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# Point-of-Purchase Displays, Product Organization, and Brand Purchase Likelihoods

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Can point-of-purchase (POP) displays cause a decrease in sales of the featured brand? In an actual test-market promotion, the use of special POP displays led to a decrease in sales of featured wines from a specific U.S. region. Moreover, sales of regularly shelved wines from competitive regions actually increased. The results of a laboratory experiment supported the explanation that the POP displays essentially reorganized the wines into region categories within the stores, making it easier for consumers to compare alternatives by region. As a result, sales of wines from preferred regions increased and sales of wines from disliked regions decreased relative to when the wines were displayed by variety categories on regular shelf space. *Further evidence indicated that reorganizing products by* levels of a given attribute influences purchase likelihoods mainly when the attribute is otherwise low rather than high in salience and when brands have normally high rather than low purchase likelihoods.

Despite the general belief among manufacturers and retailers that special point-of-purchase (POP) displays increase sales across a number of product and store categories (Croft 1995; Gofton 1997; Tonkin 1997), few

Journal of the Academy of Marketing Science. Volume 27, No. 4, pages 428-441. Copyright © 1999 by Academy of Marketing Science. universal rules regarding the effectiveness of POP displays appear in the literature. POP displays generally increase sales of the featured brand (Grover and Srinivasan 1992; McKinnon, Kelly, and Robison 1981), although the effect varies across product categories (Curhan 1974; Wilkinson, Mason, and Paksoy 1982; Wilkinson, Paksoy, and Mason 1982) and, in some cases, fails to emerge (Kumar and Leone 1988). Furthermore, the increase in sales of the featured brand tends to boost sales for the product category (Chevalier 1975-76; Gagnon and Osterhaus 1985), although within-category brand substitution may attenuate the effect on overall category sales (Bronnenberg and Wathieu 1996; Vilcassim and Jain 1991).

The research reported below offers an alternative view of the effects of POP displays on sales of the featured brand and other brands in the product category. It is based on the notion that special POP displays essentially reorganize products within the store (Mills, Paul, and Moorman 1995; Wilson 1995). When the featured brand is strongly associated with a given attribute, this reorganization increases the salience of that attribute for purchase decisions (Simonson, Nowlis, and Lemon 1993; Simonson and Winer 1992), altering sales of the featured brand and regularly shelved brands in a more complex manner than indicated by previous research. The results of a testmarket promotion and a follow-up laboratory experiment indicate that, under certain circumstances, special POP displays can actually decrease sales of the featured brand while boosting sales of regularly shelved competitive brands.

#### POINT-OF-PURCHASE DISPLAYS AND WINE SALES

The effect of POP displays on product organization and within-category brand sales was initially examined via a test market in a major city in the southwest United States. A producer cooperative of wineries used special POP displays as part of a major promotional effort.<sup>1</sup> The POP displays consisted of 27 ( $3 \times 3 \times 3$ ) stacked cases of wine with individual bottles placed on top. In addition, the displays featured signage, in the form of the state flag, indicating that the wines originated from Texas. In each of the participating retail outlets, the displays were clearly separated from the regular shelf space devoted to wine.

The test-market promotion was structured as a field experiment in which the brands comprising the cooperative were displayed in one of two store locations. In the special treatment, the producer cooperative brands were presented exclusively in the special displays highlighting Texas as the location of the wineries. In the normal treatment, Texas brands were organized by variety, along with other domestic and imported brands, on regular shelf space. Finally, the *combined* treatment simultaneously presented Texas brands in both locations. Display location was manipulated in three stores over a 12-week period. The three participating stores consisted of a large warehouse store specializing in beer, wine, and spirits; a small package store specializing in the same product categories; and a large chain supermarket. The decision to include different categories of wine retailers in the study was based on earlier research indicating that wine purchasing patterns may differ according to store type (Folwell 1980). Each of the three test periods lasted for 2 weeks with a 2-week "buffer" preceding each treatment to minimize retail "carryover" effects (Lipstein 1981; Woodside and Waddle 1975). No holidays or major local events took place during the 12-week period. Importantly, all other promotional activities for wines were eliminated during the test period.

A Latin-square design was used to control for the effects of store and time period on sales. Every display treatment appeared equally in each store and each test period. Daily sales figures were selected as individual observations for practical purposes, since store receipts were typically totaled at the end of each business day. No observations were collected on Sundays due to local ordinances governing the purchase of alcohol. This resulted in 108 observations (3 stores × 3 test periods × 12 days per period). The corresponding ANOVA indicated a significant effect of store, F(2, 101) = 444.7, p < .0001, on total wine sales; however, time period, F(2, 101) < 1, and display

location, F(2, 101) < 1, had little or no effect on overall sales. Based on these results, subsequent analyses of the test-market data controlled for the effect of store on daily sales.

The general prediction that the special POP displays should increase sales of the featured wines was tested via a one-way ANOVA with display location (special vs. normal vs. combined) as the independent variable and daily dollar sales as the dependent variable. The main effect of display location was significant, F(2, 105) = 15.1, p < 0001, but mean contrast analyses revealed that the effect was not consistent with expectations. Daily dollar sales of Texas brands were highest in the normal condition (M = 172.74), followed by the combined condition (M = 118.50), and then the special condition (M = 88.04). A Duncan's multiple range test indicated that each mean differed from the others at the  $\alpha = .05$  level of significance.<sup>2</sup>

Interestingly, regularly shelved California wines actually benefited from the presence of the POP displays featuring Texas wines. A similar one-way ANOVA was performed on the sales data for California brands. The results indicated a main effect of display location on sales, F(2, 105) = 3.6, p < .03. Daily sales of California brands were highest in the combined condition (M = 1442.02) followed closely by the special condition (M = 1427.53), but sales were much lower in the normal condition (M = 1172.27). A Duncan's multiple range test indicated that the means in the combined and special conditions did not differ from one another but were significantly higher than the mean in the normal condition at the  $\alpha = .05$  level of significance. In short, the presence of the POP displays featuring Texas brands substantially boosted sales of California brands.

To better understand the unexpected results of the testmarket promotion, a consumer survey was conducted regarding the decision processes involved in wine purchases. The survey data were gathered from a sample frame of wine consumers within the same market. A sample of 3,600 addresses was generated, of which 82 percent was determined to be deliverable, yielding an effective sample size of 2,952. There were 928 mail questionnaires completed and returned, resulting in a response rate of 31 percent.

The first issue investigated with the survey data was the relative importance of the region attribute when consumers purchase wines. When respondents were asked the open-ended question, "On what basis are you most likely to select a particular wine as a gift?" only 3 percent mentioned the region attribute. These results were quite consistent with previous research indicating that relative to price, wine color, and wine variety, production region is relatively low in salience when consumers purchase wine (Gluckman 1986; Zaichkowsky 1988). It is possible that in the test-market promotion, the POP displays increased the salience of the region attribute, thus penalizing Texas brands but benefiting California brands.

This explanation is further suggested by the results regarding consumer preferences for California versus Texas wines. Respondents answered the question, "When you purchase wine, how often do you choose (California versus Texas) wines?" on a 5-point response scale anchored by always = 1 to never = 5. California (M = 1.9) received a more favorable rating than Texas (M = 3.4), with the mean difference attaining significance, F(2, 597) =468.5, p < .0001. Again, these results are consistent with previous research (Dodd, Pinkleton, and Gustafson 1996) and provide a basis for the "penalty" suffered by Texas brands in the test-market promotion. The special displays may have increased the salience of an attribute (i.e., region) for which all featured brands possessed a negative value (i.e., Texas). Hence, the penalty associated with that negative value also increased, and sales declined accordingly.

The results associated with the next portion of the questionnaire indicated that the extent of the sales decline varied considerably across the featured brands. Respondents reported preferences for each of the featured Texas brands on a 5-point scale anchored by *poor quality* = 1 to *excellent* quality = 5. Brands with an average quality score of 2 or less on the 5-point scale were classified as weak, and brands having an average score of 4 or more were considered strong. Brand strength was then included, along with display location, as an independent variable in a two-way ANOVA with total sales as the dependent variable. As expected, the main effect of display format on total sales was significant, F(2, 102) = 4.93, p < .009. This effect corresponds to the mean differences reported above. Not surprisingly, there was also a significant main effect for brand strength, F(2, 102) = 59.13, p < .0001. Strong brands had a higher total sales (M = 243.16) than did weak brands (M =40.15). Importantly, the Display Location  $\times$  Brand Strength interaction effect was significant, F(2, 102) =4.45, p < .01. The means and standard deviations associated with this interaction are presented in Table 1. A Duncan's multiple range test indicated that display location had a significant effect on strong Texas brands. Daily sales were higher in the normal condition (M = 374.54) than in the special condition (M = 160.00) at the  $\alpha = .05$  level of significance. Daily sales of strong brands reached an intermediate level in the combined treatment, but neither of the corresponding mean differences attained significance. By contrast, a second Duncan multiple range test indicated that display location had little or no effect on daily sales of weak Texas brands at the  $\alpha = .05$  level of significance. Rather than offsetting the negative effect of the special displays, brand strength actually magnified the effect. Strong brands suffered the sales decline, whereas weak brands were largely unaffected.

The results of the test market and the consumer survey suggest that, by reorganizing the brands into region

TABLE 1 Daily Sales by Display Location and Brand Strength

	Strong Brands	Weak Brands
Normal	374.54	47.30
	(257.40)	(27.10)
Special	160.00	25.97
-	(172.90)	(23.30)
Combined	254.23	44.72
	(82.40)	(22.80)

NOTE: Numbers in parentheses are standard deviations. For strong brands, means in the Normal and Special conditions differ at the  $\alpha = .05$  level of significance. No other mean differences are significant.

categories, the special POP displays not only drew attention to the featured wines but also encouraged consumers to compare alternatives on the basis of region. This increased the importance of production region, an otherwise secondary consideration for wine purchase decisions. As a result, sales of the featured brands decreased because Texas was perceived negatively as a wine production region. Importantly, the negative sales effect was more pronounced for strong rather than weak Texas brands. This "product organization" interpretation of the test market and consumer survey results is fully explicated and more rigorously tested in the laboratory experiment reported below.

#### PRODUCT ORGANIZATION, ATTRIBUTE SALIENCE, AND PURCHASE LIKELIHOOD

In addition to drawing attention to the featured brand and generating impulse purchases (Curhan 1974; Dhar and Hoch 1996), special POP displays also reorganize products within the store (Mills et al. 1995; Wilson 1995). Previous research suggests that product organization influences the importance consumers assign to various attributes when making purchase decisions. When products are displayed according to a specific attribute (e.g., by brand, by flavor, by price point), the perceptual salience of that attribute increases (Glass and Holyoak 1986; Tversky 1969). This increases the importance that attribute receives when consumers evaluate products and/or make purchase decisions (Hutchinson and Alba 1991; MacKenzie 1986).

In addition, organizing product information according to a given attribute makes it easier for consumers to compare alternatives using that attribute (Bettman 1979; Russo 1977). For example, Simonson and Winer (1992) displayed various brands and flavors of yogurt on separate pages of a questionnaire and asked respondents to make "weekly purchases." Respondents tended to select their favorite brand(s) more often when each page of the questionnaire featured the multiple brands of the same flavor rather than multiple flavors of the same brand. Likewise,

FIGURE 1 Product Organization, Attribute Salience, and Purchase Likelihood



Simonson et al. (1993) displayed multiple brands and product quality levels (i.e., basic, midline, top of the line) of pain relievers, compact disk players, and cordless telephones on separate pages of a questionnaire. Respondents were more likely to select the private-label brand when each page of the questionnaire featured multiple product quality levels of the same brand rather than multiple brands of the same quality level. Together, these results indicate that brand name received greater weight when the information presentation format made it relatively easy to compare brands (i.e., multiple brands on a single page). When the presentation format made brand comparisons relatively difficult (i.e., only one brand per page), brand name received a lesser weight relative to other product attributes.

In the field experiment reported above, organizing the brands into region categories increased the salience of region and made it easier for consumers to compare brands using the region attribute. Hence, brands originating in Texas, an unfavorably evaluated region, were penalized by this decision criterion, and sales dropped accordingly. This also accounts for the sales gains of the regularly shelved brands from California, a favorably evaluated region. As depicted in Figure 1, this suggests the following hypotheses:

*Hypothesis 1a:* Organizing products according to a specific attribute decreases (increases) the purchase likelihoods of alternatives having disliked (preferred) values for that attribute relative to when products are organized according to another attribute.

*Hypothesis 1b:* The effect of product organization on purchase likelihoods is mediated by its effect on the importance weight corresponding to the focal attribute.

The previous discussion suggests that the purchase likelihoods of alternatives having preferred (disliked) values on the focal attribute increase (decrease) relative to when products are organized according to some other attribute. The extent to which this occurs probably depends on numerous factors. However, the model presented in Figure 1 focuses on the salience of the product attribute and the baseline purchase likelihood of each alternative as the primary moderators of the effect of product organization on brand choice. These variables provide a general framework for understanding the results of the test-market promotion and predicting when POP displays will affect brand purchase likelihoods by altering the salience of product attributes.

#### Attribute Salience

As noted above, organizing products according to distinct levels or values of a specific attribute (e.g., by brand, by flavor, by price point) affects purchase likelihoods by increasing the perceptual salience of that attribute and the ease with which it can be used to make comparisons. However, for any given product category, attributes vary in salience quite apart from how they are organized within the store, and consumers tend to rely on salient attributes when making purchase decisions (Bettman 1979; Hutchinson and Alba 1991). Hence, for attributes normally high in salience, product organization should have little or no incremental effect, and attribute importance weights and purchase likelihoods should be largely unaffected. Conversely, product organization should have a substantial impact on attribute importance weights and purchase likelihoods by attribute level for attributes that are otherwise low in salience.

With respect to the test-market results, numerous sources suggest that consumers generally do not base purchase decisions on the production region of wines, but purchase decisions are likely to depend heavily on whether the wine is a white, red, or rosé. First, region information is relatively difficult to process when consumers make purchase decisions. The production region typically appears in rather small letters in inconspicuous places on most wine bottle labels (Sommelier Executive Council 1992), whereas the color of the wine is easily discernible to consumers. Research indicates that consumers are more likely to rely on decision criteria based on attributes that are easy (i.e., color) rather than difficult (i.e., region) to process (Bettman 1979; Hutchinson and Alba 1991; Sethuraman, Cole, and Jain 1994). Second, many formal rules for wine selection specify the "appropriate" wine color for various cuisine and dining occasions (Dodd et al. 1996; Sommelier Executive Council 1992), but few such rules exist for production regions. Finally, as noted above, the results of the consumer survey indicated that region was rarely used by respondents to compare and select wines, and this result is quite consistent with previous research on wine decision making (Gluckman 1986; Zaichkowsky 1988).

Hence, organizing wines into region categories is likely to increase the importance of production region and consequently influence purchase likelihoods by region. So, in the test-market promotion, the POP displays decreased the purchase likelihoods of wines from Texas (i.e., the disliked region) but increased the purchase likelihoods of California wines (i.e., the preferred region). But special displays featuring red versus white versus rosé wines would not necessarily affect purchase likelihoods by color, because consumers possess more definite, easily used decision criteria with respect to that attribute. This suggests the following hypotheses:

*Hypothesis 2a:* The extent to which organizing products according to a specific attribute decreases (increases) the purchase likelihoods of alternatives

having disliked (preferred) values for that attribute is greater when the focal attribute is otherwise low rather than high in salience.

*Hypothesis 2b:* The extent to which organizing products according to a specific attribute increases the importance weights assigned to that attribute is greater when the focal attribute is otherwise low rather than high in salience.

#### **Baseline Purchase Likelihood**

Previous research also suggests that the effect of product organization on purchase likelihoods is not uniform with respect to the usual, or "baseline," purchase likelihood of a given alternative. Wright and Barbour (1977) found that the effect of information presentation format on choice was most pronounced for normally attractive alternatives (i.e., alternatives possessing mostly desirable attributes) that were eliminated early in the decision process when certain presentation formats were used (see also Tversky 1972). That is, certain presentation formats encouraged the use of screening criteria that decreased the choice likelihoods of otherwise attractive alternatives. But alternatives possessing mostly undesirable attributes were eventually eliminated regardless of the initial screening criterion used (see Bettman and Park 1980), so presentation format had little or no effect on choice probability.

Since consumers are likely to consider multiple attributes when purchasing wine (Dodd and Gustafson 1997; Zaichkowsky 1988), the same principle should apply. That is, the effect of product organization on purchase likelihoods should be more pronounced for brands having high rather than low baseline purchase likelihoods (i.e., for brands having mostly desirable rather than mostly undesirable attributes). Indeed, the test-market results are consistent with this reasoning. As indicated by the sales data and previous research regarding brand equity (Aaker 1991; Keller 1993), "weak" Texas brands had low baseline purchase likelihoods. Hence, when the presence of the POP displays eliminated all Texas wines from consideration, there was little or no impact on overall sales, since weak brands were not likely to be selected under any circumstances. But "strong" Texas brands had higher baseline likelihoods, so elimination on the basis of region greatly reduced sales. Although brand ratings of California wines were not available, it is likely that a corresponding effect would have emerged, with strong California brands benefiting the most from the presence of the special displays. This suggests the following hypothesis:

*Hypothesis 3:* The impact of product organization on purchase likelihoods is greater for alternatives having high rather than low baseline purchase likelihoods.

#### LABORATORY EXPERIMENT

#### Design

Hypotheses 1 through 3 were tested via a laboratory experiment involving 96 executive MBA students from a major university in the eastern United States.<sup>3</sup> As shown in Figure 2, the conditions in the experiment were structured as a  $2 \times 2 \times 3 \times 2(3)$  mixed-factor design. Product organization (2) was a between-subjects factor composed of two levels, by color versus by region. The remaining factors were manipulated within subjects. Production region (2) was based on whether respondents were rating a wine from Texas versus California, wine color (3) depended on whether respondents were evaluating a red versus white versus rosé wine, and wine variety (2) was nested within the wine color manipulation (e.g., Chardonnay versus Riesling within whites).

#### Procedure

Respondents participated in groups of five in private cubicles that restricted visual contact with one another. On entering the laboratory and taking a seat at one of the cubicles, respondents were instructed orally that they were to evaluate several wines using the questionnaire in front of them. On the second page of the questionnaire, each of the 12 wines of interest was profiled in a table describing 36 wines in total. In all versions of the table, each wine was numbered and given a single-letter brand name (e.g., Brand I, Brand J). To enhance the realism of the task, respondents were told that brief descriptions of each winery were available in the back of the questionnaire; each description included information regarding history, size, and notable achievements of the winery. This information was balanced with respect to all experimental manipulations. Respondents also were informed that certain pieces of information like price, vintage, and so on were deliberately omitted from the descriptions for purposes of the study. The third page of the questionnaire was clearly partitioned into distinct sections for each wine to be evaluated. The experimenter indicated the first wine to be evaluated by referring to the corresponding number in the table. Wines 2 through 12 were indicated in a similar manner. As shown in Figure 2, the order in which the wines were evaluated ensured that at least two of the three withinsubjects factors varied from one stimulus to the next.

#### **Independent Variables**

Wine color, wine variety, and production region were manipulated via the information appearing for the 12 wine stimuli. Wine color was manipulated by indicating that a particular alternative was a red, a white, or a rosé, and wine variety was manipulated by designating a specific variety within each color category. Region was manipulated by designating each winery as being located in Texas versus California. All of these manipulations were embedded within a larger set of wines; the addition of "dummy" wines was intended to draw respondents' attention away from the within-subjects manipulations.

The between-subjects manipulation, whether brands were organized according to region versus color, was achieved by altering the categories in the table on the second page of the questionnaire. In the organized by region condition, brands were placed into clearly delineated region categories with the headers "Texas Wineries" and "California Wineries." In the organized by color condition, brands were placed into three groups according to their color, with the labels "Red Wines," "White Wines," and "Rosé Wines" appearing over the corresponding set.

#### Mediating, Moderating, and Dependent Variables

Attribute importance weights. On the fifth page of the questionnaire, respondents answered questions regarding attribute importance, the mediating variable in the proposed model. They responded to three items regarding the importance typically assigned to wine color, wine variety, and production region, respectively. Respondents were asked, "When purchasing or ordering wine, how important is the *color* of the wine to your decision?" The next two items asked about wine variety and production region. All three items included two 7-point response scales anchored by *unimportant* (1) to *important* (7) and *insignificant* (1) to *critical* (7).

Baseline purchase likelihoods. The last page of the questionnaire included several items regarding baseline purchase likelihoods, one of two moderating variables in the proposed model. Respondents were presented with the following written instructions: "The questions on this page refer to wine consumption in general, considering all relevant usage occasions (in the home, at parties, dining out, etc.)." They were then asked, "When purchasing or ordering wine, how likely are you to select a (color) wine?" Three items were included for red, white, and rosé wines. The 7-point response scales for each item were anchored by infrequently (1) to frequently (7) and rarely (1) to usually (7). Respondents also indicated their purchase likelihoods by region (California vs. Texas) and by variety (Chardonnay, Riesling, Cabernet Sauvignon, Chianti, White Zinfandel, Table Blush) using similar items and response scales.4

Attribute salience. The operationalization of the second moderator, attribute salience, was based on the previously reviewed literature on (1) wine preferences and purchase decisions (Gluckman 1986; Zaichkowsky 1988) and (2) labeling and display practices in the wine industry (Dodd

Between-Subjects	Within-Subjects			
	1. Tex. Riesling	2. Cal. Ch	ardonnay	3. Tex. Cab. Sauv.
Displayed	4. Cal. Chianti	5. Tex. White Zinf.		6. Cal. Table Blush
by Region	7. Tex. Chardonnay	8. Cal. F	Riesling	9. Tex. Chianti
	10. Cal. Cab. Sauv.	11. Tex. Ta	able Blush	12. Cal. White Zinf.
		(Redefi	ned as)	
Displayed by Color	Preferred Reg	ion	Dis	sliked Region
	Preferred Color Di		sliked Region	
	Preferred Variety		Disliked Variety	

FIGURE 2 Research Design of the Laboratory Experiment

and Gustafson 1997; Sommelier Executive Council 1992). As discussed previously, this literature clearly indicates that, in terms of perceptual prominence and frequency of use in decision making, wine color is high in attribute salience and production region is low in salience.

Specific purchase likelihoods. The dependent variable was measured on the third and fourth pages of the questionnaire prior to the items related to the mediating and moderating variables. Respondents answered the question, "Based only on the information given, how likely is it that you would purchase a wine like Wine #\_ on your next trip to the store?" on two 7-point scales anchored by *unlikely* (1) to *likely* (7) and *improbable* (1) to *probable* (7). The 12 items referred to the numbers in the display table corresponding to the focal wines. To draw attention away from the factorial design underlying the focal wines, six dummy items regarding other varieties (e.g., Burgundy) and wines from other regions (e.g., France) were interspersed in this section of the questionnaire.

#### RESULTS

To test hypotheses linking product organization directly to purchase likelihood, it was necessary to operationalize *preferred* versus *disliked* attribute values and *high* versus *low* baseline purchase likelihoods for each of the 12 wines. To classify the attribute values and individual wines accordingly, each wine color, variety, and region was categorized as either preferred or disliked based on respondents' answers to the baseline purchase likelihood items. This dichotomy was based on the relative favorableness of ratings for each attribute level. For region and variety, two-level factors, a given region or variety was either preferred or disliked. To create orthogonal factors, variety was evaluated within levels of wine color. So, for each wine color, one variety was preferred and the other was disliked.<sup>5</sup> If a respondent's purchase likelihoods were the same by region or variety, she or he was dropped from the analysis. For wine color, a three-level factor, a given color was either preferred, disliked, or intermediate. If two colors had the same purchase likelihoods, they were grouped together into either the preferred or the disliked category. If all three of a respondent's purchase likelihoods by color were the same, she or he was dropped from the analysis.<sup>6</sup>

For a given product organization condition, an attribute was either *focal* or *background*. That is, when wines were displayed by color, the focal attribute was color and the background attributes were region and variety, whereas when wines were displayed by region, color and variety were the background attributes and region was the focal attribute. Hence, an alternative possessed the preferred attribute value when it received the highest rating for the focal attribute (i.e., the color or region most likely to be purchased), and it possessed the disliked value when it received the least favorable rating of the focal attribute. Importantly, while color and region were either focal or background attributes, depending on the product organization condition, variety was never the focal attribute; in other words, variety preferences were related to purchase likelihoods independently of product organization. So, an alternative's baseline purchase likelihood was defined as high when it was the variety most likely to be purchased in general and as low when it was the variety least likely to be purchased.<sup>7</sup>

Hypotheses 1a and 2a were tested via a three-way, mixed-factor ANOVA with product organization (by color vs. by region), wine attribute (color vs. region vs. variety), and attribute-level preference (preferred vs. disliked) as independent variables and purchase likelihood as the dependent variable. Hypothesis 1a posited that organizing products according to a specific attribute increases the purchase likelihoods of alternatives having preferred values of that attribute but decreases the purchase likelihoods of alternatives having disliked values. In terms of the threeway ANOVA described above, this suggests a Product Organization × Attribute-Level Preference effect. However, Hypothesis 2a qualified this prediction by postulating that the influence of organization on purchase likelihoods is larger when the featured attribute is otherwise low (i.e., region) rather than high (i.e., color) in salience; this implies a Product Organization × Attribute-Level Preference × Wine Attribute interaction effect.

The Product Organization × Attribute-Level Preference effect predicted by Hypothesis 1a was significant, F(1,87) = 2.7, p < .10. More important, the Organization  $\times$ Attribute-Level Preference × Wine Attribute effect predicted by Hypothesis 2a also attained significance, F(1,(87) = 6.5, p < .01. The means and standard deviations associated with the three-way interaction are presented in Table 2. As expected, the Organization × Attribute-Level Preference effect was significant for the region (i.e., low salience) attribute, F(1, 88) = 6.8, p < .01. Consistent with Hypothesis 2a, purchase likelihoods of brands originating in the disliked region were lower when products were organized by region (M = 1.9) versus by color (M = 2.6), F(1, 88) = 4.2, p < .04. Likewise, purchase likelihoods of brands originating in preferred regions were higher when products were organized by region (M = 4.4) versus by color (M = 4.0), F(1, 88) = 2.79, p < .08.<sup>8</sup> Importantly, the Product Organization × Attribute-Level Preference effect failed to reach significance for the wine color attribute, F(1, 88) = 1.8, p < .19, or the wine variety attribute, F(1, 88) = 1.8, p < .1988) < 1, further supporting Hypothesis 2a.

These results offer a parallel between the results observed in the test-market promotion and those obtained in the laboratory experiment. Figure 3 shows the corresponding effects. In the test-marketing effort, the presence

TABLE 2
Purchase Likelihood by Product
<b>Organization and Attribute Preferences</b>

	Organized by Region	Organized by Color
Preferred region	4.4	4.0 <sup>a</sup>
	(1.0)	(1.3)
Disliked region	1.9	2.6 <sup>b</sup>
-	(1.2)	(1.2)
Preferred color	3.6	3.8
	(0.9)	(1.2)
Disliked color	2.9	2.9
	(1.1)	(1.3)
Preferred variety	3.3	3.8 <sup>a</sup>
-	(0.9)	(1.0)
Disliked variety	3.0	3.1
	(1.0)	(1.0)

NOTE: Numbers in parentheses are standard deviations.

a. Means differ by product organization condition at the  $\alpha = .10$  level of significance.

b. Means differ by product organization condition at the  $\alpha = .05$  level of significance.

of the POP displays decreased sales of Texas brands and increased sales of California brands relative to when both regions were featured together on regular shelf space. The laboratory experiment created a more direct manipulation of product organization; yet, when the wines were displayed by region, the purchase likelihoods of brands from the preferred region (California) again increased and the purchase likelihoods of brands from the disliked region (Texas) decreased. In essence, the laboratory experiment shows the same underlying effect at the individual rather than aggregate level.

Hypothesis 1b stated that the effect of product organization on purchase likelihoods is mediated by its effect on attribute importance weights. Since the product organization effect emerged only for the region attribute, as predicted by Hypothesis 2a, the mediation analysis was performed only for that attribute. Mediation of an experimental effect is established by showing that (1) the experimental manipulation has an effect on the proposed mediator (i.e., product organization influences attribute importance weights), (2) the proposed mediator is correlated with the dependent variable (i.e., attribute importance is related to purchase likelihoods), and (3) the effect of the experimental manipulation on the dependent variable is eliminated or attenuated when the proposed mediator is included as a covariate (see Baron and Kenny 1986).

To test Hypothesis 1b, the difference in purchase likelihoods between wines from the preferred versus disliked region was defined and included as the dependent variable. As expected, a one-way ANOVA with product organization as the independent variable and the difference variable as the dependent variable produced a main effect, F(1, 88) = 6.8, p < .01. This effect corresponds to the Product



FIGURE 3 Product Organization, Purchase Likelihoods, and Daily Sales by Region of Origin

Organization × Attribute-Level Preference effect reported above for the region attribute. A second one-way ANOVA was run with product organization as the independent variable and the attribute importance weight for region as the dependent variable. The results indicated a main effect, F(1, 92) = 4.6, p < .03, satisfying the first criterion for mediation. When the attribute importance weight was included as a covariate in a one-way ANCOVA, it was significantly correlated with the difference variable, F(1, 87) =16.5, p < .0001, hence satisfying the second criterion. However, the effect of product organization on the difference in the purchase likelihoods of wines from the preferred versus disliked region remained significant even with attribute importance included in the model, F(1, 87) =3.9, p < .05, so mediation was not established, and Hypothesis 1b was not supported.

Hypothesis 2b was tested via one two-way, mixedfactor ANOVA with product organization (by color vs. by region) and wine attribute (color vs. variety vs. region) as independent variables and attribute importance weight as the dependent variable. Hypothesis 2b posits that the effect of product organization on attribute importance weights is larger when the focal attribute is low (i.e., region) rather than high (i.e., color) in salience. The results indicated a main effect of product organization, F(1, 92) = 4.6, p < .03. Importance weights for a given attribute were higher when the wines were organized according to that attribute (M =5.4) versus the "other" attribute(s) (M = 4.9). The Product Organization × Wine Attribute effect implied by Hypothesis 2b was not significant, F(2, 182) = 1.5, p < .3, but the pattern of the means was consistent with expectations. As shown in Table 3, product organization had little or no effect on attribute importance weights for wine color (M =5.5 vs. 5.0), F(1, 92) = 1.6, p < .2, or wine variety (M = 5.3vs. 5.5), F(1, 92) < 1. However, product organization did affect attribute importance weights assigned to region, F(1, 92) = 4.6, p < .03. The importance weight assigned to the region attribute was higher when the wines were organized by region categories (M = 5.3) rather than color categories (M = 4.4). Nevertheless, the failure to achieve significance for the two-way interaction effect limits the support for Hypothesis 2b.

Hypothesis 3 posited that the effect of product organization on purchase likelihoods is more pronounced for alternatives having high rather than low baseline purchase likelihoods. However, since product organization had little or no effect on purchase likelihoods by wine color (as predicted by Hypothesis 2a), this hypothesis was tested using only purchase likelihoods by region. As described previously, high versus low baseline purchase likelihoods were operationalized in terms of whether each alternative was a preferred versus disliked wine variety, since variety was a background attribute in both product organization conditions. That is, variety preferences influenced purchase

TABLE 3 Attribute Importance by Product Organization and Attribute Salience

	Organized by Region	Organized by Color
Production region	5.3	4.4 <sup>a</sup>
(low salience)	(1.7)	(1.8)
Wine color	5.0	5.5
(high salience)	(1.4)	(1.3)
Wine variety	5.5	5.3
(high salience)	(1.4)	(1.4)

NOTE: Numbers in parentheses are standard deviations.

a. Means differ by product organization condition at the  $\alpha$  = .05 level of significance.

likelihoods independently of the product organization manipulation. Hence, to test Hypothesis 3, the following conditions were defined and examined as repeated factors: (1) preferred region/preferred variety, (2) disliked region/preferred variety, (3) preferred region/disliked variety, and (4) disliked region/disliked variety.

The redefined repeated factors were included in a three-way ANOVA with product organization, region preference, and variety preference (i.e., baseline purchase likelihood) as the independent variables and specific purchase likelihood as the dependent variable. Within this ANOVA, Hypothesis 3 implies a Product Organization × Region Preference × Baseline Likelihood effect, and the three-way interaction was, indeed, significant, F(1, 79) =2.8, p < .10. The means and standard deviations associated with this interaction are presented in Table 4. Further analysis of this interaction revealed that the Product Organization × Region Preference interaction was significant when baseline purchase likelihoods were high, F(1,81) = 9.1, p < .003. As predicted, alternatives from the preferred region had higher purchase likelihoods when the wines were organized by region (M = 5.0) versus by color (M = 4.4), F(1, 81) = 4.0, p < .05, but alternatives from the disliked region had lower purchase likelihoods when the wines were organized according to region (M = 2.0) versus color (M = 2.7), F(1, 81) = 4.5, p < .04.

However, consistent with Hypothesis 3, the Product Organization × Region Preference interaction did not attain significance when baseline purchase likelihoods were low, F(1, 80) = 2.3, p < .13. Under these conditions, there was little or no effect of product organization on purchase likelihoods for alternatives originating in the preferred region, F(1, 80) < 1. Product organization did, on the other hand, influence the purchase likelihoods of alternatives from the disliked region when baseline purchase likelihoods were low, F(1, 80) = 4.5, p < .04; purchase likelihoods were lower when the wines were organized according to region (M = 1.8) versus by color (M = 2.4). Nevertheless, the basic pattern of the three-way interaction is consistent with Hypothesis 3. Product organization

TABLE 4
Purchase Likelihood by Product Organization
and Baseline Purchase Likelihoods

	Organized by Region	Organized by Color
Preferred region	5.0	4.4 <sup>a</sup>
(high baseline)	(1.2)	(1.8)
Disliked region	2.0	2.7 <sup>b</sup>
(high baseline)	(1.2)	(1.2)
Preferred region	3.8	3.7
(low baseline)	(1.0)	(1.3)
Disliked region	1.8	2.4 <sup>a</sup>
(low baseline)	(1.2)	(1.2)

NOTE: Numbers in parentheses are standard deviations.

a. Means differ by product organization condition at the  $\alpha = .10$  level of significance.

b. Means differ by product organization condition at the  $\alpha = .05$  level of significance.

had a more pronounced effect on the purchase likelihoods of alternatives with high rather than low probabilities of being selected in general.

#### DISCUSSION

Figure 4 presents a revised model of the effect of POP displays on brand choice based on the results of the testmarket promotion and the laboratory experiment. With respect to the latter, the main deviation from expectations was that both predictions associated with the attribute importance measure (i.e., Hypotheses 1b and 2b) were not supported by the data. That is, product organization affected the purchase likelihoods of alternatives having preferred versus disliked attribute values but apparently not via importance weights assigned those attributes.

It is possible that direct measures of attribute importance are simply not as susceptible to context effects as are importance weights derived from conjoint tasks (see Green and Krieger 1995). The former involve the simple retrieval of a judgment already in memory, thus limiting the impact of stimulus variables. However, the latter involve the integration of stimulus information to make several evaluations. In terms of the experiment, respondents knew that region was relatively unimportant to them when asked directly, so product organization had little or no effect. But when the information in the table facilitated comparisons on the basis of region, respondents gave the attribute greater weight in evaluating the 12 wines (see Sethuraman et al. 1994).

Alternatively, it could simply be that variables other than attribute importance mediate the effect of product organization on purchase likelihood. For example, a "satisficing" consumer may possess any number of choice heuristics that lead to acceptable outcomes (Wright 1975). She or he may simply apply the heuristic that comes to mind first or is easiest to use given the choice context. FALL 1999

Hence, product organization could influence purchase likelihoods via consumers' selection of choice heuristics, quite independently of its effect on attribute importance. Future research should devote more attention to identifying the processes that mediate the impact of product organization on purchase likelihood.

The general support for the model suggests that POP displays alter the organization of products within the store, thus changing the salience of attributes when consumers make purchase decisions. Although previous research has certainly demonstrated the ability of in-store promotions to induce specific patterns of brand switching, the general result usually involves an increase in sales of the promoted brand, sometimes at the expense of other brands. This research shows that POP displays can induce interbrand substitution patterns that deviate from this general result because they are based on changes in attribute salience.

Consider a special display featuring all varieties of Crest toothpaste (e.g., mint gel, tartar control formula, regular paste). Any market segment that places more importance on the whitening attribute than on cavity prevention and dental hygiene is likely to prefer brands positioned as teeth whiteners (e.g., Gleem, Ultra-Brite, Arm & Hammer Dental Care). But since the Crest brand is strongly associated with cavity prevention and dental hygiene, the special display would increase the salience of that attribute. As a result, attitudes toward whitening brands not associated with prevention/hygiene (e.g., Ultra-Brite) become less favorable and attitudes toward whitening brands that also emphasize prevention/hygiene (e.g., Dental Care) become more favorable. Hence, for this segment, the POP display could affect sales of regularly shelved brands more than sales of the featured brand.

Of course, not all POP displays affect brand choice via the reorganization of brands within the store. The toothpaste example notwithstanding, the fact that the displays in the research reported above involved multiple brands probably enhanced the role of the product organization construct. The POP displays also involved a product category in which brands are difficult to evaluate prior to purchase using objective attribute information. This may also have enhanced the impact of product organization on purchase likelihood. Future research should identify the factors that determine whether the effects of POP displays are likely to be due to the reorganization of brands within the store.

The research reported above is not without limitations. Overall, it suffers from a "mono-operation" bias of the attribute salience construct (Cook and Campbell 1979). For example, despite the current emphasis on attribute salience, wine color and production region also differ in that the former is an *intrinsic* product characteristic whereas the latter is an *extrinsic* characteristic (Rao and Monroe 1988, 1989; Zaichkowsky 1988). It could simply be the case that perceptions and decision criteria related to

FIGURE 4 Revised Model of Point-of-Purchase Displays, Product Organization, and Brand Choice



extrinsic product characteristics are more easily influenced by in-store information than are those corresponding to intrinsic attributes.<sup>9</sup> Moreover, color is perceived to be a more reliable basis for making purchase and consumption decisions than is region, but it is also much easier for consumers to differentiate products on the basis of color. Although reliability and ease of use may become highly correlated over time (Hutchinson and Alba 1991), it is not obvious that each moderates the impact of product organization in exactly the same way (see Richardson, Dick, and Jain 1994). Future research should examine these issues by testing the model across product categories using alternative operationalizations of the key constructs.

Another limitation is that, in the context of the experimental design, the correlations among region, color, and variety were constrained to be zero. Hypotheses 1a and 3 hold when there is little or no association among product attributes. But if the featured attribute is negatively correlated with other relevant attributes, the effect of product organization on purchase likelihoods may be less pronounced. Positive correlations among the featured attribute and other relevant attributes could well enhance the effect (Huber and Klein 1991; Hutchinson and Alba, 1991). This limitation has ramifications from a substantive perspective as well. Consumers are likely to associate certain wine varieties with specific production regions. Hence, certain region/variety combinations may have been surprising, or even unrealistic, to respondents. Indeed, this possibility is suggested by ancillary analyses that revealed two Region × Variety interactions for purchase likelihoods. Ultimately, if substantive conclusions are to be drawn, the correlations among relevant attributes should be based on the realities of the marketplace; all attribute combinations should be realistic and meaningful to respondents (see Holbrook, Moore, Dodgen, and Havlena 1985).

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#### NOTES

1. Promotions of this kind are indicative of recent industry trends. Vineyards from regions not known for wine production have begun forming cooperatives to compete with better known regions in France and California (Jenkins 1992; Phillips 1992; Voight 1995). The promotional efforts of these cooperatives tend to focus on the production region rather than the individual wineries (Christy and Penn 1994) and typically include special point-of-purchase (POP) displays (Penn and Christy 1994).

2. Importantly, the prices of the wines featured in the special displays were not discounted. Previous research indicates that POP displays are typically associated with price reductions (Grover and Srinivasan 1992) and that consumers tend to infer that displayed products involve special deals of some kind (Inman and McAlister 1993; Inman, McAlister, and Hoyer 1990). To explore the role of price-related inferences, price was included as a covariate in each analysis involving the test-market data. The effect of display location was largely unaffected by the inclusion of the covariate. Moreover, overall price levels did not significantly differ

across the production regions examined. It is possible that the POP displays caused a decline in sales because the featured products were not associated with a price reduction. However, the results of the consumer survey and laboratory experiment reported below suggest an alternative explanation for the drop in sales.

3. Respondents were between 27 and 52 years of age and averaged 14 years of business experience. Forty percent were female.

4. A factor analysis of the 24 specific purchase likelihood items revealed a six-factor solution. The first factor captured the ratings of white and rosé wines from Texas. The second factor captured the ratings of white and rosé wines from California. The ratings of red wines from Texas and California loaded on the third and fourth factors, respectively. The fifth and sixth factors captured moderate loadings from several of the items, rendering them difficult to interpret. A factor analysis of the 6 attribute importance items yielded a two-factor solution. All 6 items loaded positively on the first factor. For the second factor, the two colorimportance items loaded positively, the two region-importance items loaded negatively, and the two variety-importance items did not load at all. Finally, a factor analysis of the 22 baseline purchase likelihood items revealed a five-factor solution. The ratings for California wines, white wines, Chardonnays, and Rieslings loaded heavily on the first factor, suggesting a strong association between California and the two white wine varieties. The second factor captured the ratings for red wines, and the third factor captured the ratings for Texas wines. This suggests that, unlike California, Texas is not strongly associated with the production of specific varieties. The ratings of rosé wines, White Zinfandels, Table Blushes, Cabernet Sauvignons, and Chiantis did not load heavily on any one of the factors. Moreover, the fourth and fifth factors captured moderate loadings from several of the items, making them difficult to interpret.

5. Of course, defining variety preferences within levels of wine color had the effect of reducing the effect size associated with the variety preference manipulation. However, subsequent analyses revealed that the manipulation produced a large and significant effect on specific purchase likelihoods.

6. The results of the laboratory experiment were quite consistent with the results of the field experiment and the mail survey with respect to purchase likelihoods by region. Only one respondent reported a higher purchase likelihood for Texas brands versus California brands. By contrast, purchase likelihoods by color and variety were more evenly distributed. Thirty-three percent of the respondents were most likely to buy red wines, 50 percent were most likely to buy white wines, and 17 percent preferred rosé wines. Purchase likelihoods by variety also varied. Sixtyseven percent of the respondents were most likely to buy Chardonnays versus 33 percent for Rieslings, 80 percent were most likely to buy Cabernet Sauvignons versus 20 percent for Chiantis, and 63 percent preferred White Zinfandels versus 37 percent for Table Blushes.

7. As an example, suppose a respondent's baseline purchase likelihoods were 2 and 5 for Texas and California, respectively; 6, 2, and 1 for white, rosé, and red, respectively; and 3 and 7 for Rieslings and Chardonnays, respectively. If that respondent were rating a Texas brand in the organized by region condition, Texas would be the "disliked" attribute value on the focal attribute (because 2 < 5). According to Hypotheses 1a and 2a, this would lead to a lower purchase likelihood for that Texas brand, holding color and variety constant, relative to when the wines were organized by color. However, according to Hypothesis 3, this negative effect would be more pronounced for Texas Chardonnays than for Texas Rieslings (because 7 > 3). Of course, California brands would have higher purchase likelihoods when the wines were organized by region versus by color, again because 5 > 2.

8. The display format manipulation had little or no effect on the baseline purchase likelihood measures used to define *preferred* versus *disliked* attribute levels.

9. The results of Richardson, Dick, and Jain (1994) imply that the opposite may be true; perceptions of intrinsic product characteristics varied considerably depending on contextual variables (i.e., whether the prod-

uct was a national or private label brand). However, the intrinsic attributes examined by Richardson et al. were probably less salient than wine color.

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