

Found in Translation: Cross-Cultural Consensus in the Accurate Categorization of Male Sexual Orientation

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Abstract

Across cultures, people converge in some behaviors and diverge in others. As little is known about the accuracy of judgments across cultures outside of the domain of emotion recognition, the present study investigated the influence of culture in another area: the social categorization of men's sexual orientations. Participants from nations varying in their acceptance of homosexuality (United States, Japan, and Spain) categorized the faces of men from all three cultures significantly better than chance guessing. Moreover, categorizations of individual faces were significantly correlated among the three groups of perceivers. Americans were significantly faster and more accurate than the Japanese and Spanish perceivers. Categorization strategies (i.e., response bias) also varied such that perceivers from cultures less accepting of homosexuality were more likely to categorize targets as straight. Male sexual orientation therefore appears to be legible across cultures.

Keywords

social categorization, person perception, sexual orientation, culture

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One of the earliest and best studied topics related to culture in psychology is the influence of cultural differences on emotion recognition. Beginning with Ekman, Sorenson, and Friesen's (1969) work showing universality in the recognition of basic emotions among perceivers in New Guinea, Borneo, the United States, Brazil, and Japan (see also Naab & Russell, 2007; Russell, 1991), it is relatively well accepted that humans experience and express emotions similarly regardless of their cultural backgrounds, although there is, of course, some degree of variation (e.g., Russell, 1994). A meta-analysis summarizing much of the subsequent research since Ekman et al.'s original work found evidence for variation *within* universality (Elfenbein & Ambady, 2002). That is, although emotions could be judged with above-chance accuracy across all of the cultures examined, suggesting universality, there was also evidence of an "ingroup advantage" whereby individuals were more accurate in decoding the emotional expressions of cultural ingroup members than they were the emotional expressions of cultural outgroup members. Exploring these effects in an experimental study, Elfenbein and Ambady (2003a) uncovered that the mechanism for this effect appears to be familiarity: Individuals more familiar with a group performed better at decoding the emotions expressed by members of that group. Another important component of these effects is the "distance" between the targets and perceivers. For instance, individuals

may be more accurate in judging the nonverbal behaviors of targets from cultures that are more similar to their own (such as Americans judging Western Europeans) than of targets from cultures that are less similar to their own (such as Americans judging East Asians).

Outside of emotion recognition, however, little is known about the accuracy of judgments of nonverbal behaviors across cultures. This is surprising given the central role that nonverbal cues—especially those from the face—play in our perceptions, impressions, and thoughts about other people (e.g., Zebrowitz, 1997). One body of literature has investigated consensus in judgments of personality from nonverbal cues across cultures. Several studies have shown that perceivers from different cultures form similar impressions of personality traits based on targets' faces. Zebrowitz, Montepare, and Lee (1993) found that White American, Black American, and Korean perceivers formed similar judgments for a host of personality and physiognomic traits

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for targets from all three groups (see also Cunningham, Roberts, Barbee, Druen, & Wu, 1995). Similarly, Albright et al. (1997) showed that American and Chinese perceivers formed consistent impressions of extraversion and agreeableness for faces of targets from both cultures.

Despite this consensus across cultures in the judgment of personality traits from nonverbal cues, there is evidence that these similar perceptions can lead to cross-cultural differences. For example, Rule et al. (2010) found that American and Japanese perceivers agreed in their judgments of traits related to power and warmth from the faces of American and Japanese political candidates. However, despite this cross-cultural agreement, differences emerged cross-culturally in how that consensual information was used. Specifically, the traits that predicted the outcomes of the elections were different in the United States (where powerful candidates won the elections) than in Japan (where warm candidates won the elections). Zebrowitz and colleagues found similar dissociations for perceptions of body movement (Montepare & Zebrowitz, 1993) and vocal qualities (Peng, Zebrowitz, & Lee, 1993) between American and Korean perceivers. For instance, Peng et al. (1993) found that both American and Korean perceivers agreed on the qualities of voices they judged (e.g., the speed of utterances) but reached different conclusions based on those perceptions (i.e., quick speech was ascribed higher social status in the United States, whereas slow speech was ascribed higher social status in Korea). Thus, similar to the findings in the emotion recognition literature, universality and variation across cultures are not mutually exclusive.

Although these studies show impressive effects of consensus across cultures, they do not include the criteria needed to measure whether the judgments are correct. One type of perceptual judgment that does possess a criterion by which to measure accuracy is the judgment of sexual orientation from nonverbal cues. The boundary between who is gay and who is straight is not easily perceived but can nevertheless be judged with accuracy that is significantly better than chance guessing within the United States (Ambady, Hallahan, & Conner, 1999; Johnson, Gill, Reichman, & Tassinary, 2007; Rieger, Linsenmeier, Gygax, & Bailey, 2008; Rieger, Linsenmeier, Gygax, Garcia, & Bailey, 2010; Rule & Ambady, 2008).

However, we do not know how the accuracy of these judgments might be influenced by their intersection with other social categories, such as cultural group memberships. Most of what we know about the accurate judgment of sexual orientation has been almost exclusively restricted to American targets and perceivers; though Knofler and Imhof (2007) studied differences in nonverbal behaviors when German individuals interacted in dyads with gay and straight German partners. In a survey study, Ross (1983) suggested that cultures less accepting of homosexuality may be less tolerant of gender-deviant behavior. Given that gay identity may be perceived, constructed, and enacted differently

within different cultural groups (e.g., Lippa & Tan, 2001; Ross, 1983), information about the influence of culture on judgments of sexual orientation could be informative for understanding the origins of how sexual orientation comes to be expressed by individuals. Specifically, cultural variation in the detection of sexual orientation might suggest culturally learned differences in expression, similar to the display rules that govern the expression of emotion (Ekman & Friesen, 1969). In contrast, cultural universality in judging sexual orientation could support theories about common biological or genetic influences on the expression of sexual orientation in humans.¹

The current research therefore sought to investigate the influence that culture might have on the accuracy of judgments of sexual orientation. In doing so, we hoped to (a) elaborate on what is known about the accuracy of judgments of nonverbal behavior across cultures, (b) gain a better understanding of how multiple social categories may interact in social categorization, and (c) shed light on the influence of culture on the detection and expression of sexual orientation. To accomplish this, we therefore asked participants to judge the sexual orientations of targets from a variety of cultural groups. Three cultural groups that differ in their acceptance and tolerance of homosexuality were chosen for use in the current study: Japan (low-acceptance culture), Spain (high-acceptance culture), and the United States (moderate-acceptance culture; Pew Research Center, 2007). Photos of self-identified gay and straight male targets were downloaded from Internet dating websites in each of these cultures, and data collection was organized at sites in each of the three nations. We then analyzed the data for the extent to which perceivers were accurate in their judgments of the faces from each culture and the extent to which perceivers agreed in their categorizations of the individual faces across cultures, and then compared the perceivers' judgments and response times across all of the 3×3 levels of target and perceiver culture.

Method

Participants

One hundred eighty-nine university students participated in the study in one of three locations: United States ($n = 69$; 36 women), Japan ($n = 59$; 29 women), and Spain ($n = 61$; 39 women). All participants were natives of the country in which they completed the study. In all locations, participants were randomly assigned to judge the sexual orientations of American (United States: $n = 27$; Japan: $n = 22$; Spain: $n = 20$), Japanese (United States: $n = 20$; Japan: $n = 20$; Spain: $n = 19$), or Spanish (United States: $n = 21$; Japan: $n = 20$; Spain: $n = 20$) men. No participants reported any recognition or familiarity with any of the same-culture or other-culture targets. Consistent with previous work on the judgment of sexual orientation from facial cues (e.g., Rule, Ambady,



Figure 1. Sample stimulus of an American male volunteer prepared in the same fashion as those used in the actual experiments

Adams, & Macrae, 2008), men versus women showed no differences in their categorizations of the faces in any of the three cultures. Participants were not questioned about their own sexual orientations out of respect for cultural norms.

Stimuli

Headshot photographs of 90 Caucasian American men (45 gay, 45 straight), 100 Japanese men (50 gay, 50 straight), and 100 Spanish men (50 gay, 50 straight) were downloaded from American, Japanese, and Spanish dating websites, respectively. All of the targets self-identified their sexual orientations by indicating that they were interested in a romantic or sexual relationship either with another man or with a woman. Search criteria for selecting the targets required that they be between the ages of 18 and 30 years old, and free of facial adornments, such as jewelry, glasses, or facial hair. Beyond that, the targets were selected based on the order in which they were made available by the respective websites' search algorithms (e.g., the first 50 gay Japanese targets meeting these conditions were downloaded for use). Each image was then cropped so as to show only the target's face and hair, converted to grayscale, and standardized in size (see Figure 1). Although it is possible that photos

taken from individuals' personal advertisements may not be representative of their typical appearance because of selection biases, previous research has suggested that such bias would be more likely to reduce signal rather than enhance it (e.g., Bailey, Kim, Hills, & Linsenmeier, 1997); see the Discussion section for further consideration of this point. Moreover, pretesting showed that the gay and straight groups of faces did not differ with regard to emotional expression or facial attractiveness in any of the three cultures.

Procedure

Participants were informed that they would be seeing a series of men's faces and that they would be asked to categorize each person as either gay or straight. They were instructed to make their decisions as quickly and accurately as possible via keypress, basing their judgments on their first impressions. Each photo was presented in random order at a self-paced rate, and responses were collected using DirectRT software. For participants in Japan and Spain, instructions were translated into Japanese and Spanish, respectively, and then back-translated to assure consistency in meaning.

Results

Accuracy

Data were first analyzed for the accuracy of perceivers' judgments in categorizing the targets' sexual orientations within each of the 3 (perceiver nationality: American, Japanese, Spanish) \times 3 (target nationality: American, Japanese, Spanish) cells using signal detection analysis. Signal detection is particularly useful in this context because it measures a perceiver's ability to distinguish stimuli independent of variations in base rates (e.g., Quanyt, Keats, & Harkins, 1975). Thus, accuracy here specifically refers to perceivers' ability to detect information signalling that a target is gay or straight from his face, independent of the number of gay and straight faces used or the distribution of gay and straight individuals in the real world. Participants were never given any information about the number or proportion of gay and straight targets used in the experiments.

Hit and false-alarm rates were calculated for each participant. Gay targets were arbitrarily chosen to be considered as signal, leaving straight targets to serve as noise. Thus, correct categorizations of gay targets as gay were counted as hits and incorrect categorizations of straight targets as gay were counted as false alarms. The perceivers' accuracy scores were then calculated using the nonparametric signal detection statistic A' (Rae, 1976) and a corresponding measure of response bias B' (Quanyt et al., 1975). Response bias refers to the criterion threshold at which perceivers have detected enough information to decide that a face is gay or straight. Thus, a high positive response bias would mean that a participant required a great deal of information before deciding that

Table 1. Descriptive Statistics and One-Sample Significance Tests Against Chance for Accuracy and Response Bias Scores According to Perceiver and Target Culture

| Perceiver culture | Target culture | N | Accuracy (A') | | | Response bias (B') | | | |
|-------------------|----------------|-----|---------------|-----|----------|--------------------|-----|-----|-----------|
| | | | M | SD | t | Cohen's d | M | SD | Cohen's d |
| American | American | 27 | .67 | .08 | 11.31*** | 2.18 | .10 | .18 | 2.75** |
| | Japanese | 22 | .60 | .07 | 6.80*** | 1.45 | .06 | .08 | 3.69*** |
| | Spanish | 20 | .62 | .07 | 7.31*** | 1.63 | .08 | .08 | 4.37*** |
| | All targets | 69 | .63 | .10 | 13.98*** | 1.30 | .08 | .13 | 5.16*** |
| Japanese | American | 20 | .59 | .11 | 3.63** | 0.81 | .18 | .22 | 3.65** |
| | Japanese | 20 | .56 | .10 | 2.60* | 0.58 | .14 | .24 | 2.58* |
| | Spanish | 19 | .58 | .12 | 2.73** | 0.63 | .11 | .22 | 2.27* |
| | All targets | 59 | .58 | .10 | 5.23*** | 1.30 | .14 | .22 | 4.94*** |
| Spanish | American | 21 | .60 | .14 | 3.21** | 0.70 | .00 | .18 | 0.08 |
| | Japanese | 20 | .58 | .08 | 4.07*** | 0.91 | .07 | .16 | 1.82 |
| | Spanish | 20 | .58 | .13 | 2.70** | 0.60 | .06 | .16 | 1.54 |
| | All targets | 61 | .58 | .10 | 5.55*** | 0.80 | .04 | .17 | 1.91 |
| All perceivers | American | 68 | .62 | .10 | 8.99*** | 1.21 | .09 | .20 | 3.74*** |
| | Japanese | 62 | .58 | .10 | 7.28*** | 0.78 | .09 | .17 | 4.04*** |
| | Spanish | 59 | .59 | .10 | 6.34*** | 0.90 | .08 | .16 | 3.88*** |
| | All targets | 189 | .60 | .11 | 12.93*** | 0.91 | .09 | .18 | 6.70*** |

* $p < .05$. ** $p \leq .01$. *** $p \leq .001$.

someone was gay; a low negative response bias would mean that a participant was willing to categorize a target as gay with considerably less information—that the perceiver applied a liberal strategy in deciding that someone was gay. The direction and magnitude of this metric is therefore independent of a perceiver's accuracy, which measures the ability to distinguish the two types of stimuli (gay and straight). Thus, a perceiver with a high bias toward responding that targets are gay can be just as accurate as a perceiver with a high bias toward responding that targets are straight. Response bias therefore describes the perceiver's general strategy for categorizing the targets, not the perceiver's ability to categorize the targets. Baseline for response bias is therefore 0 and the magnitude of departure from this baseline can be measured using significance tests (e.g., a one-sample t test). B' , the response bias measure employed here, is bounded at -1 and 1. A' is bounded at 0 and 1 with chance represented by .5 and is therefore functionally equivalent to a bias-corrected measure of percent correct. Sporer (2001) provides a review of the use of signal detection in social cognition and perception.

Perceivers' accuracy in distinguishing gay from straight faces was significantly greater than chance guessing across all levels of perceivers and targets; Table 1 reports the descriptive statistics and significance tests for measures of accuracy and response bias in all 3×3 samples of targets and perceivers. Thus, participants from all three cultures were able to distinguish between the faces of gay men and straight men, regardless of whether those men were from their own culture or from a different culture.

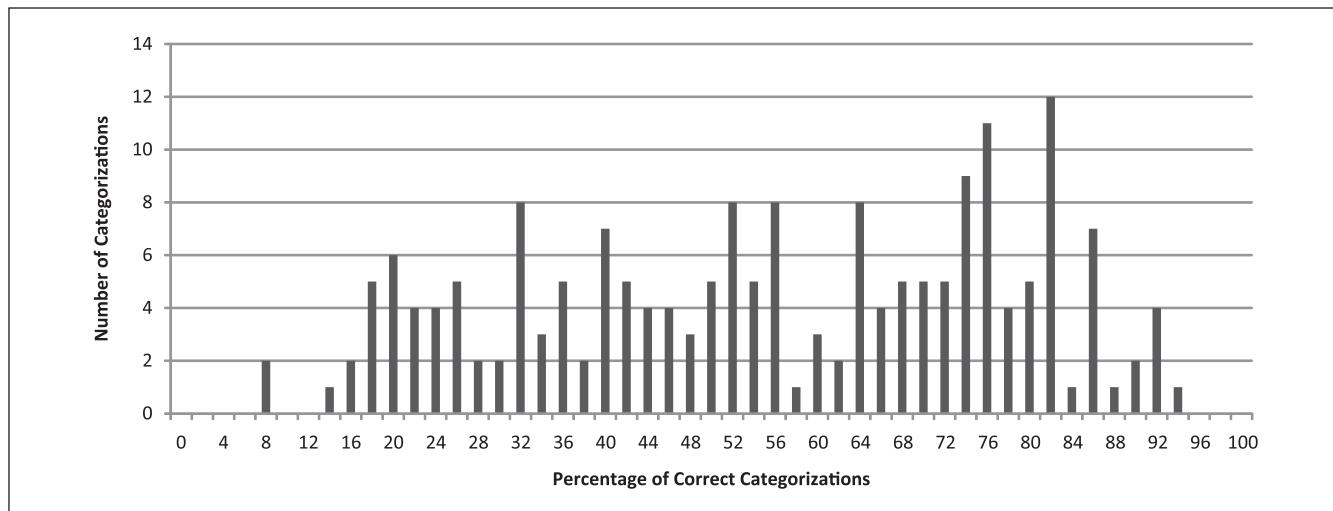
American and Japanese perceivers both showed a significant tendency to categorize targets as straight more often than gay, as indicated by a significantly positive response bias (see Table 1). This means that when American and Japanese perceivers were incorrect in their categorizations, it was because they were more likely to categorize gay men as straight. Spanish perceivers, in contrast, did not show a significant bias. That is, when the Spanish participants were incorrect in their categorizations, they were equally likely to say that gay men were straight as they were to say that straight men were gay. Notably, this does not change their levels of accuracy in any particular direction. Rather, it merely describes the nature of their errors. These data therefore suggest that the Spanish perceivers were more likely to entertain the notion that a man could be gay than were the American and Japanese perceivers. We discuss this in more detail below.

In terms of accuracy, then, all groups of perceivers were more accurate than chance in their categorizations of sexual orientation from men's faces in all three cultures studied. Their strategies for coming to these conclusions were somewhat different, however. American and Japanese perceivers exhibited a significant proclivity to erroneously categorize gay men as straight, whereas Spanish perceivers were just as likely to mistake straight men as gay and gay men as straight. We therefore did not observe an ingroup advantage in categorizing sexual orientation but, rather, saw evidence for relatively equivalent levels of accuracy across target cultures.

Table 2. Correlations Between American, Japanese, and Spanish Perceivers' Ratings for Each of the American, Japanese, and Spanish Target Faces

| Perceiver culture | Target culture | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------------|----------------|---|---|---|--------|--------|--------|--------|--------|--------|
| 1. American | American | | | | .39*** | | | .67*** | | |
| 2. | Japanese | | | | | .55*** | | | .63*** | |
| 3. | Spanish | | | | | | .78*** | | | .68*** |
| 4. Japanese | American | | | | | | | .64*** | | |
| 5. | Japanese | | | | | | | | .84*** | |
| 6. | Spanish | | | | | | | | | .83*** |
| 7. Spanish | American | | | | | | | | | |
| 8. | Japanese | | | | | | | | | |
| 9. | Spanish | | | | | | | | | |

*** $p \leq .001$.

**Figure 2.** Number of correct categorizations of each of the American, Japanese, and Spanish targets based on data aggregated across perceivers

Consensus

All three groups of American, Japanese, and Spanish perceivers were more accurate than chance in categorizing sexual orientation from viewing men's faces for both same-culture and other-culture targets. This shows evidence of consistency in judging sexual orientation across perceivers. A question of interest, then, is whether these judgments might also be consistent across targets. That is, did perceivers from all three cultures agree in terms of who they categorized as gay and straight within each of the three target cultures?

To examine the levels of consensus across judgments of the targets, we conducted an item-based analysis that considered each target face as the unit of analysis. We therefore calculated the average number of correct categorizations of each target, as rated by each group of perceivers, and measured the level of correlation between these judgments for the three perceiver groups. Categorizations of the targets as gay and straight were significantly correlated across the three groups of perceivers for all three target groups

(see Table 2). These data therefore show significant levels of agreement in the perception of sexual orientation across cultures, although there is variability in the size of the effects.

One question that may be raised by these findings regards the distribution of accuracy among the targets. Specifically, could participants' above-chance accuracy be the result of a small set of faces that are judged with high accuracy while the majority of faces are judged at or below chance? To explore this, we reanalyzed the data to calculate the percentage of correct categorizations for each target, aggregating across the categorizations made by all three groups of perceivers. As illustrated in Figure 2, we observed an absence of full consensus for any of the faces. That is, no target was categorized with complete accuracy or complete inaccuracy. Indeed, the distribution of item-based accuracy shows that a small number of faces was not responsible for the overall accuracy of judging the targets' sexual orientations. Rather, the effect was distributed with a central tendency that is greater than chance guessing. Thus, American, Japanese, and

Spanish perceivers showed significant agreement in the way they categorized the individual targets' faces, and these relations were not biased by a small, easily legible set of faces but, rather, represented a distributed effect across targets.

Comparison

Perceivers showed consistent above-chance accuracy in their categorizations of the gay and straight targets. Moreover, the judgments made for individual faces were significantly correlated across the three cultures. Despite significant cross-cultural agreement provided by these analyses, we were curious about potential variations according to targets' and perceivers' group memberships. We therefore conducted separate 3 (perceiver culture: American, Japanese, and Spanish) \times 3 (target culture: American, Japanese, and Spanish) ANOVAs for the participants' accuracy (A'), response bias (B'), and response time scores.

Results of the ANOVA for accuracy showed a significant main effect of perceiver culture, $F(2, 180) = 5.58, p = .004, \eta^2_{\text{partial}} = .06$, but not for target culture, $F(2, 180) = 2.66, p = .07, \eta^2_{\text{partial}} = .03$, or the interaction of the two, $F(4, 180) = 0.45, p = .77, \eta^2_{\text{partial}} = .01$. Bonferroni-corrected ($\alpha = .017$) simple effects t tests showed that this main effect was primarily due to significant differences between the American perceivers' accuracy, as compared to the Japanese, $t(126) = 3.42, p < .001, d = 0.61$, and Spanish, $t(128) = 3.00, p = .003, d = 0.53$, perceivers' accuracy, which did not differ, $t(118) = 0.30, p = .77$.

This difference in accuracy might be partially explained by differences in response time across participants. Previous work has shown that deliberation in judgments of sexual orientation impairs accuracy (Rule, Ambady, & Hallet, 2009). Thus, American participants' increased accuracy over the Japanese and Spanish participants could be due, in part, to a greater reliance on intuition in making their categorizations. The ANOVA on the participants' response time data supported this possibility. Before analysis, participants' response time data were transformed using the natural logarithm to achieve normality: Shapiro-Wilk $W = .99, p = .33$. Results of the 3 (perceiver: American, Japanese, and Spanish) \times 3 (target: American, Japanese, and Spanish) ANOVA then showed a significant main effect of perceiver culture, $F(2, 178) = 12.24, p < .001, \eta^2_{\text{partial}} = .12$.² However, we observed neither a significant difference according to target culture, $F(2, 178) = 2.29, p = .10, \eta^2_{\text{partial}} = .03$, nor a significant Perceiver \times Target interaction, $F(4, 178) = 0.67, p = .62, \eta^2_{\text{partial}} = .02$. Bonferroni-corrected ($\alpha = .017$) simple effects t tests showed that American participants (untransformed $M = 1243$ ms, $SE = 59$ ms) were significantly faster to make their categorizations than were the Japanese (untransformed $M = 1471$ ms, $SE = 75$ ms), $t(126) = 2.56, p = .013, d = .046$, or Spanish (untransformed $M = 1762$ ms, $SE = 111$ ms), $t(126) = 5.04, p < .001$,

$d = 0.89$, participants. However, the Japanese and Spanish participants' response times did not differ when the Bonferroni correction was considered, $t(116) = 2.30, p = .025$. These data may therefore suggest that the Japanese and Spanish participants spent more time considering their categorizations than did the American participants, which may have decreased their overall accuracy. We discuss this further in the Discussion section.

We also observed significant differences according to perceiver culture with regard to participants' response bias scores. Different thresholds for categorizing targets as gay versus straight could reflect different strategies for categorizing targets' sexual orientations. Based on differences in prohibitions against homosexuality across the three cultures, we would expect less open cultures to show a greater tendency to assume that targets are straight more often than gay. That is, members of cultures with a more open acceptance of homosexual behavior would likely have more exposure to gays and lesbians and would therefore be more willing to consider a target as gay rather than assuming a greater share of the population to be straight. Indeed, this is what the results of the ANOVA for response bias showed. The 3 (perceiver culture: American, Japanese, and Spanish) \times 3 (target culture: American, Japanese, and Spanish) ANOVA revealed a significant main effect of perceiver culture, $F(2, 180) = 5.06, p = .007, \eta^2_{\text{partial}} = .05$, and nonsignificant differences for both target culture, $F(2, 180) = 0.07, p = .94, \eta^2_{\text{partial}} < .01$, and the Perceiver Culture \times Target Culture interaction, $F(4, 180) = 0.77, p = .55, \eta^2_{\text{partial}} = .02$. Examination of the means for the three perceiver groups showed that participants from the culture least open to homosexuality (Japan) showed a greater tendency to categorize targets as straight than gay, followed by the culture most moderate in its openness to homosexuality (United States), followed by the culture most open to homosexuality (Spain); see Table 1. This declining relation between openness to homosexuality and the criterion threshold for categorization was confirmed by a significant linear contrast in which weights of -1, 0, and 1 were assigned to the Japanese, American, and Spanish participants, respectively, $F(1, 180) = 9.92, p = .002, d = 0.47$. Thus, the more open perceivers' culture was to homosexuality, the more likely those perceivers were to categorize the targets as gay.

Americans were therefore more accurate in their categorizations than were the Japanese or Spanish perceivers. In addition, they were also significantly faster to make their judgments. Spanish participants, however, were the least biased in their categorization errors—showing a statistically equal likelihood to mistake gay men as straight and straight men as gay. A linear contrast weighted according to cultural acceptance of homosexuality showed a relation between tolerance of homosexuality and the degree to which perceivers were willing to consider a straight man as gay.

Discussion

Male sexual orientation can be perceived across cultures with accuracy that is significantly better than chance. The present data showed evidence for agreement in judgments of sexual orientation across both target and perceiver culture. All of the American, Japanese, and Spanish perceivers were able to judge the sexual orientations of men from each of the United States, Japan, and Spain at levels significantly greater than chance guessing. Moreover, the perceivers showed high agreement in their categorizations of the individual targets; specifically, rates of categorization for the American, Japanese, and Spanish men's faces were significantly correlated across all three groups. Sexual orientation therefore appears to be relatively legible across cultures.

Although we observed strong and consistent agreement in the categorization of sexual orientation across cultures, we also found evidence for some differences in how sexual orientation was judged. Overall, American perceivers were significantly more accurate in their judgments of sexual orientation than were the Japanese and Spanish perceivers. Previous work has shown that different categorization strategies can exert a significant influence on the accuracy of perceivers' judgments (Rule, Ambady, et al., 2009). Perceivers who deliberated in their judgments of targets' sexual orientations were found to be significantly less accurate than perceivers who made their judgments based on their gut feelings or intuitions. Consistent with this pattern, we observed that American participants were significantly faster to categorize the men's faces as gay and straight than were the Japanese and Spanish participants. Thus, American participants may have been more inclined to rely on their intuition in making their judgments of sexual orientation than were the Japanese and Spanish participants, which may have benefited their accuracy in categorizing the men's sexual orientations.

One possible explanation for why Americans may be more disposed toward intuitive processing may relate to cultural differences in essentialist beliefs. Previous research has shown that Americans are significantly more likely than are Japanese to believe that one's traits are fixed and stable (e.g., Choi, Nisbett, & Norenzayan, 1999; Heine et al., 2001). This endorsement of an entity theory would therefore suggest that Americans would be more disposed toward making definitive judgments about others. In contrast, those holding an incremental view of traits would be inclined to see more malleability in others' characteristics and may therefore be more considerate before making a judgment about someone (e.g., Dweck & Leggett, 1988). This is not a full explanation of these effects, particularly as we know of no work that has directly examined these traits among Spaniards. Future research will therefore be needed to fully disentangle these effects.

Perceivers also differed in how they categorized the targets. Examinations of perceivers' response bias data showed

a significant linear relation whereby participants from cultures where diversity in sexual orientation is less accepted were more likely to make false negative errors (erroneously categorizing gay targets as straight) rather than false positive errors (erroneously categorizing straight targets as gay). Perceivers from Japan, where homosexuality is the least tolerated, showed a greater tendency to judge targets as straight than did perceivers from the United States, followed by perceivers from Spain, where homosexuality is the most tolerated. Given that cultural acceptance of diversity in sexual orientation is likely to influence the openness with which gays may express their sexual orientations, perceivers from less accepting cultures may be less experienced in distinguishing gay and straight men. Specifically, they would have likely encountered fewer openly gay people and would have received less feedback regarding their judgments of who is gay and straight during social encounters and casual perceptions. Targets who they may correctly believe to be gay might therefore be limited to highly stereotypical individuals, causing them to maintain a higher threshold for making the assessment that someone is gay rather than straight. Further work would be useful for gaining a better understanding of this process.

The only work that has examined the accuracy of judgments of nonverbal behavior across cultures has been restricted to the domain of emotion recognition. Similarly, the levels of accuracy observed for the categorization of sexual orientation in the current work were similar to that previously observed for cross-cultural emotion recognition, for which the mean level of accuracy across all emotions was reported as 58% (Elfenbein & Ambady, 2002). The present data therefore build on that work by showing similar universality for judgments related to social categorization and group membership. Multiple types of socially relevant information may therefore be gleaned from facial appearance across cultures. These findings expand our understanding of the human capacity for perceiving and extracting social knowledge from others' faces across cultural boundaries.

Notably, the emotion recognition literature has shown evidence for both cultural universality and cultural specificity. Meta-analysis of numerous studies on the accurate recognition of emotions across cultures showed that individuals were better at judging the emotions of same-culture faces than other-culture faces (Elfenbein & Ambady, 2002). Although we did not observe an ingroup advantage in the current data, it remains possible that such an effect might be revealed with a greater number of studies, such as that constituting a meta-analysis. Alternatively, emotions are recognized and judged rather explicitly whereas the judgment of sexual orientation may be judged outside of awareness (Rule et al., 2008; Rule, Macrae, & Ambady, 2009). Thus, it is possible that the "familiarity breeds accuracy" hypothesis of emotion recognition (Elfenbein & Ambady, 2003b) may not apply to

judgments of sexual orientation because of differences in the consciousness of processing the relevant cues.

The present findings also extend what is known about the consensus of judgments across cultures. Although earlier studies showed that perceivers agreed across cultures in their judgments of some personality and physiognomic traits from nonverbal and facial cues (e.g., Montepare & Zebrowitz, 1993), this work may be the first study to show that participants may tend toward agreement cross-culturally in the way they categorize others into social groups. This finding therefore adds a new dimension to the literature on cross-cultural consensus and better informs our understanding of person perception.

Despite the diversity in acceptance of homosexuality among the three cultures studied in the present work, it would be useful to also investigate these effects in additional cultures. For example, aside from expansion of the current work to other nationally defined cultures, it would also be interesting to explore how these effects vary across subcultural groups (e.g., different racial or ethnic groups) and sexual minority groups (e.g., gay versus straight perceivers) within diverse cultures. Moreover, it would be of interest to investigate the specific cues that form the basis for judgments of sexual orientation across cultures, as previous work has done for targets and participants in the United States (Rule et al., 2008).

One potential limitation is that the present studies employed stimuli drawn from personal advertisements, which may also pose a limitation to the generalizability of the present findings. Previous work has indicated that individuals work to appear counterstereotypical in their personal advertisements (e.g., Bailey et al., 1997). Thus, individuals' selection of photos for their personal advertisements may be biased in a way that contributes toward a Type II error, causing accuracy levels to appear lower than what they might actually be. Similarly, we cannot know whether the photos actually represent the individuals posting the advertisements. This additional noise might reduce the size of the accuracy effects, again because individuals likely strive to appear counterstereotypical rather than as representative exemplars of their groups.

In sum, male sexual orientation was perceived with better than chance accuracy and high consensus across cultures. These data therefore indicate that men's sexual orientations can be reliably judged from their faces, regardless of the target's or perceiver's culture.

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2. Because of a computer error, the response times for two of the participants' categorizations were lost.

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