AMERICAN-JAPANESE CULTURAL DIFFERENCES IN ATTRIBUTIONS OF PERSONALITY BASED ON SMILES

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ABSTRACT: Several studies have already documented how Americans and Japanese differ in both the expression and perception of facial expressions of emotion in general, and of smiles in particular. These cultural differences can be linked to differences in cultural display and decoding rules (Ekman, 1972; and Buck, 1984, respectively). The existence of these types of rules suggests that people of different cultures may hold different assumptions about social-personality characteristics, on the basis of smiling versus non-smiling faces. We suggest that Americans have come to associate more positive characteristics to smiling faces than do the Japanese. We tested this possibility by presenting American and Japanese judges with smiles or neutral faces (i.e., faces with no muscle movement) depicted by both Caucasian and Japanese male and female posers. The judges made scalar ratings of each face they viewed on four different dimensions. The findings did indicate that Americans and Japanese differed in their judgments, but not on all dimensions.

Several studies have shown that Americans and Japanese differ in both the expression and perception of facial expressions of emotion, and of smiles in particular. Over two decades ago, for example, Ekman (1972) and Friesen (1972) showed how the Japanese used smiles to mask their negative feelings in the presence of a higher-status experimenter. In that study, American and Japanese subjects viewed a highly stressful film twice, first alone, and then a second time with a higher-status experimenter. When alone, the Americans and Japanese displayed the same facial configurations of disgust, anger, fear, and sadness. When the experimenter was

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present, however, their expressions differed dramatically, with the Japanese invariably smiling when they originally felt intense negative feelings.

American-Japanese cultural differences have also been found in the judgment of emotion. Ekman et al. (1987), for instance, presented smiles (and many other expressions) to American and Japanese judges (along with judges from eight other cultures), and asked them to rate how strongly they perceived the expressions. Americans judged the faces more intensely than the Japanese, and this finding was replicated by Matsumoto (1990) and Matsumoto and Ekman (1989), who showed that this cultural difference existed regardless of the race or gender of the poser being judged.

It is not surprising that the American and Japanese cultures differ in their display or interpretation of smiles. The smile is one of the most intriguing facial expressions, because of its multiple meanings and uses (see Ekman, 1985; Ekman & Friesen, 1975, 1982; Ekman, Davidson, & Friesen, 1990). Smiles can convey genuine positive feelings such as happiness, pleasure, or joy, or simulate them when they are not felt. Smiles can conceal negative feelings such as sorrow, anger, or disgust, or blend with them to qualify them. Smiles are used as social signals, conveying greetings, acceptance, or appeasement. No other facial expression can convey as many varied and complex messages as the smile.

The smile is especially important to the concept of cultural display rules. Ekman and Friesen (1975, 1982), for example, suggest that when a cultural display rule dictates that one's negative feelings be hidden from others, the smile is most often used as that mask. In fact, they used this concept to explain the difference between the American and Japanese reactions in the second condition of their study (Ekman, 1972; Friesen, 1972).

At the same time, differences in cultural display rules for smiles also suggest that cultures differ in their judgment rules for smiles. Buck (1984) termed these types of rules decoding rules. If, for example, the Japanese have a display rule to use smiles more frequently than Americans for social appropriateness, and relatively less frequently than Americans to display true feelings of pleasure or joy, then it would follow that the Japanese would perceive less emotion in smiles than would the Americans. That is, the Japanese would have learned to a larger degree than Americans that a smile is not necessarily a sign of true, felt emotion, but rather a social signal used to maintain social appropriateness. This would explain Matsumoto and Ekman's (1989) findings concerning cultural differences in attributions of intensity to smiles.

Because smiles are used and interpreted differently in the U.S. and Japan, they may contribute to differences in attributions of personality between the two cultures. That is, members of both cultures may hold implicit assumptions about some of the underlying personality traits of others, based on whether or not the person they are judging is smiling. Americans, for example, may associate smiling faces with more positive traits, such as sincerity, honesty, sociability, or intelligence, as well as with more physical judgments of attractiveness or beauty. On the other hand, the Japanese may associate non-smiling faces with these types of positive traits more than smiling faces.

There is considerable anecdotal and impressionistic evidence to suggest that these types of cultural differences in implicit assumptions based on smiling faces exist. Japanese people, for example, are socialized to control their emotions, positive and negative, to a much greater degree than Americans. In Japan, maturity is based to a larger extent than in the U.S. on one's ability to remain stoic and serious despite one's true, inner feelings. Smiles are used much more than in the U.S. to mask negative feelings, or to simulate positive ones, because social circumstances warrant it. Consequently, smiles are not used as indiscriminantly as they are in the U.S., and people who smile "too much" are cautiously viewed as dishonest, untrustworthy, naive, or ignorant.

In the U.S., however, smiles do not carry such negative connotations. People are taught to smile in order to convey pleasantness, sociability, and attractiveness. Those who do *not* smile enough are seen as aloof, unemotional, or uncaring—common stereotypic notions of the Japanese. When photographed, Americans are taught to say "cheese" to simulate positive feelings. Japanese photographs on the whole are interestingly void of such American pleasantries, with some exception of photos of Japanese youth.

Thus, it makes sense that the Americans and Japanese would come to substantially different, implicitly held, assumptions about personality based on smiling versus non-smiling faces. These assumptions may be based in cultural differences regarding display rules governing the use of smiles, and influence the types of associations one may have when judging others. On one hand, Americans may tend to make positive attributions of social and personality dimensions to smiling versus non-smiling faces; on the other hand, Japanese may tend to make less positive attributions of these dimensions to smiling faces.

We tested these ideas by presenting American and Japanese judges with smiles or neutral faces (i.e., faces with no muscle movement) depicted by both Caucasian and Japanese males and females. This study builds upon a growing literature on American-Japanese cultural differences

on emotion in general (e.g., Matsumoto, Wallbott, & Scherer, 1989), and on facial expressions in particular (see above). The judges in this study made scalar ratings of each face they viewed on four different social-personality attributes—attractiveness, intelligence, friendliness, and approachability. While many other types of dimensions could have been rated, we selected these four as an initial test of the ideas offered above. In addition, our experience suggested that ratings of more than four dimensions at one time would have been unwieldy for the judges. We hypothesized that Americans, but not the Japanese, would rate smiling faces more positively on each of the social-personality attributes than neutral faces, because of cultural differences in their implicit assumptions underlying the judgment of smiles.

Method

Judges

Judges were American and Japanese college undergraduates participating in partial fulfillment of class requirements. They were randomly assigned to one of two groups, with Group 1 making judgments of smiles, and Group 2 making judgments of neutrals. Group 1 included 33 Americans (12 males and 21 females) and 44 Japanese (22 males and 22 females); Group 2 included 37 Americans (15 males and 22 females) and 47 Japanese (24 males and 23 females).

All Americans were born and raised in the U.S., and had parents who were born in the U.S.; there were no individuals of Asian descent. All Japanese were born and raised in Japan, and had parents who were born in Japan. The judges in both cultures were students at major universities in large metropolitan areas (San Francisco and Osaka), providing some equivalence for social class and education.

Facial Stimuli

There were two sets of facial stimuli, each containing 52 photos. Each photo was posed by a different person who contributed a photo to both sets. There were 16 Caucasian males, 15 Caucasian females, 9 Japanese males, and 12 Japanese females. One set was comprised only of smiles, each corresponding to Ekman and Friesen's (1982) description of *felt happiness* [the innervation of the muscle surrounding the eyes (*orbicularis oculi*) and the upward pull at the lip corners (*zygomatic major*)]. These photos were independently coded by two raters using Ekman and Friesen's (1978) Facial Action Coding System (FACS). Reliability was computed as the percent of FACS codes agreed upon by the two raters relative to the total number of codes scored; reliability across all 52 photos was .95.

The other set was comprised of neutral photos (i.e., faces with no expressions). Each was reviewed by a trained FACS coder (DM), to ensure that no expression was portrayed. Poser constancy between the sets ensures that comparisons of the two expressions are not confounded by individual poser differences.

Elsewhere (Matsumoto & Ekman, 1989), we contend that studies of cultural differences in judgments of facial expressions must include stimuli posed by individuals whose race is congruent with the culture of the judges making the ratings. This is important in order to eliminate the possible confound of judges rating faces posed by people who are obviously not of the same culture. While poser effects were not part of the main hypothesis of this study, another advantage to the inclusion of cross-race and cross-gender stimuli is the ability to conduct post-hoc tests examining the effects of these factors on judgments.

Judgment Tasks and Procedures

All procedures were exactly the same in the U.S. and Japan. Translation accuracy of the experimental protocols and instructions was verified using a back-translation procedure. The stimuli were presented in a random order (different for both stimulus sets), one at a time, for 10 seconds each. The judges rated each photo on attractiveness, intelligence, friendliness, and approachability, in this order, using 9-point scales labeled NOT AT ALL (0), A LITTLE (1), MODERATE (4), and A LOT (8). Ratings were obtained in this manner for each photo, and completion of ratings for all 52 photos marked the end of the experiment. As mentioned above, judges in Group I rated smiling faces, and judges in Group 2 rated neutrals; thus, expression type was a between-judges factor.

These dimensions were chosen for this initial study for several reasons. First, they are all judgments that are readily made from facial expressions (Ekman, 1978). At the same time, they are different; attractiveness, for example, refers to one's physical appearance, while intelligence presumably refers to more internal attributes. Friendliness and approachability refer to aspects of social interaction. Our experience with judgment studies in the past suggested that the inclusion of more dimensions would have made the rating procedures cumbersome for the judges. We also acknowledge here the fact that other dimensions can also be studied, to further test our ideas.

Results

Data Reduction and Analysis Plan

In order to examine redundancy in the ratings, the scores for each scale were averaged across the four poser types, and a principal components analysis with Varimax rotation was computed on the 16 variables (4 ratings x 4 poser types). Squared multiple correlations were used as communality estimates. Three factors had eigenvalues greater than 1.0, cumulatively accounting for 80.1% of the total variance. Factor 1 included the four ratings of friendliness and the four ratings of approachability (54.3% of the variance); factor 2 included the four ratings of attractiveness (16.9% of the variance), and factor 3 included the four ratings of intelligence (8.9% of the variance). Ratings of friendliness and approachability were thus averaged into a single "sociability" score.

In order to eliminate the possible confound of cultural differences in response sets, the data for each of the three ratings were standardized within both cultures (i.e., across poser types) prior to any analyses.[1] A five-way, overall analysis of variance (ANOVA) was computed separately on each of the three ratings, using judge culture (2), judge gender (2), and expression type (2) as between-subjects factors, and poser race (2) and poser gender (2) as repeated-measures factors. The main hypothesis concerning cultural differences was tested via a series of planned comparisons comparing judgments of smiles versus neutrals, separately for each of the four poser types and two judge cultures (i.e., 3 ratings x 4 poser types x 2 cultures = 24 total comparisons).[2]

The three overall ANOVAs were useful in the identification of other potentially interesting effects for post-hoc analysis. For these, we identified effects involving the judge gender, poser race, or poser gender factors, and conducted post-hoc means comparisons based on the simple effects of these factors. In order to control for family-wise error, Bonferroni adjustments in the *p*-values were used in all post-hoc analyses, and all significant post-hoc tests met this criterion.

Expression Differences as a Function of Judge Culture

As described above, we compared ratings on smiles against those on neutral expressions, separately for each of the three ratings, four poser types, and two judge cultures (Table 1).[3] The findings were quite clear. Ratings of attractiveness by *both* the American and Japanese judges did not differ as a function of expression type for any of the four poser types.

TABLE 1

Comparisons of Smiling vs Neutral Faces Across Poser Type, Rating, and Judge Culture

	Expression				
Type of poser	Smiles	Neutrals	*F*	*p*	r^2
I. American judges					
Attractiveness					
Caucasian male	.12 (1.16)	−.17 (.95)	1.28	ns	.02
Caucasian female	.32 (.99)	.31 (1.06)	.00	ns	.00
Japanese male	−.41 (1.16)	−.32 (.98)	.11	ns	.00
Japanese female	.01 (1.13)	.03 (1.05)	.00	ns	.00
Intelligence					
Caucasian male	−.07 (.89)	−.76 (1.11)	8.02	<.01	.11
Caucasian female	−.20 (.91)	−.43 (1.12)	.86	ns	.01
Japanese male	.77 (.77)	.05 (1.14)	9.36	<.01	.12
Japanese female	.66 (.91)	−.19 (1.31)	9.67	<.01	.12
Sociability					
Caucasian male	.58 (.68)	−.74 (.89)	47.30	<.0001	.41
Caucasian female	.64 (.82)	−.52 (.94)	29.71	<.0001	.31
Japanese male	.64 (.67)	−.88 (.87)	64.89	<.0001	.49
Japanese female	.80 (.74)	−.68 (.91)	53.74	<.0001	.45
II. Japanese judges					
Attractiveness					
Caucasian male	.17 (1.12)	.19 (.96)	.01	ns	.00

TABLE 1 (*Continued*)

Type of poser	Expression: Smiles	Expression: Neutrals	F	p	r^2
Caucasian female	.87	.78	.13	ns	.00
	(1.33)	(1.09)			
Japanese male	−.31	−.76	2.43	ns	.03
	(1.63)	(1.06)			
Japanese female	−.53	−.48	.04	ns	.00
	(1.51)	(1.10)			
Intelligence					
Caucasian male	.05	.34	1.90	ns	.02
	(.99)	(1.00)			
Caucasian female	.60	.63	.02	ns	.00
	(1.20)	(1.33)			
Japanese male	−.48	.00	2.57	ns	.03
	(1.53)	(1.27)			
Japanese female	−.69	−.38	1.29	ns	.01
	(1.16)	(1.37)			
Sociability					
Caucasian male	.13	−.39	6.19	<.05	.07
	(1.01)	(.96)			
Caucasian female	.42	−.50	19.74	<.0001	.18
	(.98)	(1.00)			
Japanese male	.57	−.31	12.32	<.001	.12
	(1.33)	(1.04)			
Japanese female	.48	−.29	11.15	<.01	.11
	(1.16)	(1.02)			

Note. Data presented in each cell are standardized means (top) and standard deviations (bottom in parentheses).

Americans did, however, rate smiling faces as more intelligent than neutral faces on three of the four poser types; there were, however, no differences in intelligence ratings by the Japanese. Finally, *both* the Americans and the Japanese gave higher sociability ratings to smiling than to neutral faces. But, the degree of difference between smiles and neutrals was substantially different between Americans and Japanese, with the effect sizes for Americans quite large in comparison to those for the Japanese (mean r^2s = .42 and .12 for Americans and Japanese, respectively).[4]

TABLE 2

Post-Hoc Analyses of Poser Race Differences

Judge culture	Poser race: Caucasian	Poser race: Japanese	F	p	r^2
Attractiveness					
American	.16	−.17	39.03	<.0001	.37
	(1.00)	(1.04)			
Japanese	.51	−.51	92.70	<.0001	.51
	(.99)	(1.23)			
Intelligence					
American	−.34	.33	103.23	<.0001	.61
	(.99)	(1.08)			
Japanese	.40	−.59	45.97	<.0001	.34
	(1.02)	(1.25)			
Sociability					
American	.03	−.02	1.07	ns	.02
	(.98)	(1.06)			
Japanese	−.10	.11	8.01	<.01	.08
	(.98)	(1.13)			

Note. Data presented in each cell are standardized means (top) and standard deviations (bottom in parentheses).

Post-Hoc Analyses of Poser Race

Poser race differences (i.e., Caucasian versus Japanese posers) were tested separately for each judge culture and rating (Table 2). Both American and Japanese judges rated Caucasian faces more attractive than Japanese faces (although the effect size for Japanese judges was substantially larger). Interestingly, American judges rated Japanese faces as more intelligent than Caucasian faces, while Japanese judges rated Caucasian faces more intelligent than Japanese faces. Finally, there was no difference in sociability ratings between Caucasian and Japanese faces for American judges; Japanese judges, however, rated Japanese faces as more sociable than Caucasian faces.[5]

Discussion

The findings suggest that Americans and Japanese do differ in their implicit assumptions about social-personality dimensions as a function of smiling

versus not smiling, but not on all dimensions judged. The two cultures disagreed in their ratings of intelligence, for example, with Americans rating smiling faces as more intelligent than neutral faces, while the Japanese ratings on intelligence did not differ as a function of expression. Also, although the two cultures agreed that smiling faces were more sociable than neutral faces, they did disagree in the *degree* of difference, with the difference being larger for the Americans than for the Japanese. Americans and Japanese did not differ, however, in ratings of attractiveness as a function of expression type.

These findings cannot be attributed to cultural differences in response sets, because the data were standardized within each culture prior to any analyses. Moreover, the findings cannot be attributed to differences in poser race, as expressions posed by both Caucasians and Japanese were included in the stimulus set. Rather, we predicted these findings on the basis of cultural differences in implicit assumptions of personality based on smiling versus non-smiling faces.

Cultural differences in personality attributions based on smiles may partially account for difficulties in cross-cultural communication. The Japanese, for example, may interpret Americans' smiles less favorably than Americans intend. Americans, on the other hand, may interpret the lack of Japanese smiles as a more negative sign than the Japanese really intend. Cultural differences in the interpretation of both emotion and non-emotion social dimensions may lead to frustration and distrust. These types of interpretations have been noted in a number of trade books dealing with American-Japanese interactions (e.g., Condon, 1984; Condon & Saito, 1974; De Mente, 1990).

The findings also indicate, however, that the cultural differences were dimension specific, rather than global across dimensions. This specificity warrants consideration of the dimensions that contributed to differences in some cases, but not in others. For example, a characteristic of ratings of attractiveness may be that it is a rating of an external, physical characteristic, and that ratings of intelligence and sociability are ratings of internal characteristics. American and Japanese cultural differences in implicit assumptions based on smiles may occur according to an external/internal dimension. Other such factors may also underlie these dimensions, and it is important that we incorporate them in tests of cultural differences.

Another interesting question that arises from these findings concerns the type of smile used in this study. The smiles used in this study all corresponded to Ekman and Friesen's (1982) description of "felt happiness," with both the muscles around the eyes (orbicularis oculi) and the lip corners (zygomatic major) innervated. These smiles are perhaps the least representative of the type of smile used in social situations where display rules

are in effect. The degree to which the judges believed the expressions were actually spontaneous, therefore, and how these impressions may have affected the ratings, are not clear. Smiles that differ in muscle innervation, intensity, and degree of judged spontaneity may produce different patterns of cultural differences. The Japanese, for example, may judge low intensity expressions more positively than Americans. It is also possible that the nature of the American-Japanese cultural differences may differ more than what was found in this study if smiles *without* the innervation of the muscle around the eyes (orbicularis oculi) were used. These types of smiles are more commonly used to express something other than truly felt, positive emotion (Ekman, 1985; Ekman & Friesen, 1982), and are important in terms of the theoretical rationale developed in this study. Future research will need to address these possibilities.

Post-hoc analyses produced interesting, yet unpredicted, findings involving poser race differences. That both the Americans and Japanese rated Caucasians as more attractive might have arisen from stereotypic notions about beauty that are fostered via the mass media which are continually shared around the world. Reports concerning academic achievements of the Japanese, at least in the U.S., may account for stereotypes concerning differences in intelligence, and these would at least account for the finding that Americans rated Japanese faces as more intelligent. That the Japanese rated Japanese posers more sociable than Caucasians is suggestive of the importance of racial congruence or familiarity to attributions of social traits in Japan.

This study was not conducted without limitations, some of which have been mentioned earlier. One limitation has to do with the type of ratings subjects made. While attractiveness, intelligence, friendliness, and approachability are judgments typically derived from facial expressions, they are not necessarily the most important social dimensions judged from faces, nor are they necessarily the most representative of such judgments. Other dimensions (e.g., trust, sincerity) may be even more influenced by culture than those used here, and these definitely need to be tested as well.

Another limitation concerns the nature of the expressions used in this study, which included only smiles and neutral faces. While we consider smiles as perhaps the most amenable expression to a study of this nature, we also acknowledge that the same questions can be raised concerning other facial expressions as well. These differences also need to be addressed in future work involving a wider range of emotional expressions.

Notes

1. Given that the main analyses involved within-culture comparisons of smile versus non-smile ratings, it was not necessary to standardize the data by culture. Still, we believe it is

a good procedure to follow as a standard practice in cross-cultural work, given the possibility that follow-up analyses may involve between-culture comparisons, and the fact that all within-culture findings are exactly the same anyway. As it turns out, the main effects of judge culture on all three ratings using the raw scores were indeed significant, which made it even more imperative to standardize the scores for analyses involving other effects.

2. The pooled error terms from the overall ANOVAs were used as the error terms for the planned comparisons.
3. As it turns out, the four-way interaction between judge culture, expression type, poser race, and poser gender was significant for all three ratings, $F(1, 150) = 12.96$, $p < .001$; $F(1, 149) = 4.15$, $p < .05$; and $F(1, 148) = 7.06$, $p < .01$; for attractiveness, intelligence, and sociability, respectively. In addition, these were the highest-order interactions involving the judge culture and expression type factors. Thus, the planned comparisons corresponded to the highest-order interactions that would have been used to identify simple effects analyses, according to the procedures outlined by Keppel (1992) and Maxwell and Delaney (1992), and as adopted in this study.
4. Indeed, the two-way interaction between judge culture and expression type in the overall, five-way ANOVA was significant, $F(1, 148) = 3.97$, $p < .05$, reflecting this difference.
5. The two-way interactions between judge culture and poser race for both intelligence and sociability ratings were significant, reflecting these differences, $F(1, 149) = 101.34$, $p < .0001$, and $F(1, 148) = 6.84$, $p < .01$, respectively.

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