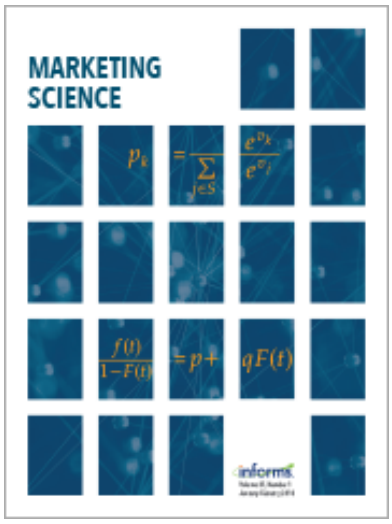

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The Effect of Cultural Orientation on Consumer Responses to Personalization

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While marketing activities increasingly involve personalizing product offers to individually elicited preferences, these unique specifications may not be universally important for product choice. Providing evidence of the limits of treating each customer differently, three experiments show that individuals who exhibit interdependent or collectivistic tendencies tend to be more receptive to recommendations that are not personalized to their own preferences, but instead to the collective preferences of relevant in-groups. However, we find that cultural orientation affects responses to personalized recommendations for only those products whose consumption or choice decision is subject to public scrutiny. We further demonstrate that the favorability of thoughts elicited by ads offering targeted versus personalized offers mediates the effect of cultural orientation on responses to personalization. Finally, both individualistic and collectivistic consumers respond more favorably to offers of targeted recommendations when they believe relevant others share their preferences and when their level of expertise is relatively low.

Key words: personalization; personal recommendations; culture
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The focus of marketing activities is shifting increasingly from market segments to individual consumers, seeking to customize or personalize offerings (e.g., Peppers and Rogers 1997, Simonson 2005), marketing interventions (Rust and Verhoef 2005), or pricing (Liu and Zhang 2006) to individual preferences. Whereas customization allows consumers to configure a final product by changing product attributes to match their preferences (e.g., Dell computers), personalization provides consumers with one or more recommended products currently available in the marketplace that match their measured or stored preferences most closely (e.g., one-to-one marketing and Internet recommendation agents; Wind and Rangaswamy 2001). While both customers and companies may benefit from tailoring product offers to distinctly unique preferences (e.g., Alba et al. 1997, Häubl and Trifts 2000, Lynch and Ariely 2000), the premise of treating each customer differently is based on the assumption that individuals rely on their own preferences when making choices and reward those companies that provide them with product offers that match their tastes most closely.

However, research in cross-cultural psychology has shown that consumers' individual preferences may often be less important (and hence less predictive of choice) than the collective preferences of relevant in-groups (e.g., Iyengar and Lepper 1999, Markus and Kitayama 1991). This suggests that consumers who exhibit interdependent or collectivistic tendencies may be less receptive to recommendations that are personalized to their individual preferences. Instead, they may be more likely to patronize marketers that provide them with recommendations based on the preferences of other consumers like them, limiting the success of individual marketing techniques.

In this research, we investigate cultural orientation—operationalized as interdependence versus independence (Study 1), collectivism versus individualism (Study 2), and ethnicity (Study 3)—as an important construct influencing consumer responses to the personalization of recommendations. The results of these three studies show that consumers who exhibit interdependent or collectivistic tendencies tend to respond more favorably to product recommendations that are based on the collective preferences of their in-group (hereinafter, targeted recommendations), as compared to recommendations based on their own individual preferences (hereinafter, personalized recommendations). However, supporting the promise of personalization, these results reverse for consumers who exhibit independent or individualistic tendencies. Furthermore, the effect of cultural orientation does not appear for personalized recommendations of products whose consumption or choice is not subject to public scrutiny. Finally, we show that both

individualistic and collectivistic consumers respond more favorably to a targeted recommendation when they believe relevant others share their preferences and when their level of expertise is relatively low. The findings of this research and the implications for marketers are discussed.

Theoretical Background

Personalization and Individual Preferences

The advent of the Internet and electronic commerce has enabled consumers to select from among a seemingly endless variety of products. However, consumers can only benefit from this plethora of choices if they have an efficient way to evaluate their options (e.g., West et al. 1999). Internet recommendation agents, such as those found on Amazon.com or Drugstore.com, as well as Active Buyers Guide or PriceSCAN, have been developed to help consumers cope with this potential information overload and to make their search for the best option more efficient. To achieve this goal, recommendation agents measure a consumer's preferences and then recommend from their database of available products only those options that best fit these individual specifications (e.g., Alba et al. 1997, Lynch and Ariely 2000, West et al. 1999). Over time, consumers increasingly benefit from personalization because the more they teach a company about their preferences, the better it will become at providing product recommendations that precisely meet their wants and needs. Conversely, companies benefit from such long-term "learning relationships" (Peppers and Rogers 1997, p. 14) because of increased customer loyalty—because switching to a competitor would require consumers to invest time and effort to reeducate the competing firm about their preferences.

While many factors influence the success of personalization, including the stability and clarity of consumers' preferences (Simonson 2005) and the transparency of the preference measurement task (Kramer 2007), prior research has generally confirmed personalization advocates' promise of greater customer satisfaction and higher retention rates. For example, Alba et al. (1997) suggest that interactive home shopping facilitated through the Internet, and recommendation agents in particular, will greatly benefit consumers by lowering their costs of searching for products and product-related information. Häubl and Trifts (2000) find that use of a recommendation agent leads to consideration sets that are smaller but of better quality (i.e., that do not include dominated alternatives) and less switching. Finally, Cooke et al. (2002) find that recommendation agents can increase demand for unfamiliar products, showing that consumers evaluate unfamiliar recommendations more favorably when they are provided without individuating information in the context of familiar, attractive recommendations.

In general, the process of personalization includes the elicitation of consumers' preferences, followed by the tailoring of product recommendations to these unique specifications. Therefore, personalization is based on the assumption that consumers' preferences are important in guiding choice; that is, that consumers appreciate expressing their individual preferences and getting offers that are exactly what they want. However, while reliance on their own preferences when making choices may be important for some consumers and thus drive the success of personalization, there is no particular reason to assume that individual preferences are equally important to all consumers. If consumers differ in their responses to personalized offers, however, it becomes important for marketers to identify and offer the option to personalize only to those consumers who are most likely to respond favorably. Indeed, consumers who actually prefer a targeted to a personalized offer may be lost for companies that exclusively follow the personalization imperative.

Specifically, as we discuss next, consumers who display interdependent or collectivistic tendencies may prefer product recommendations that are not based on their own individual preferences, but instead on the collective preferences of a relevant in-group. Conversely, consumers who display individualistic or independent tendencies are more likely to appreciate recommendations that are personalized to their individual preferences.

Cultural Orientation and Individual Preferences

One of the most widely researched cultural difference variables in marketing and psychology relates to Hofstede's (1980) dimension of individualism-collectivism (e.g., Aaker and Schmitt 2001, Han and Shavitt 1994). Referring to the relationship between an individual and the larger collective, *individualism-collectivism* describes how individuals weigh their personal goals against those of a relevant group, such as their family, friends, or coworkers. In an individualistic culture such as the United States, individuals' personal goals take precedence over group goals, whereas the reverse is true for collectivistic cultures such as Japan or China. Furthermore, in relating to how valued the individual is relative to the group, the individualism-collectivism dimension affects how individuals construe the self, others, and the interdependence between the two (Markus and Kitayama 1991). The independent-self view is exemplified by most Western cultures, such as the United States and Canada, while the interdependent-self view is mostly found in collectivistic countries such as China, Japan, and countries in Latin America.

Differences in how individuals define themselves in relation to others have stable and predictable consequences for cognition, emotion, and motivation (Markus and Kitayama 1991), including for the relative importance of individual preferences compared to social norms or collective preferences. For example, Singelis (1994) shows that members of collectivistic (versus individualistic) cultures are less likely to perceive it to be their right or duty to make choices that reflect their personal inner attributes, and are much less concerned with being distinct from others. That is, collectivists (versus individualists) tend to rely more on external factors, such as their role in a group or their relationship with other group members, than on their own internal attributes (Hofstede 1980, Markus and Kitayama 1991, Morris and Peng 1994, Suh et al. 1998). Collectivistic (versus individualistic) consumers are also more likely to act in accordance with the expectations of others to express their interdependence and connectedness, rather than in accordance with their individual preferences. Furthermore, Iyengar and Lepper (1999) find that Asian-American children have greater intrinsic motivation and perform best in situations in which choices are made for them by relevant in-group members, but that Anglo-American children have greater motivation and perform best when they make their own choices.

Research in marketing has demonstrated that congruency between marketing tactics and cultural orientation results in more-favorable consumer responses (see Aaker and Williams 1998 for an important exception). For example, Han and Shavitt (1994) find that individualistic advertising appeals, which focus on individual benefits, are more effective in the United States, whereas collectivistic appeals, which focus on group benefits, are more effective in Korea. Aaker and Schmitt (2001) investigate if individuals prefer a brand whose positioning is consistent with their self-construal, and find that those with a predominant independent (interdependent) self have more-favorable attitudes toward a brand that is positioned as differentiating (assimilating). Similarly, Kim and Drolet (2003) show that consumers in individualistic cultures seek to appear unique through the choices they make by including more variety in their choices.

Importantly, individuals vary in their cultural orientation not only across societies or cultures, but also at the individual level (Triandis et al. 1985, Triandis 1989). For example, in the United States, Hispanics and Asian-Americans tend to be relatively collectivistic or interdependent, whereas Anglo-Americans tend to be more individualistic or independent.

In summary, the above discussion suggests that cultural orientation may moderate the success of individual marketing approaches or, more specifically, of personalizing product recommendations to individual preferences. Therefore, we hypothesize

Hypothesis 1A. *Consumers who exhibit individualistic or independent tendencies respond more favorably to personalized recommendations based on their own individual preferences* (*versus targeted recommendations based on the collective preferences of a relevant in-group*).

Hypothesis 1B. *Consumers who exhibit collectivistic or interdependent tendencies respond more favorably to targeted recommendations based on the collective preferences of a relevant in-group* (*versus personalized recommendations based on their own individual preferences*).

Study 1

Method

Participants and Design. One hundred and twenty-one undergraduate students from an East Coast university were paid $5 each to participate. Study 1 used a single manipulated factor (recommendation type: personalized versus targeted), and a second factor that was measured (cultural orientation: independent versus interdependent self) using Singelis's (1994) Self-Construal Scale.

Procedure. Subjects arrived at the lab in small groups and were presented with a Web site advertisement for a company that offered cell phone recommendations that would be based either on the preferences of other students (targeted recommendation) or on their own preferences (personalized recommendation). In particular, the headline for the targeted (personalized) ad read, "Active Sales Assistant knows what students (you) want!" The ad was divided into two sections. The left section stated: "Welcome students! Active Decision surveyed students like you all over the country to find out which cell phone students really want. We give you: A list of cell phones found to be the best for college students." "The right section stated: Welcome! Active Decisions measures your preferences to find out which cell phone you really want. We give you: A list of cell phones found to be the best for you." The ad tagline was "We give you what college students want! (We give you what you want!)" On the right-hand side of the ad, the Web site was described in more detail: "Mobile Phone Guide. Need help deciding which cell phone to buy? Get completely unbiased product recommendations from people like you to help you decide. Active Decision Guide. We give you the cell phone students prefer most. (Get highly personalized and completely unbiased product recommendations to help you decide. Active Decision Guide. We give you the cell phone you prefer most.)"

After reading the ad, subjects indicated their attitude toward the brand (where 1 = not at all likeable, unfavorable, bad, and 7 = likeable, favorable, good). This was followed by manipulation check measures to ascertain that subjects perceived the ad to offer them a product recommendation that was based either on their own or other students' preferences. Specifically, subjects indicated their agreement (where 1 = disagree and 7 = agree) with two manipulation check items: "I expect that the cell phone the Active Sales Assistant suggests is based on my own preferences" and "I expect that the cell phone the Active Sales Assistant suggests is based on the preferences of students like me" (reverse-scored). To test an alternative explanation that suggests that the hypothesized effects were due to differences in perceived novelty of the ads, subjects also rated how novel and how unusual the ad was (where 1 = disagree and 7 = agree). Finally, subjects completed Singelis's (1994) Self-Construal Scale, which measures independent (e.g., "My personal identity, independent of others, is very important to me") and interdependent (e.g., "I usually go along with what others want to do, even when I would rather do something different") dimensions of the self.

Results

We determined cultural orientation based on responses to Singelis's (1994) self-construal scale. Subjects were classified as having a predominant independent (interdependent) self when their average score on the independence (interdependence) dimension ($\alpha = 0.71$) was greater than their average score on the interdependence (independence) dimension ($\alpha = 0.75$). This classification yielded 77 (44) subjects with a predominant independent (interdependent) self.

Manipulation Check. The two manipulation check items were averaged to form a manipulation check index ($r = 0.20$, $p < 0.05$). A 2 (cultural orientation: independent versus interdependent self) × 2 (recommendation type: personalized versus targeted) ANOVA on the manipulation check index yielded a significant main effect for recommendation type. Subjects expected that the personalized cell phone recommendation was significantly more likely to be based on their own preferences than the targeted cell phone recommendation [mean = 4.60 versus 3.27; $F(1, 117) = 56.08$, $p < 0.001$]. No other main or interaction effects were significant.

Responses to the Recommendation. The attitude-toward-the-brand items were averaged to form a response index ($\alpha = 0.95$). A 2 (cultural orientation: independent versus interdependent self) × 2 (recommendation type: personalized versus targeted) ANOVA on the response index yielded a cultural orientation × recommendation type interaction; $F(1, 117) = 7.86$, $p < 0.01$. Supporting Hypothesis 1A, follow-up planned contrasts showed that respondents with an independent self responded more favorably to the brand that advertised cell phone recommendations based on individual (versus collective) preferences [mean = 4.11 versus 3.50; $F(1, 75) = 4.22$, $p < 0.05$]. Supporting Hypothesis 1B, respondents with an interdependent self responded marginally more favorably to the brand that advertised cell phone recommendations based on collective (versus individual) preferences [mean = 4.37 versus 3.61; $F(1, 42) = 3.98$, $p < 0.053$]. No main effects were significant.

Alternative Explanation—Novelty. The two novelty items were averaged into a novelty index ($r = 0.34$, $p < 0.001$). A 2 (cultural orientation: independent versus interdependent self) × 2 (recommendation type: personalized versus targeted) ANOVA on the novelty index yielded only a marginally significant main effect for cultural orientation; $F(1, 117) = 3.27$, $p < 0.10$. Follow-up planned contrasts showed that respondents with an interdependent (versus independent) self rated both advertisements marginally more novel; mean = 3.53 versus 3.08, respectively. No other main or interaction effects were significant (Fs < 1).

Discussion of Study 1

The first study found evidence for the effect of cultural orientation on consumer responses to personalization. Specifically, respondents with a predominant independent self responded more favorably to product recommendations that were based on individual (versus collective) preferences. Conversely, respondents with a predominant interdependent self responded more favorably to product recommendations that were based on collective (versus individual) preferences; namely, those of other college students. Furthermore, we showed that these results were not due to differences in perceived novelty of the ads.

While our results support and parallel those obtained by Iyengar and Lepper (1999), a question that naturally arises is whether these results are particular to the cell phone product category we used. That is, are there conditions under which cultural orientation does not influence responses to personalization? For example, cell phones are consumed in public and thereby subject to public scrutiny, which may compel individuals to act in accordance with their cultural norms. As such, consumers with an interdependent self may not want to appear different from others, while consumers with an independent self may not want to appear similar to others, when the recommendation is for a product to be consumed in public. On the other hand, following cultural norms may be less of a concern for products consumed in private.

Prior research conducted in the United States has provided support for this proposition (e.g., Burnkrant and Cousineau 1975). For example, Ariely and Levav (2000) find that in a group setting individuals tend to make choices that allow them to appear unique because they expect to be evaluated more favorably as a result. Furthermore, Ratner and Kahn (2002) demonstrate that consumers' desire to be evaluated favorably may lead them to choose more variety when choosing in public than in private. Finally, Briley et al. (2000) show that justifying one's choices activates cultural norms, which makes individualists (collectivists) less (more) likely to choose a compromise option.

These findings suggest that differences in response to personalization may be dependent on whether the recommended product is consumed publicly (where it is subject to public scrutiny) or privately (in the absence of public scrutiny). Therefore, we added product type as an experimental factor to the next study, investigating both public (cell phone) and private (mattress; e.g., Bearden and Etzel 1982) products. In doing so, we also tested an alternative explanation that suggests that Study 1's findings were due to differences in individuals' desire to exercise control over the creation of the final product. Specifically, consumers may see the opportunity to personalize a list of recommendations to their own specifications as a vehicle to exercise control. In support of this alternative explanation, research has shown that personal agency and control are less important for individuals with an interdependent (versus independent) self (Iyengar and Lepper 1999, Morris and Peng 1994). If this explanation is correct, then the type of product recommended should not moderate subjects' responses to personalization.

Another alternative explanation suggests that the results of Study 1 were due to differences in consumers' desire for uniqueness. In particular, a personalized product offer is likely to be different or unique, and as such may be used to express one's individuality and distinctiveness from others. However, these motivations are more important for individualistic (versus collectivistic) consumers, who value being separate and distinct from others. Collectivistic consumers, on the other hand, value harmony and relatedness with others (e.g., Kim and Markus 1999, Markus and Kitayama 1991), and expressing their individuality with a product that matches their individual preferences may be detrimental to maintaining connectedness and fitting in. Therefore, we also added a measure for consumers' need for uniqueness to the next study.

Lastly, we wanted to demonstrate the robustness of the previous findings by using a different operationalization of cultural orientation. In particular, Study 2 used Singelis et al.'s (1995) scale of vertical versus horizontal individualism versus collectivism to assess cultural orientation. Singelis et al. (1995) argue that individualism-collectivism is a multidimensional construct, which can be further divided into horizontal and vertical dimensions that describe how much emphasis individuals place on horizontal versus vertical relationships. Overall, cultures high on the horizontal dimension emphasize equality, whereas cultures high on the vertical dimension emphasize hierarchy and status. Prior research has shown that the horizontal versus vertical distinction is an important one to make. For example, cross-cultural differences in country-of-origin effects are explained only by differences on the vertical (but not the horizontal) dimensions of individualism and collectivism (Gürhan-Canli and Maheswaran 2000).

Study 2

Method

Materials. To ascertain that the two products chosen for this study differed on the public versus private dimension, a pretest was run. In particular, 55 respondents evaluated either cell phones or mattresses on 7-point scales on their public ["Cell phones (mattresses) are used in public"; "Other people know what cell phone (mattress) I own"; "It is easy for others to identify what cell phone (mattress) I own"; $\alpha = 0.81$] and private ["It is difficult for others to identify what cell phone (mattress) I own"; "Cell phones (mattresses) are used in private"; "Other people don't know what cell phone (mattress) I own"; $\alpha = 0.69$] dimensions. Results showed that cell phones (versus mattresses) were perceived to be significantly more public [mean = 5.26 versus 2.05; $F(1, 53) = 109.47$, $p < 0.001$], and mattresses (versus cell phones) were perceived to be significantly more private [mean = 5.44 versus 3.29; $F(1, 53) = 31.26$, $p < 0.001$] products.

Participants and Design. Two hundred and thirty-six undergraduate students from an East Coast university were paid $5 each to participate in the study. Study 2 used two manipulated factors (recommendation type: personalized versus targeted; and product type: public versus private), and a third factor that was measured (cultural orientation: individualistic versus collectivistic) using Singelis et al.'s (1995) scale assessing horizontal and vertical individualism and collectivism.

Procedure. Respondents were randomly assigned either to an ad for a company that offered cell phone recommendations (identical to the one used in the prior study) or to an ad for a company that offered mattress recommendations. In both cases, the recommendation was to be based either on individual or on collective preferences. After reading the ad,

respondents indicated their attitude toward the brand (where 1 = not at all likeable, unfavorable, bad, and 7 = likeable, favorable, good), then subjects completed manipulation check measures as in Study 1.

To rule out that any effect of public versus private product type were caused by differences in level of involvement with the product category, respondents completed three 7-point items measuring their level of involvement ["In selecting from many types and brands of cell phones (mattresses) available in the market, would you say 1 = you would not care at all as to which one you buy or 7 = you would care a great deal as to which one you buy"; "Do you think that the various types and brands of cell phones (mattresses) are all very alike = 1 or are all very different = 7"; and "How important would it be to you to make the right cell phone (mattress) choice: 1 = not at all important and 7 = extremely important"]. Next, to ascertain that the public and private products did not differ in their degree of personalizability or variability, subjects indicated on three 7-point scales the degree of control they would have over the features of the product, where 1 = no control at all, completely uncontrollable, no command at all, and 7 = a lot of control, completely controllable, a lot of command. Respondents then completed Tian et al.'s (2001) Consumers' Need for Uniqueness (CNFU) Scale. Finally, respondents completed Singelis et al.'s (1995) scale measuring horizontal individualism (e.g., "I often do my own thing"), vertical individualism (e.g., "It is important that I do my job better than others"), horizontal collectivism (e.g., "My happiness very much depends on the happiness of those around me"), and vertical collectivism (e.g., "I usually sacrifice my self-interest for the benefit of my group").

Results

We determined cultural orientation based on responses to the Singelis et al. (1995) scale. Respondents were classified as being relatively individualistic (collectivistic) when their combined average score on the vertical and horizontal individualism (vertical and horizontal collectivism) dimension ($\alpha = 0.78$) was greater than their combined average score on the vertical and horizontal collectivism (vertical and horizontal individualism) dimension ($\alpha = 0.74$). This classification yielded 125 (105) individualistic (collectivistic) respondents.

Confound Checks. A one-factor ANOVA on the CNFU score yielded a significant effect for cultural orientation; mean = 2.94 versus 2.63 for the individualistic versus collectivistic subjects, respectively; $F(1, 228) = 11.20$, $p < 0.01$. However, preliminary ANCOVAS run on attitude toward the brand found that consumer need for uniqueness was not a significant covariate and was therefore dropped from the analyses.

The involvement items were averaged into an involvement index ($\alpha = 0.73$). A 2 (cultural orientation: individualistic versus collectivistic) × 2 (product type: public versus private) × 2 (recommendation type: personalized versus targeted) ANOVA on the involvement index only yielded a significant main effect for cultural orientation. Individualistic (versus collectivistic) subjects were more involved; mean = 5.23 versus 4.90; $F(1, 222) = 4.07$, $p < 0.05$; we therefore included involvement as a covariate in the analyses below. No other effects were significant.

The control items were averaged into a control index ($\alpha = 0.84$). As expected, a 2 (cultural orientation: individualistic versus collectivistic) × 2 (product type: public versus private) × 2 (recommendation type: personalized versus targeted) ANOVA on the control index yielded a significant main effect for recommendation type. Subjects expected to have significantly more control over the levels of features for the personalized (versus targeted) recommendation; mean = 4.82 versus 4.19; $F(1, 222) = 13.44$, $p < 0.001$. Subjects also expected to have marginally more control over the features of the mattress (versus the cell phone); mean = 4.68 versus 4.35; $F(1, 222) = 3.80$, $p < 0.06$. No other main or interaction effects were significant.

Manipulation Check. The two manipulation check items were averaged to a manipulation check index ($r = 0.19$, $p < 0.01$). A 2 (cultural orientation: individualistic versus collectivistic) × 2 (product type: public versus private) × 2 (recommendation type: personalized versus targeted) ANOVA on the manipulation check index yielded a significant main effect for recommendation type. Subjects expected the personalized (versus targeted) recommendation to be significantly more likely to be based on their own preferences [mean = 4.41 versus 3.43; $F(1, 222) = 64.97$, $p < 0.001$]. No other effects were significant.

Responses to the Recommendation. As discussed above, we included involvement as a covariate in the analyses below. The attitude-toward-the-brand items were averaged into a response index ($\alpha = 0.92$). A 2 (cultural orientation: individualistic versus collectivistic) × 2 (product type: public versus private) × 2 (recommendation type: personalized versus targeted) ANCOVA on the response index yielded the expected cultural orientation × product type × recommendation type interaction; $F(1, 221) = 4.06$, $p < 0.05$. No other effects were significant.

Next, we ran separate analyses for each product type. For the private product (mattress), the cultural orientation × recommendation type interaction was not significant; $F < 1$. However, for the public product (cell phone), we found a significant cultural orientation × recommendation type interaction; $F(1, 112) = 6.19$, $p < 0.05$, replicating the results of

Table 1 (Study 2) Effects of Cultural Orientation, Product Type, and Recommendation Type on Responses to the Recommendation

	Cell phone recommendation		Mattress recommendation	
	Personalized offer	Targeted offer	Personalized offer	Targeted offer
Collectivists	3.70 ($n = 23$)	4.40 ($n = 24$)	4.35 ($n = 27$)	3.95 ($n = 31$)
Individualists	4.30 ($n = 37$)	3.82 ($n = 33$)	4.22 ($n = 29$)	4.08 ($n = 26$)

the first study. Follow-up planned contrasts showed that collectivists' responses were significantly more favorable for the cell phone recommendation that was based on collective (versus individual) preferences [$F(1, 44) = 4.22$, $p < 0.05$]. Conversely, individualists' responses were marginally more favorable for the cell phone recommendation that was based on their individual (versus collective) preferences [$F(1, 67) = 2.82$, $p < 0.10$]. See Table 1 for cell means.

Horizontal versus Vertical Dimensions of Individualism and Collectivism. We also ran separate analyses for the cell phone product category on the main dependent variable for high versus low levels of horizontal and vertical individualism and collectivism, based on median splits on respondents' scores on the respective subscales. The interactions of cultural orientation × recommendation type were not significant for horizontal or for vertical individualism. However, interactions of cultural orientation and recommendation type on consumer responses to the recommendation were significant for both horizontal and vertical collectivists (ps < 0.05).

Discussion of Study 2

Study 2 found additional support for the hypothesis that cultural orientation moderates consumer responses to personalization. We thereby replicated the results of Study 1, using a different operationalization of cultural orientation while controlling for consumers' need for uniqueness and level of involvement. Additionally, we found product category to be an important boundary condition of the influence of cultural orientation. In particular, collectivists (individualists) only responded more favorably to a targeted (personalized) cell phone recommendation. For mattress recommendations, the effect did not appear, demonstrating an important extension of the findings of Iyengar and Lepper (1999). While we propose that the difference in responses for the cell phones versus mattresses was driven by their public versus private consumption properties, cell phones and mattresses clearly also differ in other respects, as well, which could confound these results. We address this concern in Study 3.

Our findings further suggest that need for control is unlikely to be responsible for the effects found in the studies, because differences in responses were not found for the mattress recommendation. Finally, we showed no difference in responses based on the horizontal versus vertical dimensions of individualism and collectivism, suggesting that our results are affected by the importance of individual versus collective preferences associated with differences in cultural orientation, independent of differences in perceptions of hierarchical relationships.

We have therefore found responses to firms offering personalized recommendations for a publicly consumed product to be more favorable for relatively more independent or individualistic consumers, whereas responses to firms offering targeted recommendations were more favorable for relatively more interdependent or collectivistic consumers. However, we have not addressed conditions under which this effect will occur. In particular, one might argue that, regardless of cultural orientation, reliance on collective preferences may depend on the degree to which individuals perceive that relevant others share their preferences. That is, beliefs that their own preferences and the preferences of their in-group are relatively similar (versus different) should lead both collectivistic and individualistic consumers to respond more favorably to targeted recommendations. Furthermore, reliance on collective preferences is also likely to depend on the level of consumers' expertise. For example, expert consumers have better-defined preferences they can rely on in their decision making (e.g., Alba and Hutchinson 1987, Mishra et al. 1993), while novices who lack their own preferences may need to rely on others' preferences for guidance. Therefore, relatively lower (versus higher) levels of expertise should lead both collectivistic and individualistic consumers to respond more favorably to targeted recommendations. We investigated both these propositions, as well as the underlying process for the effect, in the last study with Anglo-American and Asian-American respondents.

The next study also examined the process through which the effect of cultural orientation on responses to personalized recommendations occurs by looking at the causal sequence more closely. In particular, we expected that the two types of marketing approaches differ in the degree to which they evoke favorable thoughts in respondents. Specifically, because of incongruity between recommendation type and cultural orientation, we expected that the targeted (versus personalized) offer would evoke less-favorable thoughts for Anglo-Americans, whereas the personalized (versus targeted) offer was likely to evoke less-favorable thoughts for Asian-Americans. Furthermore, because of congruity between recommendation type and their cultural orientation, we expected that the personalized (versus targeted) offer would

evoke more-favorable thoughts for Anglo-Americans, whereas the targeted (versus personalized) offer would evoke more-favorable thoughts for Asian-Americans. In turn, the favorability of the thoughts evoked by the ad is likely to determine consumers' responses to the two types of recommendations.

Importantly, we sought to address a limitation of Study 2 by keeping the product type of the recommendation constant (i.e., mattresses) and manipulated respondents' expectations that their responses to the study would be subject to public scrutiny, thereby eliminating the potential confound of product type with product category.

Study 3

Method

Participants and Design. One hundred and thirty-four Asian-American and 97 Anglo-American undergraduate students from an East Coast university participated in the study in exchange for $5 each, and were randomly assigned to one of the four manipulated conditions. Study 3 used two manipulated factors (recommendation type: personalized versus targeted; and choice context: public versus private), and a third factor that was measured (ethnicity: Anglo-American versus Asian-American).

Procedure. The procedure was similar to that of the previous studies. Respondents were randomly assigned to an ad for a company that offered mattress recommendations based either on their individual or collective preferences. The second factor we manipulated concerned whether respondents expected that their decision making would be subject to public scrutiny or kept confidential. In particular, in the public decision-making conditions, we added the following sentence after the study instructions: "Please note: The purpose of this study is to learn how capable and effective consumers are in making decision, and we might use your responses later to illustrate effective or ineffective consumer decisions" (see Lerner and Tetlock 1999 and Simonson et al. 2004 for related manipulations of accountability and the effects of public scrutiny). Respondents in the public decision-making conditions were then instructed to write their initials on each page of the questionnaire. Furthermore, before the main dependent variable, respondents were reminded (in bold) that we might use their answers to illustrate effective or ineffective consumer decisions. Conversely, in the private decision-making conditions, respondents were told: "Please note that your answers to this study will remain totally confidential. Please do not put any identifying information on this questionnaire." Before the main dependent variable, respondents were reminded (in bold) that their answers to the study would remain completely confidential.

After reading the ad, subjects indicated their attitude toward the brand (where 1 = not at all likeable, unfavorable, bad, and 7 = likeable, favorable, good; $\alpha = 0.92$). Next, subjects were instructed to spend a few minutes writing down any thoughts or feelings they had while reading the advertisement. Subsequently, subjects completed manipulation check measures as in the previous studies. Three items taken from Mishra et al. (1993) were used to assess subjects' expertise with mattresses (where 1 = know very little, inexperienced, uninformed, and 7 = know very much, experienced, informed; $\alpha = 0.93$). Finally, subjects indicated their beliefs that others shared their preferences ("Everybody prefers the same mattress," "What I like about mattresses is the same as everybody else"; where 1 = disagree and 7 = agree; $r = 0.46$, $p < 0.001$).

Results

Manipulation Check. A 2 (ethnicity: Anglo-American versus Asian-American) × 2 (choice context: public versus private) × 2 (recommendation type: personalized versus targeted) ANOVA on the manipulation check index yielded significant main effects for choice context [mean = 4.37 versus 4.10 for public (versus private) choice; $F(1, 222) = 5.39$, $p < 0.05$] and, as expected, for recommendation type [mean = 4.81 versus 3.63 for thes personalized (versus targeted) recommendation; $F(1, 222) = 94.13$, $p < 0.01$].

Responses to the Recommendation. A 2 (ethnicity: Anglo-American versus Asian-American) × 2 (choice context: public versus private) × 2 (recommendation type: personalized versus targeted) ANOVA on the response index yielded a significant ethnicity × recommendation type interaction; $F(1, 222) = 7.26$, $p < 0.01$. Responses of Anglo-Americans to the personalized (versus targeted) recommendation were marginally more favorable [mean = 4.32 versus 3.76; $F(1, 94) = 3.43$, $p < 0.07$]; responses of Asian-Americans to the targeted (versus personalized) recommendation were significantly more favorable [mean = 4.35 versus 3.85; $F(1, 131) = 3.90$, $p < 0.05$].

Paralleling the results of the Study 2, we also obtained a marginally significant ethnicity × choice context × recommendation type interaction; $F(1, 222) = 3.41$, $p < 0.07$. In particular, for the public decision-making conditions, the ethnicity × recommendation type interaction was significant [$F(1, 110) = 9.35$, $p < 0.01$]. That is, when choosing in public, responses to the personalized (versus targeted) recommendation were marginally more favorable for Anglo-Americans [mean = 4.59 versus 3.80; $F(1, 49) = 3.37$, $p < 0.08$], but significantly less favorable for Asian-Americans

Table 2 (Study 3) Effects of Cultural Orientation, Choice Context, and Recommendation Type on Responses to the Recommendation

	Public decision-making conditions		Private decision-making conditions	
	Personalized offer	Targeted offer	Personalized offer	Targeted offer
Asian-American	3.67 ($n = 31$)	4.68 ($n = 32$)	3.99 ($n = 38$)	4.03 ($n = 33$)
Anglo-American	4.59 ($n = 25$)	3.80 ($n = 27$)	4.03 ($n = 23$)	3.71 ($n = 22$)

[mean = 3.67 versus 4.68; $F(1, 60) = 6.39$, $p < 0.05$]. However, ethnicity did not interact with recommendation type in the private decision-making conditions ($F < 1$). See Table 2 for all cell means.

Mediation Analysis. Two independent raters categorized subjects' thoughts as positive, negative, or neutral. Interrater agreement was 89%; disagreements were resolved through discussion. For example, "By reading the ad I got some useful information" was coded as a positively valenced thought, "The ad is not attractive to me" as a negatively valenced thought, and "Most people want a good deal and reliability" as a neutrally valenced thought. Following Aaker and Maheswaran (1997; see also Aaker and Sengupta 2000), we then calculated a *valenced thought index* (VAT; positive minus negative thoughts).

For the public decision-making conditions, a 2 (ethnicity: Anglo-American versus Asian-American) × 2 (recommendation type: personalized versus targeted) ANOVA on the VAT index only yielded a significant ethnicity × recommendation type interaction; $F(1, 108) = 14.64$, $p < 0.01$. Asian-American subjects had a more favorable VAT index for the targeted (versus personalized) recommendation [mean = −0.35 versus −1.70, respectively; $F(1, 58) = 5.83$, $p < 0.05$]. Conversely, Anglo-American subjects had a more favorable VAT index for the personalized (versus targeted) recommendation [mean = −0.20 versus −1.81, respectively; $F(1, 49) = 9.51$, $p < 0.01$]. The number of neutral thoughts generated did not differ according to ethnicity or recommendation type (Fs < 1) and will not be discussed further.

To test whether valenced thoughts were the underlying process of the effect of cultural orientation on responses to personalization, we conducted separate mediational analyses for Asian-American and Anglo-American respondents in the public decision-making conditions only, as per Baron and Kenny (1986). First, for Asian-Americans the result of a regression analysis showed that recommendation type had a significant effect on receptivity to the mattress recommendation [$\beta = 0.308$; $t(59) = 2.53$, $p < 0.05$]. Next, recommendation type also had a significant effect on VAT [$\beta = 0.300$; $t(59) = 2.41$, $p < 0.05$]. Furthermore, VAT also had a significant effect on receptivity to the mattress recommendation [$\beta = 0.363$; $t(59) = 2.99$, $p < 0.01$]. Finally, when both recommendation type and VAT were included in the model, VAT remained a significant predictor [$\beta = 0.305$; $t(58) = 2.43$, $p < 0.05$], whereas recommendation type became insignificant [$\beta = 0.193$; $t(58) = 1.54$, ns], demonstrating mediation (Baron and Kenny 1986).

Next, for Anglo-Americans, the result of a regression analysis showed that recommendation type had a marginally significant effect on receptivity to the mattress recommendation [$\beta = -0.251$; $t(49) = -1.84$, $p < 0.08$]. Recommendation type had a significant effect on VAT [$\beta = -0.400$; $t(49) = -3.08$, $p < 0.01$]. Furthermore, VAT also had a significant effect on receptivity to the mattress recommendation [$\beta = 0.393$; $t(49) = 3.02$, $p < 0.01$]. Finally, when both recommendation type and VAT were included in the model, VAT remained a significant predictor [$\beta = 0.348$; $t(48) = 2.45$, $p < 0.05$], whereas recommendation type became insignificant [$\beta = -0.112$; $t(48) = 0.787$, ns], providing evidence for mediation (Baron and Kenny 1986).

Responses to the Recommendation and Shared Preferences. Next, we tested if beliefs that relevant others shared their preferences influenced Anglo-Americans' and Asian-Americans' responses to the mattress recommendation in the public decision-making conditions. Respondents were classified as having a high (versus low) belief that others shared their preferences based on a median split of their answers to the two belief items. A 2 (ethnicity: Anglo-American versus Asian-American) × 2 (recommendation type: personalized versus targeted) × 2 (belief of shared preferences: high versus low) ANOVA on the response index yielded a significant ethnicity × recommendation type interaction; $F(1, 106) = 8.08$, $p < 0.01$ (discussed above). Importantly, we also found a recommendation type × belief of shared preferences interaction; $F(1, 106) = 4.76$, $p < 0.05$, but no ethnicity × recommendation type × belief of share preferences interaction ($F < 1$). Follow-up planned contrasts showed that, regardless of their ethnicity, responses to the targeted (versus personalized) recommendation were significantly more favorable when subjects believed relevant others shared their preferences [mean = 4.64 versus 3.81, respectively; $F(1, 54) = 5.34$, $p < 0.05$]. However, there were no differences in response to the recommendation when respondents believed relevant others did not share their preferences (mean = 3.99 versus 4.41 for the targeted versus personalized recommendation, respectively; $F < 1$).

Receptivity to the Recommendation and Expertise. Finally, we wanted to test if level of expertise influenced Anglo-Americans' and Asian-Americans' responses to the mattress recommendation in the

public decision-making conditions. Respondents were classified as having relatively high (versus low) expertise with mattresses based on a median split of their answers to the expertise items. A 2 (ethnicity: Anglo-American versus Asian-American) × 2 (recommendation type: personalized versus targeted) × 2 (expertise: high versus low) ANOVA on the response index yielded a significant ethnicity × recommendation type interaction; $F(1, 106) = 8.57$, $p < 0.01$ (discussed above). Furthermore, we also found a significant recommendation type × expertise interaction [$F(1, 106) = 4.59$, $p < 0.05$]; however, the ethnicity × recommendation type × expertise interaction was not significant ($F < 1$). Follow-up planned contrasts showed that, regardless of their ethnicity, responses to the targeted (versus personalized) recommendation were more favorable for subjects low in expertise [mean = 4.43 versus 3.55, respectively; $F(1, 57) = 5.24$, $p < 0.05$]. However, there was no difference in response to the targeted (versus personalized) recommendation for subjects high in expertise [mean = 4.10 versus 4.61, respectively; $F(1, 52) = 1.26$, ns].

Discussion of Study 3

Operationalizing cultural orientation based on ethnicity, the current study shed light on the process underlying differential responses to personalized versus targeted recommendations. Specifically, the results suggest that the ad offering personalized (versus targeted) recommendations elicited more (less) favorable thoughts in Anglo-Americans (Asian-Americans), leading to more (less) favorable responses. Conversely, the advertisement offering targeted (versus personalized) recommendations elicited more (less) favorable thoughts in Asian-Americans (Anglo-Americans), leading to more (less) favorable responses.

Furthermore, we found additional boundary conditions to our previous results, showing that individualistic or independent respondents may not always rely on their personal preferences. In particular, we found that reliance on personal preferences depends on the degree to which individuals perceive that relevant others share their preferences. That is, both Asian-Americans and Anglo-Americans who believed that their own preferences and the preferences of their in-group are relatively similar (versus different), were shown to be more receptive to the targeted mattress recommendation when choosing in a public context. Next, we found that reliance on personal preferences is also dependent on the level of consumers' expertise. That is, when their decision making was subject to public scrutiny, Asian-Americans and Anglo-Americans with lower (versus higher) levels of expertise responded more favorably to the targeted mattress recommendation.

Overall, the current study replicated the results of Study 2 by manipulating perceptions of public scrutiny. Furthermore, we identified two boundary conditions for the effects found by Iyengar and Lepper (1999). In particular, Anglo-Americans were less likely to rely on their own preferences in making choices when their level of expertise was low or when they perceived their preferences to be relatively common.

General Discussion

Marketers are increasingly focusing on personalizing product offers to the preferences of their individual customers. These new marketing approaches are based on the assumption that consumers will be more appreciative of a product offer that is personalized to their own preferences versus the collective preferences of relevant in-groups. However, in this research we suggest that cultural orientation determines how important individual versus collective preferences are to consumers, which in turn affects their responses to personalization.

In particular, we found that consumers with predominant interdependent or collectivistic tendencies responded less favorably to a firm advertising product recommendations that were based on their own individual preferences. Instead, these consumers had more-favorable attitudes toward offers to receive product recommendations based on preferences they shared with relevant in-group members. Conversely, respondents with predominant independent or individualistic tendencies had more-favorable attitudes toward offers to receive personalized recommendations that were based on their individual preferences, as compared to those based on the preferences they shared with in-group members. Next, we found that the relationship between cultural orientation and responses to personalization depended on the type of product recommended and the choice context. Specifically, consumers with collectivistic tendencies preferred only those targeted recommendations that were consumed or chosen in public, suggesting that collective preferences lose their importance once choice or consumption of products is no longer subject to the scrutiny of others. Additionally, we showed that the effect of cultural orientation on responses to personalization is mediated by differences in favorability of thoughts elicited by the ads offering personalized versus targeted recommendations. Finally, we found that lower levels of expertise and the perceptions that others share their preferences made both Anglo-American and Asian-American respondents rely more on collective (versus individual) preferences in public consumption choices. That is, individuals with independent or individualistic tendencies are willing to

rely on others' preferences when their expertise is low and when they perceive their own preferences to be relatively common.

Implications

While the current research investigated individuals' responses to firms offering targeted versus personalized products, rather than to actual, personalized products, our results have important implications for marketers. We find that there is a distinct segment of consumers who not only are indifferent to offers of personalization, but who in fact may respond to invitations to receive personalized recommendations less favorably than they respond to invitations provided to them based on a market segmentation approach—as long as the product will be consumed or chosen in public. As a consequence, these consumers may not appreciate personalized recommendations provided by recommendation agents, or may be less willing to enter into one-to-one relationships with marketers. As such, the implications of this research are of particular concern for international marketers, since differences in responses to personalization are likely to be more pronounced between nations (e.g., the United States and Japan) than they are within nations.

Furthermore, there are overall differences in cultural orientation based on ethnicity or cultural background (e.g., Asian or Hispanic individuals tend to be more collectivistic and have a more interdependent self-view) that can suggest to marketers which customers are likely to be more receptive to personalization, based on simple demographic information. In fact, Study 3 demonstrated that Asian-Americans were more receptive to targeted recommendations when they expected to be evaluated for their choices. In addition to relying on rather broad demographic characteristics, companies may also try to determine where each individual customer falls on the collectivistic versus individualistic or interdependent- versus independent-self dimensions. For example, companies may use a few questions to screen customers and then provide them either with a personalized or targeted offer. In Study 1, the question with the highest positive correlation with responses to the ad offering targeted recommendations and highest negative correlation with responses to the ad offering personalized recommendations was "Even when I strongly disagree with group members, I avoid an argument," on Singelis's (1994) Independence/Interdependence Scale. This item clearly refers to respondents' desire to fit in with relevant others, so that companies may use respondents' answers to classify them according to their expected responses to personalization. This suggests that one solution of the personalization versus segmentation question for marketers may be to do a metasegmentation: First, segment customers into groups based on their expected responses to personalization (according to their cultural orientation, for example), and then provide a personalized offer only to those in the personalization segment and a segmented offer to those in the targeted segment. Alternatively, marketers can allow consumers to self-select into one of these categories.

Additionally, the manner in which marketers collect individuals' preferences may moderate the effect of cultural orientation on responses to personalization. In particular, there are two basic approaches to gather consumer information (Ariely et al. 2004), which differ in the level of consumer participation required in the measurement process. Community-based approaches or collaborative filtering methods use consumers' prior purchases or Web site visits to infer their preferences and provide personalized recommendations. Here, consumers do not actively participate in the measurement process or explicitly state their preferences. Conversely, individual-based approaches to measuring preferences require more-active participation by the consumer. In this case, marketers directly ask consumers to state their preferences using one of a variety of measurement tasks. Ariely et al. (2004) show that, overall, individual-based models generally outperform community-based models. However, we propose that cultural orientation may influence this effect. Specifically, we find that collectivistic consumers respond less favorably to personalized offers to be based on their directly measured preferences, which suggests that they may also be less willing to actively participate in the measurement of their preferences. Therefore, these consumers may respond more favorably to personalized offers that are based on community or collaborative filtering methods that do not require them to explicitly state their preferences. Note that in the studies used in this research, respondents were likely to have expected active participation in the preference measurement.

Limitations and Avenues for Future Research

The current research has several limitations, but also provides opportunities that should be addressed in future studies. Although we investigated responses to Web-based personalization engines, we conducted the studies using a paper-and-pencil approach. To enhance external validity, it would therefore be desirable to replicate these results in a computer-mediated environment, and using different public and private product categories. Furthermore, future studies should demonstrate that the effect of cultural orientation is not only obtained for firms advertising personalized versus targeted products, but also

for the personalized versus targeted products themselves, and extends to consumers' satisfaction with these products.

We used students for subjects as well as for the relevant in-group, which limits the generalizability of our results. We also did not manipulate the relevance to subjects of the particular in-group used; for example, while other college students are likely to be a highly relevant in-group for the samples used in the current studies, other young adults (more broadly) are likely to be less relevant as an in-group, and as such we would expect the results to be weaker. Additionally, future research should investigate why differential levels of expertise and beliefs of shared preferences influence responses to targeted, but not to personalized, recommendations.

Next, future studies should investigate the degree to which our results are affected by cultural differences in conformity. Since prior research suggests that individualists are less likely to conform than are collectivists (e.g., Bond and Smith 1996), one could examine to what extent responses to personalized offers are influenced by differences in conformity behavior, in addition to differences in reliance on individual versus group preferences.

Another promising avenue for future research is to prime respondents with a cultural orientation before offering them recommendations based on individual versus collective preferences. In particular, research has shown that a particular independent versus interdependent self-view can be made temporarily accessible (e.g., Hong et al. 2000), especially in bicultural individuals (Lau-Gesk 2003), which may result in consumers with an otherwise chronic interdependent self becoming more likely to respond favorably to personalized offers. However, as another future study, one should investigate what effect this would have on product satisfaction and regret.

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