 6.45$), $t(58) = 2.19$, $p < .05$. Note that in Experiment 2, the corresponding importance ratings were about the same ($M = 6.14$ vs. $M = 5.93$), $t = 1$.

Hypothesis Testing

Preferences. The data from Experiment 3 are shown in Table 4. The results are consistent with H1a, H2a, and H3 (and also with the data from Experiments 1 and 2). First, as in Experiment 2, people allocated significantly more points to the alignable-better brand in the low-involvement condition (M = 58.62) than in the high-involvement condition (M = 42.48), $t(56) = 3.94$, $p < .01$. As before, in support of H1a, significantly more than 50 points were allocated to the alignable-better brand, $t(28) = 2.79$, $p < .01$. This finding reflects that 18 out of 25 of the participants exhibiting a preference for one of the brands preferred the alignable-better brand. This finding is particularly notable because the stimuli were designed so that, objectively, the nonalignable-better brand was superior.

In contrast to this pattern, and in support of H3 that the nonalignable-better brand will be preferred to the alignable-better brand, participants in the high-involvement condition gave significantly fewer than 50 points to the alignable-better brand ($M = 42.48$), $t(28) = 2.80$, $p < .01$. This finding reflects that of those 28 participants in this condition who expressed a preference for one of the brands, only 10 preferred the alignable-better brand, whereas 18 preferred the nonalignable-better brand ($M = 57.72$).

We replicated this finding with a follow-up experiment with 84 participants at the University of Texas whose manipulation checks were all in the range of the high-involvement condition.[2] As in the high-involvement condition of this study, participants allocated significantly fewer than 50 points to the alignable-better brand ($M = 40.69$), $t(83) = 5.23$, $p < .001$, again showing that participants preferred the nonalignable-better to the alignable-better brand.

Thought listing. Once again, the listed thoughts were classified into five types. The thoughts pertaining to alignable and nonalignable differences were examined in a 2 (involvement) × 2 (difference type) mixed-model ANOVA. A main effect of involvement was observed, $F(1, 56) = 6.03$, $p < .05$, reflecting that participants listed more features as judgment justifications in the high-involvement condition ($M = 1.14$) than in the low-involvement condition ($M = 0.61$). Of importance was an interaction between involvement and difference type, $F(1, 56) = 5.36$, $p < .05$. This interaction reflects that less-involved participants listed more alignable differences ($M = 0.69$) than nonalignable differences (M = 0.52), $F(1, 28) = 3.64$, $p < .06$, supporting H1c, whereas highly involved participants listed more nonalignable differences (M = 1.24) than alignable differences ($M = 1.03$), $F(1, 28) = 2.45$, $p <$ .06 (one-tailed), which is consistent with H2b that states that nonalignable differences play a larger role in the preference formation than the alignable differences. More important, pairwise comparisons conducted between the involvement conditions indicate that although both groups of participants listed a similar number of alignable differences, $F < 2$, high-involvement participants listed significantly more nonalignable differences than did low-involvement participants ($M = 1.24$ vs. $M = 0.52$), $F(1, 56) = 8.01$, $p < .01$. This finding suggests that nonalignable differences, which were designed to be more attractive, were used in the preference judgments made by participants in the high-involvement condition, enabling the participants to allocate significantly more points to the nonalignable-better brand.

Regression of preferences on thoughts. Again, we explored the relation between preference judgments and thought listings with a regression analysis. For the low-involvement condition, the results were as expected. A significant positive coefficient was obtained for the alignable differences ($b = 11.36$), $p < .01$, and a nonsignificant negative coefficient was obtained for nonalignable differences ($b = –5.83$), $p > .10$. Again, the coefficients suggested that more emphasis was being placed on the alignable differences than on the nonalignable differences in this condition.

Unexpectedly, the model for the nonalignable differences did not yield the same pattern as the other models presented in this article. The coefficients for both alignable and nonalignable differences were both small and not significantly different from 0 (b [alignable differences] =

[2]These participants were run with an instructional manipulation designed to manipulate their involvement as before. Because they came to a psychology lab expressly for the purpose of carrying out this study, however, the manipulation check was ineffective, and all participants appeared to have been highly involved in the task.

TABLE 4
Attribute Importance, Recall, Preference Judgment, and Thought Listing From Experiment 3

	High Involvement				*Low Involvement*			
Dependent Measures	*Alignable-Better Brand*	*Nonalignable-Better Brand*	*Equal Preferences*	*No. of Mentions*	*Alignable-Better Brand*	*Nonalignable-Better Brand*	*Equal Preferences*	*No. of Mentions*
Importance[a]								
Commonalities	7.10	6.87			6.81	6.94		
Alignable differences	6.51	5.39			6.40	5.21		
Nonalignable differences	4.36	7.01			4.36	6.66		
Recall								
Commonalities	0.46	0.42			0.44	0.41		
Alignable differences	0.58	0.59			0.52	0.55		
Nonalignable differences	0.33	0.21			0.39	0.26		
Preference								
Points allocations	42.48	57.72			58.62	41.72		
Number of people[b]	10	18	1		18	7	4	
Thought listing[c]								
Commonalities				0.58				0.31
Alignable differences				1.03				0.69
Nonalignable differences				1.24				0.52
Concern[d]				0.03				0.07
Others[e]				0.45				0.55

[a]The results were averaged across attributes within each type. [b]The number of people who give more points to the brand. [c]The number of mentions of types of attribute descriptions provided by the participants during the thought-listing task. [d]Examples of Concern include, "What is this about?," "I don't eat popcorn too much," and so forth. [e]Others stand for thoughts that did not belong to the previous four categories of responses, such as "My friend likes marshmallows" or "I like nonfat products."

–1.38, *b* [nonalignable differences] = –1.78), both *p*s > .10. An examination of scatterplots revealed a few participants whose performance was not in line with the data from the rest of the group. Because the number of participants in this study was relatively small for using regression, it was possible for a few anomalous participants to have a large influence on the analysis.

To ensure that high-involvement participants with this stimulus construction generally show the relation between listed thoughts and points allocated to the alignable-better brand, we performed the same regression analysis on the data from the 84 participants from the University of Texas who were mentioned previously. Recall that these participants allocated significantly more points overall to the nonalignable-better brand than the alignable-better brand, as did the high-involvement participants in Experiment 3. These participants also listed about the same number of thoughts of alignable differences (M = 1.79) as nonalignable differences (M = 1.58). Opposite to the pattern in the low-involvement condition, the regression analysis on these data revealed a nonsignificant positive coefficient relating preference for the alignable-better brand to thoughts of alignable differences (b = 2.18), $p > .10$, and a significant negative coefficient relating preference to thoughts of nonalignable differences (b = –3.86), $p < .01$. This analysis is consistent with what we obtained in Experiment 2, as participants in this high-involvement group appear to have placed more emphasis on the nonalignable differences than on the alignable differences. These data further suggest that the aberrant results of the earlier regression analysis may be due to the anomalous behavior of a few of the participants in the high-involvement condition.

Discussion

Experiment 3 provides additional support for our hypotheses. In this study, the nonalignable-better brand was constructed to be objectively superior to the alignable-better brand. Despite this construction, participants in the low-involvement condition still focused primarily on the alignable differences and thus exhibited a preference for the alignable-better brand. In contrast, participants in the high-involvement condition were able to recognize the superiority of the nonalignable-better brand, and they exhibited a reliable preference for the nonalignable better brand.

The regression analyses were generally consistent with our hypotheses as well. In the low-involvement condition, the thoughts of alignable differences were positively related to preference for the alignable-better brand, and the thoughts of nonalignable differences were negatively related to the preference for the alignable-better-brand. The regression analysis for the high-involvement condition was not interpretable. We suggested that the results of this analysis may have been influenced by a few aberrant participants. In support of this conjecture, an analysis of an additional 84 participants run with the same materials yielded the expected pattern of data in the regression analysis with a nonsignificant positive coefficient for alignable differences and a significant negative coefficient for nonalignable differences. This pattern of analyses suggests that participants in the low-involvement condition paid more attention to the alignable differences, whereas participants in the high-involvement condition paid more attention to the nonalignable differences.

GENERAL DISCUSSION

Although many studies of decision making have focused on the role of missing information and unique features in choice, we have explored this phenomenon in the context of structural alignment. We began this article by pointing out that there was an established finding in the previous literature that people discount missing feature information and unique features and place more weight on features that belong to the same dimension. We suggested that these findings could be unified under a theoretical framework by considering the comparison of options as a process of structural alignment that focuses on correspondences between domains (both commonalities and alignable differences) at the expense of noncorresponding elements (nonalignable differences). More important, we extended the framework by identifying psychological mechanisms that may promote the processing of the noncorresponding elements and the use of these nonalignable elements for preference construction.

In prior psychological research, the structural alignment framework has been applied to the study of similarity, analogy, categorization, and reasoning (e.g., Gentner & Markman, 1997; Markman & Gentner, 1996). The focus in previous research has been on the main effect of alignability in which nonalignable differences have been predicted to be ignored. In consumer behavior research, this framework has been used to examine ease of comparison and choice-process satisfaction, and to construct a consumer learning and preference formation model, explaining how new brands are learned by comparing them to existing brands and predicting when new brands may overtake the existing dominant brand (Zhang & Fitzsimons, 1999; Zhang & Markman, 1998). These works allowed us to draw parallels between processes active in judgment and choice and those involved in cognitive processing more generally. Of importance, the study presented here goes beyond previous studies by investigating variables that may moderate the effect of alignability on preference formation. To our knowledge, this research is the first work that identifies a moderating variable, such as people's involvement with the task, by combining the cognitive-psychology based similarity model with motivation research from social psychology.

We suggested that making people highly involved in the task can cause them to go beyond the information that is easily available in a comparison and to focus on nonalignable differences. The results of these three studies strongly support our main hypotheses. First, preference judgments made by low-involvement participants focus primarily on alignable differences. In our studies, this focus kept participants from noticing options that were objectively superior when this superiority was reflected in the nonalignable differences of the better option. In contrast, participants who were highly involved in the task and hence motivated to process information would attend to nonalignable differences. In this case, they could recognize the superiority of options based on the attractive nonalignable differences to form a preference. Thus, in cases involving a pair of options in which the attractive nonalignable differences of one option are superior to the attractive alignable differences of the other option, a preference reversal will occur as a function of people's involvement in the task (Experiment 3). However, the preference reversal will not occur when the attractiveness of the nonalignable differences of one option is equal to the attractiveness of the alignable differences of the other option (Experiment 2). This pattern of results suggests that high involvement will produce a preference reversal when a target brand possesses unique features (e.g., innovative attributes) that overshadow the alignable features of itself as well as of the competitor brand.

In an important way, the moderating effect of involvement derived from the incorporation of theories of motivational research extends the structural alignment model to address issues such as when and how contextual variables promote the processing of nonalignable features that are relatively more difficult to process. In the past, the comparative characteristics of the stimulus options have been predicted to be ignored when they are nonalignable differences. The results on involvement show that features that are nonalignable can contribute significantly to people's preference formation. Given our findings of the role of involvement, it is reasonable to suggest that other similar situational variables such as time pressure, set size of attribute information, types of decision task, and person variables (e.g., knowledge and need for cognition) may also moderate the alignability effect on preference formation and may produce similar patterns of preference reversals. Thus, we have provided a unified theoretical framework for thinking about a series of phenomena that can be further explored in future research.

Second, our data provide evidence for the relative importance of alignable and nonalignable differences in preference judgments. In particular, the regression analyses of the relation between listed thoughts and preference judgments demonstrate that people with low involvement in the task focus more strongly on alignable differences than on nonalignable differences. In contrast, people with high involvement in the task focus more strongly on nonalignable differences than on alignable differences. In addition, the data from recall are consistent with proposals that when stimulus information is presented simultaneously, people make their judgments on-line rather than from memory (Biehal & Chakravarti, 1986; Hastie & Park, 1986). This finding is reflected by the fact that feature recall was not influenced by involvement and that the number of features recalled was not significantly related to the pattern of preference judgments. Thus, these data are consistent with our claim that alignable and nonalignable differences are used as the basis of people's preference judgments during comparison of simultaneously presented options.

The findings of this research have implications for product competition and also for marketers' positioning and communication strategies. In current markets, many packaged goods tend to compete only by emphasizing nonalignable differ-

ences often labeled as "new." These new features are trumpeted on the packet and different packets (i.e., different brands), placed on the same shelf, boasting nonalignable new features. Marketers should carefully separate two possible competition situations and not assume that simply emphasizing nonalignable features will be a successful positioning and communication strategy. In one situation, every competing brand may be offering several new features, and, in the other situation, only one brand is offering new features, whereas the others are not. Our experimental setup and results speak to the former situation. When each competing brand has several nonalignable features to offer, one should note that these nonalignable attributes may be given low weight by uninvolved consumers because nonalignable differences are difficult to process and to use for trade-off comparisons. Thus, our findings suggest that products should compete on unique attributes provided that (a) marketers can identify target consumers who have a high degree of involvement in the purchase decision or create environments that foster high involvement in information processing, and (b) the unique attributes of the products are particularly attractive, such as being innovative and far more superior to the alignable attributes of the competitors' products. Marketers must recognize that whereas alignable differences are processed easily by consumers as a natural outgrowth of the process of comparison, nonalignable differences require additional work on the part of consumers. Thus, simply presenting a comparison among brands will not promote attention to nonalignable differences. Instead, marketers must take care to promote nonalignable differences in situations in which they can reasonably expect consumers to be highly motivated to process information relevant to the choice.

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APPENDIX

Pretest ratings for individual attribute descriptions in Experiments 1 and 2

Attractiveness	*Importance*	*Attribute Descriptions*
Commonalities		
7.83	7.52	Low cost per serving
7.22	6.17	Low level of sodium
4.43	4.30	Not salty
7.87	7.83	Easy to prepare
6.84	6.46	*M*
Alignable differences		
Alignable-better brand		
5.43	4.47	Large-size kernels
7.04	6.82	Pops in its own bag
5.96	4.78	Calories equal to a slice of bread
6.35	5.48	Crunchiness lasts long
6.20	5.39	*M*
Nonalignable-better brand		
5.52	4.95	Medium-size kernels
3.21	4.35	Requires a microwave bowl
3.82	4.09	Calories equal to a table spoon of sugar
6.04	4.87	Crunchiness lasts for 3 hr
4.65	4.56	*M*
Nonalignable differences		
Alignable-better brand		
4.39	4.86	Slightly low in corn and grain flavor
4.70	4.91	Tastes a bit sweet
4.30	3.43	Has some citric acid
5.57	4.26	With waterproof wrapping
4.74	4.37	*M*
Nonalignable-better brand		
6.39	5.87	Easy to swallow
7.13	7.21	Not likely to burn
6.39	5.70	Not tough
6.90	5.70	Kind of crispy
6.52	6.20	*M*

Pretest ratings for nonalignable differences of nonalignable-better brand in Experiment 3

7.65	7.69	Does not stick in teeth (new)
7.13	7.21	Not likely to burn
7.91	7.17	Few kernels left unpopped (new)
7.21	6.57	Very crispy and easy to swallow (new)
7.48	7.16	*M*