The Impact of Bilingual Labeling in the U.S. on Package and Product Evaluation

Mahesh Gopinath
*Old Dominion University*, mgopinat@odu.edu

Myron Glassman
*Old Dominion University*, mglassma@odu.edu

Prashanth Nyer
*Chapman University*, nyer@chapman.edu

Follow this and additional works at: [https://digitalcommons.georgiasouthern.edu/jamt](https://digitalcommons.georgiasouthern.edu/jamt)

Part of the [Marketing Commons](https://digitalcommons.georgiasouthern.edu/jamt)

**Recommended Citation**


This article is brought to you for free and open access by the Journals at Digital Commons@Georgia Southern. It has been accepted for inclusion in Journal of Applied Marketing Theory by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact digitalcommons@georgiasouthern.edu.
The Impact of Bilingual Labeling in the U.S. on Package and Product Evaluation
Mahesh Gopinath, Myron Glassman and Prashanth Nyer

An Examination of Motivation and Identification of Football Fans
Jennifer Mak, Carina King and Jinmoo Heo

Examining Differences among Primary and Secondary Rivals: Are Fan Perceptions, Behavioral, and Consumption Intentions Influenced by Degree of Rivalry?
Cody T. Havard and Lamar Reams

Consuming Digital Technologies to Enact Identities: An Exploratory Study Among Mothers
Meera Venkatraman

Regulatory Focus and Risk Factors in Travel Planning
Mike Musante and David Bojanic

Editors
Richard E. Mathisen
Michael Musante
Michael McCall
The Impact of Bilingual Labeling in the U.S. on Package and Product Evaluation

Mahesh Gopinath, Myron Glassman and Prashanth Nyer

ABSTRACT
This paper explores the effect of bilingual (English-Spanish) product packaging on the perceptions of U.S. consumers toward the package and the product inside. Two experimental studies show that 1) products in bilingual packages are seen as targeting Hispanics living in the U.S., 2) package characteristics and the product itself are rated lower when the product is in a bilingual package versus an English-only package, especially among highly ethnocentric subjects, and 3) of the three bilingual formats tested (English on two sides with Spanish on the other two; an English paragraph followed by a Spanish paragraph on the same side; and alternating lines of English and Spanish on the same side), the alternating paragraph format is rated most favorably.

INTRODUCTION
Today, approximately 17% of the U.S. population identifies itself on the Census survey as being of “Hispanic origin,” a group we will refer to as “Hispanics.” Although this self-identification says nothing about the person’s ability to speak or understand Spanish or English or the strength of the person’s Hispanic identity, it appears as though marketers assume that people of Hispanic origin either prefer to or need to be communicated with in Spanish. This statement is based on the recent appearance of packaging in the U.S. that is bilingual, i.e., it contains information in both English and Spanish (Levy, 2009). This approach ignores the reactions of non-Spanish-speaking U.S. consumers to bilingual packaging. This reaction and its implications for marketers is the focus of the research presented here. After discussing the role of packaging; issues related to culture, ethnocentrism, and attitudes toward Hispanics living in the U.S. are presented. Next, Study 1 which compares attitudes toward English-only versus English-Spanish packaging is reported. This is followed by Study 2 where the impact of three bilingual packaging formats on packaging and product attributes is investigated. The paper concludes with managerial implications.

THE ROLE OF PACKAGING
We have chosen to study bilingual marketing in the context of product packaging because packaging may be one of the most important factors influencing point-of-sale purchase decisions (Prendergast and Pitt, 1996). About 70% of supermarket purchase decisions are made in-store for pre-packaged goods (Schoormans and Robben, 1997; Rettie and Brewer, 2000). Overall, it is estimated that 73% of purchase decisions are made at the point-of-sale (“Frontier,” Henley Centre, 1996). Packaging is clearly an essential part of the in-store selling process (Rettie and Brewer, 2000) and helps explain
the recent interest in retail shopper marketing (Newman, Howlett and Burton, 2014; Ailawadi et al., 2009; Shankar et al., 2011).

A well-designed package not only protects the product and makes it easy to use, but also provides essential product information while attempting to differentiate the brand as it sits on the shelf (Holdway, Walker and Hilton, 2002). The package’s impact on product choice is believed to be a function of two factors: the package’s visual elements and the package’s informational elements. Research shows that a package’s visual elements influence product choice, and that graphics and color are frequently the major determinants of this choice (Rettie and Brewer, 2000). This is especially true for low-involvement products (Kuvykaite et al., 2009). Attractive packaging grabs and holds consumer attention by breaking through the competitive clutter, an important consideration given that there are an estimated average of 38,000 different products in a single store (Hesterman, 2011).

In addition to visual elements, informational elements of product packaging also influence choice especially for low-involvement products (Newman, Howlett and Burton, 2014; Ailawadi et al., 2009). Not surprisingly, product choice under these circumstances is often determined by the package’s ability to successfully communicate the want-satisfying attributes of the product more effectively than the competition. The package is the critical factor in the consumer decision-making process because it sells to the consumer while the decision is being made. As such, the old saying that the package is the “salesman on the shelf” (Pilditch, 1972) is as valid today as it was over 40 years ago.

PACKAGE EVALUATION AND PRODUCT EVALUATION

Package evaluation takes many forms since the package performs many functions. For example, packaging can be evaluated based on whether it protects the product, properly contains it, provides clear use instructions, minimizes environmental impact, or promotes the product. Of relevance here is evaluating the package based on how well it promotes the product. From a promotion perspective, whether the package is viewed as a salesman on the shelf or an advertising billboard in the kitchen, it is a communication tool, much like advertising, and should be evaluated as such. This evaluation can take many forms, for example, whether the consumer likes the way the package communicates, whether it generates product awareness, or whether it contributes toward a positive attitude toward the product. Other forms of package evaluation include positive purchase interest, uniqueness compared to competitive packages, and fit with brand image (Thomas, 2012).

As with any marketing communications tool, marketers hope that the packaging will make a positive contribution to sales. Since the relationship between package evaluation and sales may be difficult to measure, marketers often take a hierarchical approach. Using this approach, marketers assume that package evaluation has an impact on product evaluation (Ruumpol, 2014) which, in turn, leads to purchase. This logic is similar to that of the attitude-toward-the-ad model where liking of the ad is assumed to be related to attitude toward the product (MacKenzie, Lutz and Belch, 1986). Since many believe that there is often a relationship between attitude and behavior (Fishbein and Ajzen, 1974; Werner, 1978; Ajzen and Fishbein, 1977, 1980), it is not surprising that recent research supports the idea that attitude toward the package impacts attitude toward the product inside (Gopinath, Glassman and Nyer, 2013).

CULTURE, ETHNOCENTRISM, AND ATTITUDES TOWARD HISPANIICS IN THE U.S.

Culture, attitudes toward a culture, and ethnocentrism form the basis of the Culture of Targeting (COT) effect (Gopinath, Glassman and Nyer, 2013). This phenomenon is based on the idea that different cultural groups often speak unique languages, and that these groups may vary in perceived status and in the qualities, characteristics, and attributes they look for in the products they buy. As such, consumers can infer the culture being targeted by the marketer through the language used in the marketing communication. This inferred target market information may, in turn, cause inferences to be made about the qualities of the product based on the consumer’s perception of the target market and its buying behaviors. Since the Hispanic culture is different from the overall U.S. culture in many ways (Hofstede, 2001), attitudes toward Hispanics are expected to influence
evaluations of products seen as targeting them.

To better understand COT, it is helpful to understand culture. Culture is a “... stable process of collectively made, reproduced, and unevenly shared knowledge structures that are informational and meaningful, internally embodied, and externally represented and that provide predictability, coordination equilibria, continuity, and meaning in human actions and interactions” (Patterson, 2014, p. 1). To put it more simply, culture provides the rules and, most importantly, the language to convey those rules that organizes one’s world. Not surprisingly, many believe that there is a strong relationship between language and culture, specifically, that a group’s culture is influenced by its language. This relationship was first studied by Sapir and Whorf (Sapir, 1921; Sapir, 1929; Whorf, 1940; Whorf, 1956) and more recently by DeAndrea, Shaw and Levine (2010), Ji, Zhang and Nisbett (2004), and Boroditsky (2001).

Since language is often identified with culture, language may evoke ethnocentric feelings. Ethnocentrism refers to the tendency of people to view their own cultural group as being superior, and to accept those who are culturally similar while rejecting those who are culturally dissimilar (Booth, 1979; Worcels and Cooper, 1979; Adorno et al., 1950; Shimp and Sharma, 1987; Netemeyer et al., 1991; Czinkota and Ronkainen, 1998). Given the relationship between language, culture, and ethnocentrism, it is reasonable to expect that those consumers who see English as the language that represents America’s culture may feel that the presence of Spanish on a product’s package is inappropriate. This perception, in turn, may cause a negative evaluation of a bilingual package and the product inside.

In addition to ethnocentrism, attitudes toward Hispanics living in the U.S. are expected to influence the response to bilingual packaging. Considerable work has examined the attitudes towards ethnic groups and found that ethnic cues, e.g., language, can influence one’s perception of a group’s members and behaviors (Brader, Valentino and Suhay, 2008; Gillian and Iyengar, 2000; Glaser, 2002) causing an ethnic group to be viewed as an in- or out-group (Tajfel, 1982). Recent research supports the idea that Hispanics differ from non-Hispanics both in terms of easily identifiable characteristics such as names and language as well as values, culture, norms and behaviors (Timberlake and Williams, 2012; Marin and Marin, 1991; Stone-Romero, Stone and Salas, 2003).

Hispanics living in the U.S. tend to have less education and lower-wage jobs (Perlmann, 2005; Telles and Ortiz, 2008) compared to the rest of the population. As such, Spanish tends to be associated with a lower socioeconomic status (Barker et al., 2001; Haarmann, 1986; Koslow et al., 1994; Platt and Weber, 1984). Therefore, it is not surprising that Hispanics are viewed as purchasing lower quality products (Barker et al., 2001; Haarmann, 1986; Koslow et al., 1994). Finally, because of the ongoing immigration from Latin America and related immigration issues, all Hispanics, regardless of citizenship status, may be considered part of a foreign-born out-group (Gutierrez, 2010). Therefore, Hispanics living in the U.S. are likely to have out-group status which may evoke a negative response to products seen as targeting them (Guerrero and Posthuma, 2013).

To summarize, because there are over 50 million people living in the U.S. who self-identify as Hispanic, marketers rightly believe that this group is too big to ignore. Based on the prevalence of bilingual packaging, it is reasonable to infer that marketers believe that putting Spanish on a product's package is an appropriate method of targeting that group. At the same time, bilingual marketing efforts may evoke ethnocentrism and negative attitudes toward this group. In turn, these feelings may lead to lower evaluations by non-Hispanics of products and their packaging seen as targeting Hispanics.

Given this conundrum, the purpose of this paper is to investigate the impact of having English and Spanish on product packages which will be referred to as bilingual packaging. Specifically, consumer reactions to the following types of packaging are compared in two studies: 1) a package with English-only product information versus 2) one with product information in English on one side and Spanish on the other versus 3) a package where the product information in English and Spanish appear on the same side, the Spanish paragraph below the English, versus 4) a package where each line of
product information in English is followed by the same information in Spanish.

**STUDY 1**

**Hypothesis for Study 1**

As mentioned, Hispanics currently represent approximately 17% of the U.S. population. The distribution of Hispanics across the U.S. varies from 1.3% in West Virginia to 38.2% in Texas and California. In the state where the studies were conducted, 8.4% of the population is Hispanic. As such, it is likely that consumers believe that bilingual packaging is specifically targeting Hispanics living in the U.S. Therefore, it is hypothesized:

H1: Bilingual packaging will be perceived as targeting Hispanics living in the U.S.

Considering the negative stereotypes of Hispanics, it is expected that a product in a bilingual package would be rated less favorably than a product in an English-only package. Given that Hispanics may be perceived as an “out-group” and given the presence of ethnocentrism, the inclusion of Spanish on the packaging should result in lower evaluations of the packaging, namely, the ratings of a package’s readability, interestingness, persuasiveness, visual appeal, and design. Hence, the following hypotheses about package evaluation and product evaluation are made.

H2a: Bilingual packaging will be evaluated less favorably than English-only packaging.

H2b: Products in bilingual packaging will be evaluated less favorably than those in English-only packaging.

Based on the COT effect, bilingual packaging may be seen as targeting Hispanics living in the U.S. For those who do see bilingual packaging as targeting Hispanics living in the U.S., the following hypotheses about package evaluation and product evaluation are made.

H3a: Subjects who perceive the product as targeting Hispanics living in the U.S. will evaluate a bilingual package lower than those who do not.

H3b: Subjects who perceive the product as targeting Hispanics living in the U.S. will evaluate a product in a bilingual package lower than those who do not.

In addition to the Culture of Targeting effect, ethnocentrism is also expected to impact the evaluation of a bilingual package and the product inside. Hence, the following hypotheses about the impact of ethnocentrism on package evaluation and product evaluation are made.

H4a1: Subjects high in ethnocentrism will evaluate a bilingual package lower than an English-only package.

H4a2: Subjects high in ethnocentrism will evaluate the product in a bilingual package lower than one in an English-only package.

H4b1: Subjects low in ethnocentrism will evaluate a bilingual package the same as an English-only packaging.

H4b2: Subjects low in ethnocentrism will evaluate the product in a bilingual package the same as one in an English-only package.

A higher evaluation of the packaging should lead to a more favorable evaluation of the product. This relationship is based on previous research showing that expectations of positive traits are higher for products with attractive versus unattractive exterior appearances (for a review see Eagly et al., 1991). Furthermore, Vilnai-Yavetz and Ran (2013) show that purchase intentions are a function of package instrumentality, aesthetics, and symbolism. Therefore, the following is hypothesized about the relationship between package evaluation and product evaluation.

H5: Higher evaluation of the packaging will lead to a higher evaluation of the product.
Language is expected to have a direct impact on package evaluation as well as on product evaluation. At the same time, language is expected to affect product evaluation through package evaluation. Hence, we expect the following relationship between package and product and language (see Figure 1 for a representation of this mediating relationship).

**Figure 1**

Model for mediation effect of Package Evaluations

![Model](image)

H6: Package evaluation will partially mediate the effect of language on product evaluation.

**Methodology for Study 1**

The stimulus was a photograph of a boxed microwave oven sold at Wal-Mart. A microwave oven was chosen because it is ubiquitous on university campuses and is priced sufficiently high such that subjects would be concerned about the quality of this non-convenience good purchase (Consumer Reports 2015; Bastin, 1994). Also, the results of a pre-test with 35 undergraduate students indicated a high level of familiarity (4.9/5), involvement (4.2/5), and frequency of use (4.9/5) a microwave. Photoshop was used to modify the photo based on the desired manipulation of the independent variables. A sample manipulation is shown in Figure 2.

The on-line study began by gathering personal information. This was followed by a presentation of one of the stimulus packages and ended with the subject evaluating the product. A manipulation check assessing the languages seen on the package was also included. In Study 1, the focus was on whether the language on the package was English-only or bilingual. In the bilingual condition, the information was presented in the alternating paragraph format with an English paragraph followed by one presenting the same information in Spanish. The subjects were 197 students at a major, public Mid-Atlantic university fulfilling a course requirement. The sample included 104 females with an average age of 25.5 years and 93 males with an average age of 25.9 years. The age difference was not statistically significant.

Evaluation of the microwave packaging and the microwave itself was measured using seven-point bipolar Semantic Differential scales. The packaging was evaluated by measuring four items: readability, persuasiveness, visual appeal, and design, on a scale anchored by good and bad. These items were chosen based on a review of the literature (Fox, 1987; Clement, 2007; Richards and Curran, 2002; Ambrose and Harris, 2002; Ambrose and Harris, 2005; Klimchuk and Krasoves, 2006). According to Fox (1987), readability refers to the ability of a package to effectively communicate the brand name. Visual appeal refers to characteristics of the packaging such as liking, pleasantness,
and wanting to take another look at the package.

Figure 2
Sample Manipulation: English and Spanish Version

The microwave oven itself was evaluated by using seven, seven-point bipolar Semantic Differential scales. Four items measured the quality of the microwave by asking: “The microwave shown in the picture is” (good-bad, low quality-high quality, not satisfying-satisfying, and not attractive-attractive) while three assessed general feelings toward it by asking: “My feelings towards the microwave shown in the picture are” (pleasant-unpleasant, favorable-unfavorable, and love-hate). Ethnocentrism was measured using the 17-item CETSCALE developed and tested by Shimp and Sharma (1987). It measures the extent to which consumers feel that buying foreign products is unpatriotic or immoral because of their adverse impact on jobs and the economy. Using a seven point agree-disagree scale, it measures one’s normative beliefs about the morality of purchasing non-U.S. products and includes the moral, economic, and social implications of those purchases (Herche, 1992). The questions included: buy American-made products; keep American working; American products, first, last, and foremost; purchasing foreign-made products is un-American; purchasing foreign-made products is un-American; and it is not right to purchase foreign products. To validate the manipulation, subjects were asked about the languages seen on the package.

Results of Study 1

After excluding 28 subjects who mis-identified the language(s) on the package, one hundred sixty-nine subjects were included in further analyses. A reliability test was performed for the scales used in the study. The Cronbach alpha for the seven product evaluation measures and the four package evaluation were 0.79 and 0.86 respectively, while that for the 17-item CETSCALE used to measure ethnocentrism was 0.96. The seven product evaluation measures were factor analyzed and since these items formed a single factor with high factor loadings, a new dependent variable ‘product evaluation’ was formed using factor-based scores. A factor analysis was also performed on the four package evaluation measures (readability, persuasiveness, visual appeal, and clutter), and since they formed a single factor with high factor loadings, factor-based scores were used to form the ‘package
evaluation’ variable.

While the CETSCALE has been shown to exhibit a unidimensional structure with U.S. based subjects, there has been some work done in recent years on a multi-dimensional structure for CETSCALE (see Jimenez-Guerrero et. al. 2014 for a discussion). A factor analysis performed on the CETSCALE confirmed a single factor with high factor loadings, and following the practices used by Shimp and Sharma, the originators of the CETSCALE (Shimp and Sharma, 1987; Sharma, Shimp and Shin, 1995), a factor-based scale was computed.

The first hypothesis predicted that bilingual packaging will be seen as targeting Hispanics living in the U.S. To test the hypothesis, subjects were asked to indicate their perception of the product’s target market. The choices, of which they could choose as many as desired, included “white Americans” as well as other cultural groups living in the U.S., e.g., “blacks or African-Americans,” “Hispanics/Latinos living in the U.S.,” as well as people living in other countries, e.g., “Hispanics/Latinos living in Mexico, Central or South America.” The percentage of subjects indicating that the product was targeting Hispanics living in the U.S. (66.7%) was significantly higher (p<.01) than those indicating that it was targeting others. Hence, as seen in Table 1, H1 was confirmed.

Hypothesis 2 addressed whether subjects will evaluate a bilingual package and the product in that package less favorably than in an English-only package. Analysis of variance was done with product and package evaluations as the dependent variables and package language as the predictor variable. As seen in Table 1, both hypothesis 2a and 2b were supported. The English-only package was evaluated significantly more favorably (mean = 3.92) compared to the bilingual package (mean = 3.55) (p < .05, F1,167= 7.32). Similarly, the product in the English-only package was evaluated more favorably (mean = 4.32) compared to the product in the bilingual package (mean = 3.76) (p < .01, F1,167=17.82).

Hypothesis 3a and 3b examined the effect of the Culture of Targeting on package and product evaluations. Specifically, it was predicted that subjects who felt the product was targeting Hispanics living in the U.S. would rate both the product and the package less favorably than those who did not. To test H3a, a univariate ANOVA was done with the target group as the predictor variable and package evaluation as the dependent variable. As seen in Table 1, the mean package evaluation was lower for those who felt the product was targeting Hispanics living in the U.S. (mean = 3.58) versus for those who felt the product was not targeting Hispanics (mean = 4.33) (p <.05, F1,167=4.76). To test H3b, a univariate ANOVA was performed with the target group as the predictor variable and product evaluation as the dependent variable. H3b was supported at p<.05 (F1,167=4.83). The mean product evaluation was 3.87 for those who felt the product was targeting Hispanics living in the U.S. versus 4.28 for those who felt the product was not targeting Hispanics.

Hypothesis 4 examined the effect of ethnocentrism on the evaluation of bilingual packaging compared to English-only packaging. Specifically, subjects high in ethnocentrism were expected to evaluate the bilingual packaging and the product in that bilingual package lower than an English-only package while subjects low in ethnocentrism should evaluate a bilingual package the same as an English-only package. ANOVA was done with ethnocentrism and language version as predictor variables and package evaluation as the dependent variable. As seen in Table 1, the hypothesis was supported. Subjects high in ethnocentrism rated both the bilingual package and the product in the bilingual package lower than the English-only package. The average package evaluation was 3.64 for the bilingual package versus 4.18 for the English-only package (F1,165 = 12.24, p < .05) and the average product evaluation was 3.45 vs 4.61 respectively (F1,92 = 19.82, p< .01). For subjects low in ethnocentrism, there was no difference between the evaluation of a bilingual versus an English-only package or between products in a bilingual package versus in an English-only package.

Hypothesis 5 predicted that package evaluation will affect product evaluation. This was confirmed by an ANOVA using a median split of package evaluation as the predictor variable and product evaluation as the dependent variable. Those who evaluated the package less favorably (based on the
median split) had a mean product evaluation of 3.56 while those who gave the package a higher evaluation had a mean product evaluation of 4.84 (see Table 2). This difference was significant at p<.001 (F1,167=44.21).

Table 1
Summary of Hypotheses for Study 1

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Significance</th>
<th>Mean for English Package</th>
<th>Mean for Bilingual Package</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Bilingual packaging will be perceived as targeting Hispanics living in the U.S.</td>
<td>(p&lt;.01)</td>
<td>47.3%</td>
<td>66.7%</td>
<td>Supported</td>
</tr>
<tr>
<td>H2a: Bilingual packaging will be evaluated less favorably than English-only packaging.</td>
<td>(p&lt;.05)</td>
<td>3.92</td>
<td>3.55</td>
<td>Supported</td>
</tr>
<tr>
<td>H2b: A product in bilingual packaging will be evaluated less favorably than English-only packaging.</td>
<td>(p&lt;.01)</td>
<td>4.32</td>
<td>3.76</td>
<td>Supported</td>
</tr>
<tr>
<td>H3a: Subjects who perceive the product as targeting Hispanics living in the U.S. will evaluate bilingual packaging lower than those who do not.</td>
<td>(p&lt;.05)</td>
<td>4.33</td>
<td>3.58</td>
<td>Supported</td>
</tr>
<tr>
<td>H3b: Subjects who perceive the product as targeting Hispanics living in the U.S. will evaluate a product in bilingual packaging lower than those who do not.</td>
<td>(p&lt;.05)</td>
<td>4.28</td>
<td>3.87</td>
<td>Supported</td>
</tr>
<tr>
<td>H4a1: Subjects high in ethnocentrism will evaluate a bilingual package lower than an English-only package.</td>
<td>(p&lt;.05)</td>
<td>4.18</td>
<td>3.64</td>
<td>Supported</td>
</tr>
<tr>
<td>H4a2: Subjects high in ethnocentrism will evaluate the product in a bilingual package lower than an English-only package.</td>
<td>(p&lt;.01)</td>
<td>4.61</td>
<td>3.45</td>
<td>Supported</td>
</tr>
<tr>
<td>H4b1: Subjects low in ethnocentrism will evaluate a bilingual package the same as an English-only package.</td>
<td>p=0.17</td>
<td>3.75</td>
<td>3.40</td>
<td>Supported</td>
</tr>
<tr>
<td>H4a2: Subjects low in ethnocentrism will evaluate the product in a bilingual package the same as one in an English-only package.</td>
<td>8</td>
<td>4.2</td>
<td>3.99</td>
<td>Supported</td>
</tr>
<tr>
<td>H5: Higher evaluation of the packaging will lead to a higher evaluation of the product.</td>
<td>(p&lt;.001)</td>
<td>4.84 (high product evaluation)</td>
<td>3.56 (low product evaluation)</td>
<td>Supported</td>
</tr>
<tr>
<td>H6: Package evaluation will mediate the effects of language on product evaluation.</td>
<td>Partial mediation</td>
<td>0.61 (Beta for direct effect)</td>
<td>0.33 (Beta for indirect effect)</td>
<td>Supported</td>
</tr>
</tbody>
</table>

A two-step ANCOVA was performed to verify the role of package evaluation as a confirmed by an ANOVA using a median split of package evaluation as the predictor variable and product evaluation...
as the dependent variable. Those who evaluated the package less favorably (based on the median split) had a mean product evaluation of 3.56 while those who gave the package a higher evaluation had a mean product evaluation of 4.84 (see Table 1). This difference was significant at p<.001 (F1,167=44.21). mediator of the effect of ethnocentrism and language on product evaluations (H6). A median split divided the sample into those low and high on ethnocentrism.

The mediation analysis is based on the regression procedure suggested by Judd and Kenny (1981b) where mediation is tested using four steps. This method of mediation analysis has been used by different authors in the marketing literature (Zhan, Sharma and Chan, 2015; Gabrielsson, Seppala and Gabrielsson, 2016; Song and Song, 2010). First, the effect of language on the mediator (package evaluation) was examined. The relationship between language and the dependent variable (product evaluation) was then examined. The effect of the mediator - package evaluation on the dependent variable - product evaluation was then investigated. Finally, the combined effect of the independent variable – language and the mediator - package evaluation on the dependent variable product evaluation was modeled. The p values and F values and beta coefficients of these regressions are presented in Table 2 below. All four regressions are significant as predicted. When the mediator (package evaluation) is included in the regression along with the independent variable - language, there is a significant reduction in the size (from 0.61 to 0.33) of the beta coefficient for language, suggesting partial mediation of the effect of language on product evaluations by the mediating variable – package evaluations. These results held true when tested by the Barron and Kenny’s (1986) ANOVA method as well.

Table 2
Mediation Analysis Results

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Dependent</th>
<th>Beta coefficient</th>
<th>P value</th>
<th>F value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Language</td>
<td>Package Evaluation</td>
<td>0.44</td>
<td>0.01</td>
</tr>
<tr>
<td>Step 2</td>
<td>Language</td>
<td>Product Evaluation</td>
<td>0.61</td>
<td>0.00</td>
</tr>
<tr>
<td>Step 3</td>
<td>Package evaluation</td>
<td>Product Evaluation</td>
<td>0.46</td>
<td>0.00</td>
</tr>
<tr>
<td>Step 4</td>
<td>Language (with package evaluation)</td>
<td>Product Evaluation</td>
<td>0.33</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Since the introduction of the mediator (package evaluation) as a covariate caused the value of the unstandardized beta coefficient of the direct effect of language on product evaluation to be reduced from 0.61 to 0.33, it is clear that package evaluation partially mediates the effect of language on product evaluation. The significance of the mediation was tested using the bootstrapping approach, of Preacher and Hayes (Preacher & Hayes, 2004; Hayes, 2009). Bootstrapping was done with 10,000 samples for calculating the confidence intervals at 95% confidence level. Both the direct effect and the indirect effects were significant.

Discussion of Study 1

All six hypotheses were supported. H1 predicted that a bilingual package will be viewed as targeting Hispanics living in the U.S. H2 predicted that bilingual packaging will be evaluated less favorably than English-only packaging. H3 confirmed the Culture of Targeting effect in that subjects who believed that the bilingual package was targeting Hispanics living in the U.S. rated
both the bilingual package and the product in the bilingual package less favorably than those who did not see the bilingual packaging as specifically targeting Hispanics living in the U.S. Regardless of the perceived culture of targeting, subjects high in ethnocentrism evaluated the bilingual package and the product in the bilingual package less favorably than in an English-only package (H4). Regardless of whether the package was bilingual or English-only, subjects low in ethnocentrism gave similar ratings to the bilingual package as well as the product in it. Study 1 also demonstrated that product evaluation is influenced by package evaluation (H5). Note that the data does not show that the response to the bilingual packaging was negative and the English-only was positive, but only that the response to bilingual packaging was significantly less favorable than English-only packaging.

Mediation analysis established that the effect of language on product evaluation was due to the impact of these variables through package evaluation (H6) as well as directly. Previous research has shown that language has an effect on product evaluation (Gopinath and Glassman, 2008; Gopinath, Glassman and Nyer, 2013). This study expands on these findings by showing that language affects product evaluation through package evaluation as well as directly.

**STUDY 2**

The purpose of Study 2 is to determine how different bilingual package formats impact package evaluation. To do this, three different formats typically found in the U.S. marketplace were compared. In one, the product description was in English on two sides of the package and Spanish on the other two, i.e., the alternating side format. In the second, the English description was in a paragraph followed by a paragraph in Spanish, i.e., the alternating paragraph format. Here, all four sides were identical. The third format had each line of the English description followed by a Spanish translation, i.e., the alternating line format. Here, too, the four sides were identical.

**Hypotheses for Study 2**

The way bilingual package information is presented should affect information processing and subsequent package evaluation, i.e., package readability and package persuasiveness. This is based on the notion that the format used impacts complexity which in turn impacts information processing (Chebat et al., 2003). As such, differential information processing should result in different reactions to the package. Because complex claims are more likely to be ignored (Toncar and Munch, 2001), the higher the format complexity, the lower the level of readability and the less persuasive the message. Consequently, the following relationship between formatting, readability, and persuasiveness of the package is hypothesized:

**H7:** Different formatting of English and Spanish on product packaging will have a significant effect on package readability and persuasiveness.

Some consumers may interpret the alternating side format as giving Spanish the same status as English (Feshbach, 1994; Kosterman and Feshbach, 1989; Sidanius, Feshbach, Levin and Pratto, 1997). In addition, this format may lead to a Spanish-only point of purchase display, i.e., all facings are the Spanish-only side of the package. Both situations may evoke a nationalistic or ethnocentric reaction resulting in a negative affective response that negatively impacts perceived readability and subsequent information processing. Hence, packaging with both languages on the same side is expected to be more readable and therefore more persuasive (Fox, 1987). This leads to the following hypotheses about formatting and package readability and persuasiveness.

**H8a:** Packages with English and Spanish on different sides will have a lower level of **readability** than those with English and Spanish as two paragraphs on the same side.

**H8b:** Packages with English and Spanish on different sides will have a lower level of **persuasiveness** than those with English and Spanish as two paragraphs on the same side.
With the alternating paragraph format, the information in English is always visible. While the alternating line format also has English always facing the consumer, it could be much more difficult to read since the consumer will have to alternate between reading a line she understands and reading a line she is not likely to understand.

When text is difficult to read as with the alternating line format, people tend to allocate most of their cognitive resources to comprehension and significantly less for storage (Daneman and Carpenter, 1983) because they focus on the complex word or sentence, i.e., the Spanish line. The alternating line format causes readers to engage in "regressive fixations" resulting in forced attention to the Spanish line and poor comprehension of the English message. If the comprehension demands exceed the resources available to the memory system, a trade-off occurs that may lead to forgetting some or all of the previously processed information, i.e., the information provided in English. These difficulties are expected to have a negative impact. This leads to the next two hypotheses about formatting and package readability and persuasiveness.

H9a: Packages with English and Spanish as alternating paragraphs on the same side will have a higher level of readability than those with English and Spanish appearing in alternating lines on the same side.

H9b: Packages with English and Spanish as alternating paragraphs on the same side will have a higher level of persuasiveness than those with English and Spanish appearing in alternating lines on the same side.

Providing readable and persuasive information on the package should allow the package to more effectively sell the product (Fox, 1987). This leads to the final hypothesis about the relationship between package readability and persuasiveness and product evaluation.

H10: Higher levels of readability and persuasiveness will lead to higher product evaluation.

Methodology for Study 2

The same photo used in Study 1 was used to create the three package formats (Figure 3).

Figure 3

Product Manipulations for Study 2

| English and Spanish on two sides of package. | English and Spanish paragraphs on same side of package. | English and Spanish line by line on same side of package. |

The on-line study began by gathering the same personal information measured in Study 1. This was followed by a presentation of one of the three stimulus packages and ended with the subject evaluating the packaging and the product. The evaluation of the packaging was measured using seven, seven-point bipolar Semantic Differential scale items. They measured readability, persuasiveness, visual appeal, and design using the same format as was used in Study 1. Because the focus of Study 2 was the presentation format, three additional variables were measured: layout, understandability, and interestingness of the package. A seven point bipolar Semantic Differential
scales with bad and good as end points was used. Evaluation of the microwave was measured using the same seven, seven-point bipolar Semantic Differential scale items and format as was used in Study 1. Four items measured the quality of the microwave (good-bad, low quality-high quality, not satisfying-satisfying, and not attractive-attractive) while three assessed general feelings toward it (pleasant-unpleasant, favorable-unfavorable, and love-hate). A manipulation check also verified whether the subject had noticed that the packaging featured Spanish text.

Data was collected for Study 2 from 329 students at a major, public Mid-Atlantic university. The sample included 143 males with an average age of 23.9 and 186 females with an average age of 25.3. There was no significant difference in age.

**Results of Study 2**

As a result of the manipulation check, 64 subjects were excluded from subsequent analysis. These were subjects who did not identify the language on the box as Spanish. Two hundred sixty-eight subjects were included in the subsequent analyses.

The seven items that evaluated the product were factor analyzed and since they formed a single factor, factor-based scores were used to form the dependent variable - product evaluation. The one factor explained 68.33% of the variance in the data. The seven items that measured the subjects’ reaction to the packaging were also factor analyzed using a varimax rotation and yielded two factors that explained 65.45% of the variance. Readability, layout, and understanding loaded on one factor, and these items were used to create factor-based scores for the variable “readability.” Interestingness, persuasiveness, visual appeal, and design loaded highly on the second factor and factor-based scores were used to form a variable called “persuasiveness.”

Hypothesis 7 predicted a format effect, specifically the form of the bilingual message on the packaging would have a differential effect on persuasiveness and readability. An omnibus test (MANOVA) was performed using the format version as the predictor variable with persuasiveness and readability as the dependent variables. The values for Wilkes Lambda were significant at (p<.001, F2, 264=1564.55) confirming H7. Thus, the basic premise of Study 2 was confirmed (see Table 3). H8 and H9 made predictions about the relative effectiveness of the three formats. H8a and H8b predicted that persuasiveness and readability will be higher when English and Spanish are presented as two alternating paragraphs on the same side versus having a single language on each side. To test H8a and H8b, two ANOVAs were performed with format as the predictor variable and readability and persuasiveness as the dependent variables. As seen in Table 3, the effect of format on readability was significant (p <.01, F1,171=28.34) as was the effect of format on persuasiveness (p <.01, F1,171=8.44), thus confirming both H8a and H8b. The mean readability score for the alternating paragraph format was 5.07 versus 3.87 for the alternating side format. The mean persuasiveness score for the alternating paragraph format was 3.87 versus 3.23 for the alternating side format.

ANOVA examining the difference between the alternating paragraph format versus the alternating line format were also significant for both readability (p<.01, F1,177=8.98) and persuasiveness (p <.05, F1,177=4.05) confirming both H9a and H9b (see Table 3). The mean score for readability for the alternating line format was 4.52 versus 5.07 for the alternating paragraph format. The mean persuasiveness score for the alternating line format was 3.47 versus 3.86 for the alternating paragraph format.

Hypotheses 10 dealt with the effect of package evaluation on product evaluation. It was expected that higher package evaluation would lead to higher product evaluation. To test H10, linear regression was used where product evaluation was the dependent variable and persuasiveness and readability were the independent variables. Tests for multi-collinearity were performed for the predictor variables since readability and persuasiveness were significantly correlated (r = 0.60 p <.01). The Variance Inflation Factor (VIF) value was less than 10 (1.55) and the tolerance value was more than 0.10 (0.65) indicating multi-collinearity was not significant and therefore not a concern.
The regression was significant at $p < 0.01$ ($F_{2,265}=141.82$). The $R^2$ was 0.52 meaning that 52% of the variance in product evaluation was accounted for by package evaluation, specifically readability and persuasiveness. The beta coefficient for readability was 0.12 and for persuasiveness it was 0.64 with both significant at $p <.01$, meaning that though both readability and persuasiveness significantly contributed to product evaluation, persuasiveness had a much larger impact on product evaluation than readability.

**Discussion of Study 2.**

H7 was supported, showing that format used on the bilingual package had a significant effect on package readability and persuasiveness. More specifically, the support of H8 and H9 showed that the alternating side format was the least readable and the least persuasive while the alternating paragraph format was the most persuasive and the most readable. Further, through H10, it was shown that this increase in persuasiveness and readability leads to a higher product evaluation. It is also noteworthy that planned contrast also found a significant difference between readability and persuasiveness when comparing the alternating side versus alternating line conditions, although these differences were not hypothesized.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Summary of Hypotheses for Study 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis</strong></td>
<td><strong>Significance</strong></td>
</tr>
<tr>
<td>H7: Different formatting of English and Spanish on product packaging will have a significant effect on package readability and persuasiveness.</td>
<td>$p &lt;.01$</td>
</tr>
<tr>
<td>H8a: Packages with English and Spanish on different sides will have a lower level of readability than those with English and Spanish as two alternating paragraphs on the same side.</td>
<td>$p &lt;.01$</td>
</tr>
<tr>
<td>H8b: Packages with English and Spanish on different sides will have a lower level of persuasiveness than those with English and Spanish as two alternating paragraphs on the same side.</td>
<td>$p &lt;.01$</td>
</tr>
<tr>
<td>H9a: Packages with English and Spanish as alternating lines on the same side will have a lower level of readability than those with English and Spanish as two alternating paragraphs on the same side.</td>
<td>$p &lt;.01$</td>
</tr>
<tr>
<td>H9b: Packages with English and Spanish as alternating</td>
<td>$p &lt;.05$</td>
</tr>
</tbody>
</table>
lines on the same side will have a lower level of persuasiveness than those with English and Spanish as two alternating paragraphs on the same side.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>p-value</th>
<th>Note 1</th>
<th>Note 2</th>
<th>Note 3</th>
<th>Note 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>H10: Higher levels of readability and persuasiveness will lead to higher product evaluation.</td>
<td>p &lt; .01</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Supported</td>
</tr>
</tbody>
</table>

**GENERAL DISCUSSION**

The first study shows that bilingual packaging is perceived as targeting Hispanics living in the U.S. and that bilingual packaging results in lower package and product evaluations. Not surprisingly, highly ethnocentric subjects, compared to those low in ethnocentrism, had a more negative response to bilingual packaging. Study 1 also established that package evaluation partially mediated the effect of language and ethnocentrism on product evaluation.

The English-Spanish format used in Study 1 was the alternating paragraph format. Study 2 found that this format was the most effective of the three tested. Yet, it was found to be rated lower than the English-only format examined in Study 1. Hence, the negative impact of bilingual packaging versus English-only packaging would have been greater had either the alternating side or alternating line formats been used in Study 1.

Mediation analysis showed that the effect of language on product evaluation is partially mediated by package evaluation. This finding highlights the impact of packaging on product evaluation. This is another argument for the need to view packaging as an important medium for persuasive communication.

Study 2 established that of the three formats tested, the alternating side format was viewed least favorably and the alternating paragraph format was evaluated most favorably. Reasons for why the alternating side format may be viewed adversely were discussed earlier. Although the presence of Spanish in the alternating paragraph and alternating line formats may evoke a negative response, English is likely viewed as the dominant language in these two formats, if for no other reason than it comes first. The lower evaluation of the alternating line format may be a result of the fact that, when compared to the alternating paragraph format, the alternating line format is more difficult to read. That is, for a non-Spanish speaker, the second line has no meaning which interferes with information processing. Also, when compared to the alternating paragraph format, the alternating line format may be seen as less English dominant.

**FUTURE RESEARCH AND LIMITATIONS**

Future research should determine if these findings are supported for different products and subject groups. For example, the stimulus used here was an unknown brand, Elektra. If the stimulus brand were a popularly priced brand, a premium brand, or a well-known foreign brand would the results be the same? How would the cost of the product affect the results?

Since research suggests that college students are less prejudiced than the general population (Petty, Fleming and White, 1999), how much greater if at all, would the negative impact be within the general public or in an area with a significant number of Hispanics such as Texas or California? Since research discussed below suggests that a certain segment of the Hispanic population may have a negative reaction to bilingual packaging, additional research is needed with this population. What, if anything, is the impact of other demographic variables such as age, gender, race, income, and geographic location? How would having to physically lift and manipulate the package affect the findings? Would findings differ as a function of the product’s size, weight, and ease of manipulation,
e.g., a microwave oven versus a clothes washer versus a tube of toothpaste? If a smaller or less prominent font were used to make it clear that Spanish was the second language, would the results change?

**IMPLICATIONS FOR MARKETING PRACTITIONERS**

Marketers’ desire to target Hispanics is logical since they represent a large, viable market segment. However, marketers may be ignoring two important issues. The first is related to a possible misreading of the Hispanic market, which comprises approximately 17% of the population. Marketers should be wary of assuming that there is a single Hispanic market and that it can be reached only via Spanish. A 2007 Pew Hispanic Center study (Hakimzadeh and Cohn, 2007) found that 1) nearly all Hispanic adults born in the United States of immigrant parents report they are fluent in English, 2) children of immigrants see English as their primary language, and 3) most Hispanics (approximately 90%) feel they have to learn English. In addition, a 2009 Pew Hispanic Center report found that two-thirds of Hispanics ages 16 to 25 are native-born Americans and virtually all (96%) third generation and 89% of second generation Hispanic youths say they describe themselves as “American.” In addition, there is some evidence that assimilated Hispanics resent bilingual packaging (Koslow, Shamdasani and Touchstone, 1994). Furthermore, recent findings by Dowling, Ellison and Leal (2012) reveal the high importance that citizen and non-citizen adults of Mexican origin living in Texas place on English proficiency and that Spanish speakers are actually the most likely to stress the importance of knowing English.

Second, marketers must also consider that the research presented here has shown that bilingual packaging results in lower package and product evaluations. This implies that marketers should consider abandoning bilingual marketing. However, those that wish to use bilingual marketing, should consider using the paragraph format with English in a larger font.
REFERENCES


**ABOUT THE AUTHORS**

**Mahesh Gopinath** is an Associate Professor of Marketing at the Strome College of Business in Old Dominion University, Norfolk, VA. He received his doctorate in Marketing from the University of Michigan, Ann Arbor.

**Myron Glassman** is a Professor of Marketing at the Strome College of Business in Old Dominion University, Norfolk, VA. He received his doctorate in Communications from the University of Illinois.

**Prashanth Nyer** is an Associate Professor of Marketing at the Argyros School of Business & Economics in Chapman University, Orange, CA. He received his doctorate in Marketing from the University of Michigan, Ann Arbor.