THE INFLUENCE OF FACIAL EMOTION DISPLAYS, GENDER, AND ETHNICITY ON JUDGMENTS OF DOMINANCE AND AFFILIATION

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ABSTRACT: Facial expressions of emotions convey not only information about emotional states but also about interpersonal intentions. The present study investigated whether factors known to influence the decoding of emotional expressions—the gender and ethnicity of the stimulus person as well as the intensity of the expression—would also influence attributions of interpersonal intentions. For this, 145 men and women rated emotional facial expressions posed by both Caucasian and Japanese male and female stimulus persons on perceived dominance and affiliation. The results showed that the sex and the ethnicity of the encoder influenced observers' ratings of dominance and affiliation. For anger displays only, this influence was mediated by expectations regarding how likely it is that a particular encoder group would display anger. Further, affiliation ratings were equally influenced by low intensity and by high intensity expressions, whereas only fairly intense emotional expressions affected attributions of dominance.

KEY WORDS: facial emotion displays; gender; ethnicity; dominance; affiliation.

Emotional facial expressions and their meaning in interpersonal interactions have been of interest to psychologists since Darwin's (1872) seminal work on the expression of emotion in man and animals. This line of research has mainly focussed on the question of whether emotion displays accurately communicate the internal states of individuals and which states observers tend to associate with which displays (see e.g., Ekman, 1982; Buck, 1984, but see also Russell, 1994, 1995). Yet, emotion displays con-

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vey information not only regarding an individual's emotional state but also regarding their behavioral intentions in an interaction (Knudson, 1996).

In recent years, the influence of such factors as the culture and gender of both sender and observer on the decoding of emotional expressions has gained interest (e.g., Brunel, 1989; Hall, 1997; Kirouac & Hess, 1999). In this context it has been speculated that expectations regarding the emotional behaviors of members of different groups may influence the interpretation of emotion displays. Thus the question arises whether factors such as ethnicity and gender also influence the attribution of behavioral intentions based on emotional expressions. The present study had the goal to investigate this issue with regard to the attribution of dominance and affiliation as a function of the type and intensity of the facial display.

Emotion Displays and Trait Attributions

The notion that emotional facial expressions communicate behavioral intentions follows from appraisal theories of emotion. Specifically, Frijda and his colleagues (e.g., Frijda, 1986; Frijda, Kuipers, & ter Schure, 1989) provide a framework that views emotions both as experiential aspects of an appraisal process and as states of action readiness. States of action readiness are defined as "the individual's readiness or unreadiness to engage in interaction with the environment" (Frijda et al., 1989, p. 213). These states have been operationalized with statements such as "I wanted to approach, to make contact" or "I did not want to oppose, I wanted to yield to someone else's wishes" (Frijda et al., 1989). Thus, states of action readiness describe the behavioral intentions of individuals who are experiencing an emotional state, towards their environment. For example, anger and disgust are associated with rejection, fear and sadness with helplessness, fear and disgust with avoidance, and happiness with approach.

Social Context and Emotion Displays

Thus, emotion displays convey, by their very nature, information not only regarding the senders' emotional states, but also information regarding their interpersonal intentions (see also, Frijda & Mesquita, 1994). However, the attribution of behavioral intentions also depends on the context of the interaction. Such elements as the relative status of the interaction partners, the gender composition of the dyad, and the cultural background of the interaction partners all play an important role in this regard. In fact, the

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social context can be expected to modify the interpretation of a specific expression, in so far as context information is used as part of the process of understanding the other, that is, permits the taking of the other's perspective in a given situation. The social context in which an expression occurs gives us hints regarding the expected emotions of the interaction partner. Hence, we expect someone whom we know to have a fear of spiders to react more negatively to the presence of a spider than someone who spends his life studying spiders. But even in situations that provide minimal context information, we may still use stereotype based knowledge regarding the social group membership of the sender. This knowledge can be translated into decoding rules which lead us to expect certain emotional reactions to be more likely to be shown by members of some groups than by others. For example, women are known to cry when angry (Crawford, Kippax, Onyx, Gault, & Benton, 1992; see also Shields, 1987), a behavior very atypical for men. Therefore, when seeing a man cry we would probably not consider the possibility that he is angry, whereas we might consider this possibility when we see a women cry (for the role of social context on the decoding of emotional expressions see also, Hess & Kirouac, 2000).

Emotion Displays and Social Group Membership

Norms regarding appropriate emotional behavior exist for many types of social interactions (Ekman & Friesen, 1971; Hochshild, 1983). These norms vary for men and women as well as for members of different cultures (Argyle, 1986; Saarni & Weber, 1999). For example, it is normative in North America that women will be more facially expressive than will men, especially with regard to smiling (Briton & Hall, 1995). It turns out that there is considerable congruence between these beliefs/norms regarding men's and women's expressivity and the available behavioral data (see Fischer, 1993). The exception to this normative rule occurs with anger where men have been shown to be both more facially expressive and more likely to display aggressive behavior than are women (see Fischer, 1993). Also, there is evidence that Japanese are generally believed to be less expressive and also are less expressive of negative emotions (e.g., Pittam, Gallois, Iwawaki, & Kroonenberg, 1995). In addition, certain expressive modes are more permissible, and thus more likely to procure positive effects, for members of some groups than for others.

It follows from these considerations that the same expression of, for example, anger when shown by a woman may have a different impact on attributions of dominance and affiliation than when shown by a man. Con-

versely, based on the pervasive expectation that women smile more than men (Brody & Hall, 1993), a smile by a man may be more informative regarding his affiliative intentions than the same smile would be when displayed by a woman. Particularly in situations where we do not know the interaction partner well, these expectations are likely to influence our attributions of behavioral intentions.

The hypothesis that perceivers consider the emotional expressions of an unknown sender informative regarding the sender's behavioral intentions, finds support in a study by Knudson (1996). Specifically, he found that displays of happiness are associated with high dominance and affiliation ratings, displays of anger and disgust with high dominance and low affiliation ratings, and displays of fear and sadness with low dominance ratings. In his analysis, however, Knudson did not consider the gender or the ethnicity of the stimulus person. Yet, given the pervasive influence of gender and ethnicity of the interaction partners on interpersonal communication processes in general as well as on beliefs regarding emotional expressivity, these factors need to be investigated.

In a review of the literature on the influence of social group membership on the decoding of emotion displays, Kirouac and Hess (1999) note that the influence of cultural and gender specific emotion norms biases, in particular, the ratings of the *intensity* of the underlying state that is attributed to emotion displays. This may lead to failures to recognize certain displays correctly, especially those of medium to low intensity. This is of not trivial concern since most naturally occurring emotion displays tend to be relatively weak and ambiguous (Motley & Camden, 1988). Social group membership influences on the decoding of such less intense expressions may have consequences not only for the efficacy of emotion communication between members of different social groups but also for the attribution of interpersonal intentions to individuals showing these weak emotion displays. It seemed pertinent, therefore, to include both weak and strong emotion displays in the present study.

Consequently, the aim of the present study was to investigate the influence of facial emotion displays on the attribution of behavioral intentions. Behavioral intentions of particular interest are those associated with dominance and affiliation. This is the case because dominance displays serve to establish power relations between interaction partners, whereas affiliative displays are important for rapport and social cohesion.

Specifically, two questions were addressed. First, does the influence of facial emotion displays on perceived dominance and affiliation vary as a function of the social group membership of the encoder? That is, are men and women as well as Japanese and Caucasian senders rated differently

when showing the same emotions? The second question regards the issue how the intensity of the facial display impacts on these ratings.

Method

Design

A five factorial design was employed with the between subjects factors Sex of Participant, Ethnicity of the stimulus person (Caucasian, Japanese), and Intensity of the expression (low intensity expression, high intensity expression) and the within subjects factors Sex of stimulus person and Emotion display (anger, disgust, fear, sadness, and happiness). In addition, we included the neutral face for each of the stimulus persons, which resulted in an additional level of intensity. This was important as previous research has shown that a number of morphological features of the face such as baby facedness, a square versus round jaw, or the height of the forehead strongly influence ratings of dominance and affiliation (e.g., Berry & Brownlow, 1989; Keating, 1985; Keating & Bai, 1986). As the stimulus material was taken from the JACFEE (see below), each actor portrays only one emotion. Thus, for this stimulus set, facial morphology is confounded with emotional expression. It is therefore crucial to obtain ratings of the neutral faces and to base subsequent analyses on the difference between neutral and emotional expressive faces so as to disentangle this confound. For each of the resulting 12 conditions, 12 participants were recruited; one additional man rated the high intensity expressions by Japanese stimulus persons resulting in a total of 13 participants for this condition.

Participants

A total of 145 students from Dartmouth College, participated for extra course credit. Their mean age was 18.7 years, 87% of the participants were Caucasian, and none were Japanese. Participants came to the laboratory in groups of one to three individuals.

Stimuli

Facial expressions of happiness, anger, disgust, sadness, and fear from two male and two female Japanese and two male and two female Caucasian stimulus persons were selected from the JACFEE stimuli created by Matsumoto and Ekman (1988). This series is composed of emotional facial expressions by Caucasian and Japanese young adults who have been in-

structed to pose various basic emotions. Each individual in the set poses a neutral expression and one of the basic emotions. The colored facial photographs were digitally scanned into high-quality black and white computer images. To create the low and high intensity expressions, the neutral and the intense emotional pose from a given stimulus person were combined by a morphing program such that intermediate expressions between the neutral and the full emotional display were created. The expressions representing 40% and 80% incremental intensity steps of the pattern of relevant muscle movements away from the neutral toward the intense emotional expression were retained as low and high intense expressions respectively.[1] The resulting 120 stimuli (2 ethnic origins of actor $\times$ 3 intensity steps $\times$ 5 emotions $\times$ 2 actors $\times$ 2 sex of actor) were broken down into blocks of 20. Each block of 20 stimuli consisted of all of the expressions for a given intensity level (either neutral, moderate or high) and a given ethnicity group (Japanese or Caucasian). Each rater responded to one of these sets, randomly assigned with the restriction that equal numbers of male and female raters see each set. The stimuli were presented in a random order or its reverse. Raters saw the stimuli on a 14-inch computer screen viewed at eye level.

Dependent Measures

Participants rated each stimulus person on the Interpersonal Adjective Scales (IAS-R; Wiggins, Trapnell, & Phillips, 1988). This scale consists of a series of 32 trait adjectives that sample the interpersonal dimensions of dominance and affiliation. Participants were instructed as follows "Based on your first impression, please rate how accurately each word describes the person." The continuous scales were anchored with "extremely inaccurate" at one end and "extremely accurate" at the other. The scale yields two composite scores, one for dominance and one for affiliation, as well as 8 more specific trait scores. In the present context only the dominance and affiliation composite scores were of interest.

Procedure

Each participant was greeted by the experimenter and asked to take a seat at one of three viewing stations that were visually isolated from each other within a large laboratory room. The consent form described the experiment as one examining "the traits that individuals attribute to human faces." The participants were informed that their task would be to rate a series of individuals using a list of trait adjectives. They were further informed of their right to cease participation at any time.

Once they had signed the consent form, participants received detailed written instructions regarding the task and completed two practice trials. The experimenter then answered any questions regarding the procedure and left the room. Each rater saw one of the six blocks of 20 stimuli described previously. Following the judgment task, participants completed a post-rating questionnaire. Finally, the experimenter debriefed the participants regarding the goals of the study and answered any remaining questions.

Results

Preliminary Analyses

The total set of stimulus photographs contained two different stimulus persons representing each level of the factors manipulated within the design. The analyses reported below are based on the ratings of perceived dominance and affiliation averaged across the two different exemplars representing each condition.

An initial analysis to assess the influence of Sex of rater found no main effect. Power for this effect is based on the total number of participants and was calculated to be 91% for a medium effect size, allowing us to conclude that any effect due to the sex of the rater was either small or non existent. Sex of rater did emerge as part of a 3-way interaction for ratings of affiliation and as part of two three-way interactions for dominance; however, these interactions accounted in both cases for less than 0.5% of the total variance. This factor was therefore omitted from all further analyses. Since the data did not have sphericity, Greenhouse-Geisser corrections were employed for all repeated measures analyses reported below.

Main Analyses

The goal of the present study was to assess the influence of sex and ethnicity of the stimulus person as well as of the intensity of the emotional expression on attributions of dominance and affiliation. To address these two questions two principal sets of analyses were conducted. We then conducted further analyses to better elucidate the pattern of results.

Does the intensity of the expression influence attributions of dominance and affiliation? To address this question, we compared ratings for neutral and emotional expressions. An initial analysis of variance with the factors Ethnicity of the encoder, Intensity of the expression and the within subjects factors Emotion and Sex of actor was conducted. The significant

intensity effects (see Table 1) were followed up with post-hoc analyses (see the section on Intensity effects below).

Does the influence of facial emotion displays vary as a function of the social group membership of the encoder? To address this question we employed profile analyses. Profile analyses permit us to assess for each of the five emotions whether the dominance and affiliation ratings varied as a function of the sex or ethnicity of the expressor. If the emotional expressions by men and women (or by Caucasians and Japanese) are rated differently, then the profiles will be non-parallel. If they are rated in a similar manner, even though possibly at different overall levels, the profiles will be parallel. Differences in the overall level of the ratings can be diagnosed by assessing whether the profiles are coincident (for more details regarding this procedure see for example, Tabachnick & Fidell, 1996).

How does it all fit together? The two research questions outlined above are not independent. As discussed in the introduction we may expect some effects of ethnicity and gender to be more prevalent for weak than for strong expressions or vice versa. Further, the participants may have differing expectancies regarding the likely expressions to be shown by the encoders as a function of the encoders sex and ethnicity. We therefore attempted to better elucidate the pattern of results in the present data set by using path analyses to model our findings.

Intensity Effects

As shown in Table 1 the intensity of the expressions had an influence on the ratings. Post-hoc tests showed different intensity effects for ratings of dominance and affiliation. Specifically, ratings of *affiliation* differed between neutral and weak expressions, whereas ratings for weak versus strong expressions did not differ significantly. In contrast, for *dominance*, ratings for strong expressions were generally different from ratings for weak expressions, but these latter did not differ from neutral. Thus, weak emotional expressions had a significant impact on affiliation ratings but not on dominance ratings.

Profile Analyses

As mentioned above, ratings of the neutral faces were employed as a baseline, so as not to confound the impact of idiosyncratic variations across stimulus person exemplars with the effects of ethnicity and sex.

TABLE 1

Analysis of Variance on Dominance and Affiliation Ratings as a Function of the Emotion Displayed, the Intensity of the Expression, as Well as the Sex and the Ethnicity of the Stimulus Person

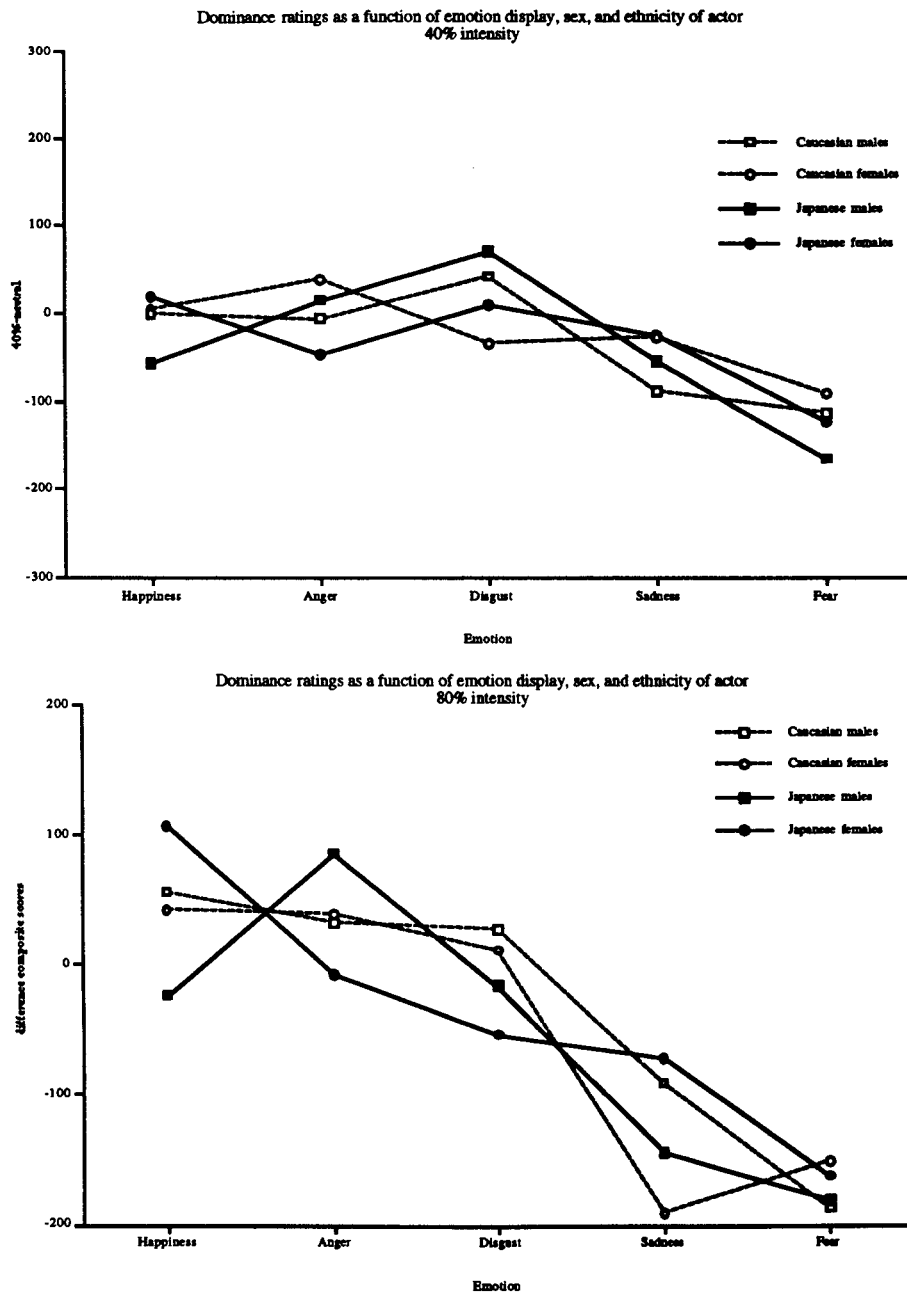| Source	df	Dominance			Affiliation		
		F	p	eta^2	F	p	eta^2
between subjects							
Ethnicity	1	10.96	.001	.07	1.31	.255	.01
Intensity (I)	2	11.24	.001	.14	0.38	.683	.01
within subjects							
Emotion (E)	3.56/3.30	121.81	.001	.47	279.63	.001	.67
E × Ethnicity	3.56/3.30	10.34	.001	.07	2.37	.064	.02
E × I	7.13/6.61	22.72	.001	.25	40.39	.001	.37
Sex of Actor (A)	1	11.47	.001	.08	19.16	.001	.12
A × Ethnicity	1	65.30	.001	.32	21.21	.001	.13
A × I × Ethnicity	2	2.68	n.s.	.04	14.70	.001	.18
E × A	3.64/3.89	23.43	.001	.14	6.78	.001	.05
E × A × Ethnicity	3.64/3.89	15.04	.001	.10	16.71	.001	.11
E × A × I	7.28/7.78	2.99	.004	.04	2.31	.020	.03
E × A × I × Ethnicity	7.28/7.78	3.80	.001	.05	6.48	.001	.09

Figure 1. Dominance ratings as a function of Sex and Ethnicity of the stimulus person as well as type and intensity of the emotion expression.

Affiliation ratings as a function of emotion display, sex, and ethnicity of actor
40% intensity

—□— Caucasian males
—○— Caucasian females
—■— Japanese males
—●— Japanese females

Happiness　Anger　Disgust　Sadness　Fear

Emotion

Affiliation ratings as a function of emotion display, sex, and ethnicity of actor
80% intensity

—□— Caucasian male
—○— Caucasian female
—■— Japanese male
—●— Japanese female

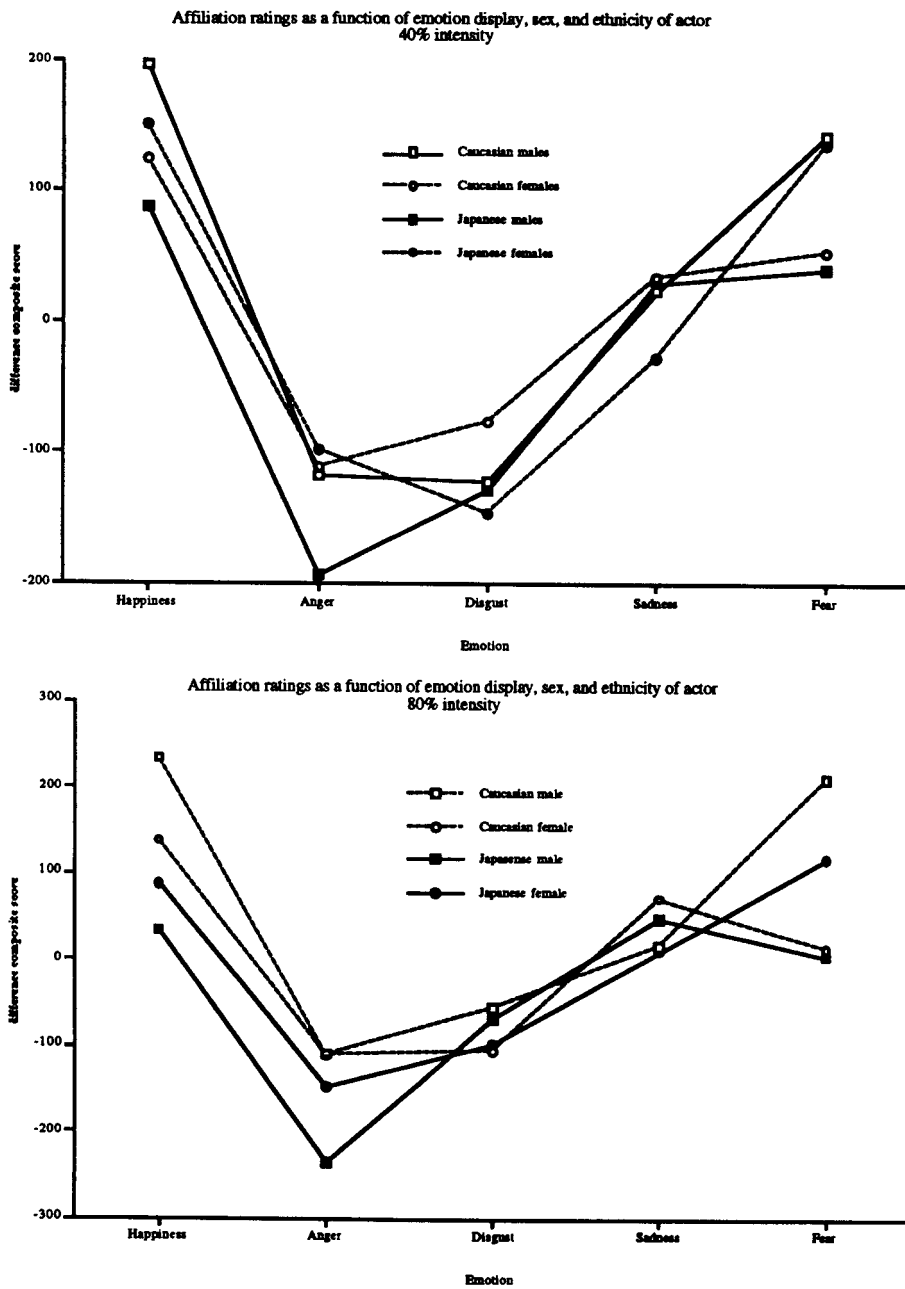Happiness　Anger　Disgust　Sadness　Fear

Emotion

Figure 2. Affiliation ratings as a function of Sex and Ethnicity of the stimulus person as well as type and intensity of the emotion expression.

Thus, the analyses were based on the difference scores shown in Figures 1 and 2 for levels of expression intensity. Table 2 shows the results of the profile analyses.

As Table 1 shows, the *initial* analysis of variance revealed main effects and interactions involving all four factors. However, the emotion display shown by the stimulus person had by far the largest effect. Consequently, the profiles for the five emotion displays were quite similar for all four groups. In general, stimulus persons were rated as most dominant as well as most affiliative when showing expressions of happiness (m = 67.73 and m = 205.08, for dominance and affiliation respectively). They were rated as least dominant when showing expressions of fear (m = −150.21) and

TABLE 2A

Results of Profile Analyses on Dominance and Affiliation Comparing Ratings for Male and Female Actors Across Emotions as a Function of Ethnicity of the Stimulus Person and Intensity of the Expression

| | Dominance ratings | | | | | |
| | Parallel | | | Coincident | | |
Actor	F	df	p	F	df	p
Weak expressions						
Caucasian	6.27	4,43	.001	1.07	1,46	.306
Japanese	5.69	4,43	.001	.07	1,46	.796
Strong expressions						
Caucasian	2.60	4,43	.050	1.20	1,46	.278
Japanese	10.30	4,43	.001	1.84	1,46	.182

| | Affiliation ratings | | | | | |
| | Parallel | | | Coincident | | |
Actor	F	df	p	F	df	p
Weak expressions						
Caucasian	2.26	4,43	.078	2.59	1,46	.114
Japanese	8.59	4,43	.001	6.38	1,46	.015
Strong expressions						
Caucasian	11.13	4,43	.001	23.06	1,46	.001
Japanese	10.16	4,43	.001	14.38	1,46	.001

TABLE 2B

Results of Profile Analyses on Dominance and Affiliation Comparing Ratings for Japanese and Caucasian Actors Across Emotions as a Function of Sex of the Stimulus Person and Intensity of the Expression

| | Dominance ratings | | | | | |
| | Parallel | | | Coincident | | |
Actor	F	df	p	F	df	p
Weak expressions						
Female	5.31	4,43	.001	.01	1,46	.920
Male	2.64	4,43	.047	17.58	1,46	.001
Strong expressions						
Female	6.39	4,43	.001	.63	1,46	.433
Male	13.28	4,43	.001	78.61	1,46	.001

| | Affiliation ratings | | | | | |
| | Parallel | | | Coincident | | |
Actor	F	df	p	F	df	p
Weak expressions						
Female	3.80	4,43	.010	.67	1,46	.419
Male	2.58	4,43	.050	.08	1,46	.773
Strong expressions						
Female	7.52	4,43	.001	.57	1,46	.452
Male	4.05	4,43	.007	2.88	1,46	.096

as least affiliative when showing expressions of anger and disgust (m = −125.29 and m = −150.93 respectively). Overall, these findings replicate those reported by Knudson (1996). Yet, ethnicity and sex of actor also had a clear influence on the participants' judgments. Specifically, Ethnicity and Sex of stimulus person interacted so that different, non parallel profiles were found for Caucasian and Japanese men and women. Specifically, larger sex differences in the attribution of behavioral intentions were found for Japanese expressors than for Caucasian expressions, and ethnic group differences were somewhat more pronounced for women than for men.

The results of these analyses are relatively complex. In order to attempt to simplify them, additional analyses were conducted. Specifically,

we employed path analyses to model the ratings and to elucidate how ethnicity and sex of actor impact on ratings of dominance and affiliation.

Path Analyses[2]

The findings reported above, suggest that perceptions of social dominance and affiliation are strongly influenced not only by the type of emotion displayed but also by ethnicity and sex of actor, as well as by the intensity of the expression. At the same time, it is possible that unexamined variables may be interacting with those we have manipulated here. Our earlier review of the literature suggests one of these, specifically, the expectations of the perceiver regarding the likelihood that the expressor will show a certain emotion display. That is, perceivers hold different expectations regarding the likelihood that a specific person (male or female, Caucasian or Japanese) will display strong and weak expressions of anger, fear, sadness, disgust, and happiness. Consequently, if observers consider, for example, an expression of weak happiness as typical for a women, they may not consider such an expression as informative regarding her affiliative intentions because such an expression would be considered to be more or less the expected "baseline" expression.

To assess to what degree this hypothesis can explain the present data we conducted path analyses. To reduce the number of variables, only two emotions were considered, happiness and anger. Happiness and anger were chosen because for these emotions clear gender stereotypes are known and the available literature (see above) makes clear predictions regarding their influence on dominance and affiliation ratings. Specifically, we predict that women are expected to be more likely to show happiness and less likely to show anger than are men. Further, based on the stereotype that Japanese are less expressive in general, we expected that Japanese would be rated as less likely to show either emotion. This stereotype, in conjunction with the physical intensity of the expression is expected to influence the intensity ratings for the expression by the observer, which in turn might be expected to influence ratings of dominance and affiliation.

For the purposes of the path analyses we included data that were collected in two previous studies using the same stimulus set. These studies assessed the *perceived emotional intensity* of the expressions shown by the actors. Further, we collected additional data regarding the *perceived likelihood* for members of the four social groups in question (male and female, Japanese and Caucasian) to show happiness and anger respectively. Participants in these studies were drawn from the same population as the partici-

pants in the present study, that is, undergraduate students at Dartmouth College, participating for extra course credit.

Perceived Intensity for Expressions of Anger and Happiness. These data were taken from one published study (Hess, Blairy, & Kleck, 1998) and one unpublished source. Specifically, Hess et al. (1998) collected ratings of the perceived intensity for a series of emotional expressions by Caucasian actors, including the expressions used for the present study. The data for the Japanese expressions were obtained from an unpublished study that employed an identical procedure with the identical number of participants.[3]

Perceived Likelihood. Data regarding the likelihood that a member of each of the four groups included in the present study would show anger and happiness displays in everyday life were obtained from 26 women and 21 men. The participants in this study rated the likelihood for expressing anger and happiness on 9-point scales, anchored with "not at all likely" and "very likely."[4] They completed the rating form as part of a more extensive questionnaire for an unrelated study.

One should note that the intensity rating data as well as the likelihood data were not obtained from the same participants as were the dominance and affiliation ratings. However, the basic unit of analysis for the following analyses are the expressions and not the participants, thus there is no concern regarding the dependence of the data. More importantly, with regard to the internal validity of the findings, all data were obtained from the same population. This is relevant as we argue that the expectations regarding the expressive behavior of members of different groups as well as their assessment are culturally shared.

Figure 3 shows the basic model that was assumed. According to this model, the dummy coded variables sex and ethnicity of the actor, together with their interaction term, predict the perceived likelihood for the actor to show particular expressions. Thus, women are perceived as more likely to show expressions of happiness and Japanese actors are perceived as less likely to show anger displays. The likelihood of the expression together with its rated intensity (which in turn depends on the physical intensity, strong vs. weak, of the display and its likelihood) are assumed to predict ratings of dominance and affiliation respectively. The analyses were done separately for happiness and anger displays.

Anger Displays. The structural equation modeling program AMOS 3.6 was employed to construct a path analytical model to predict dominance
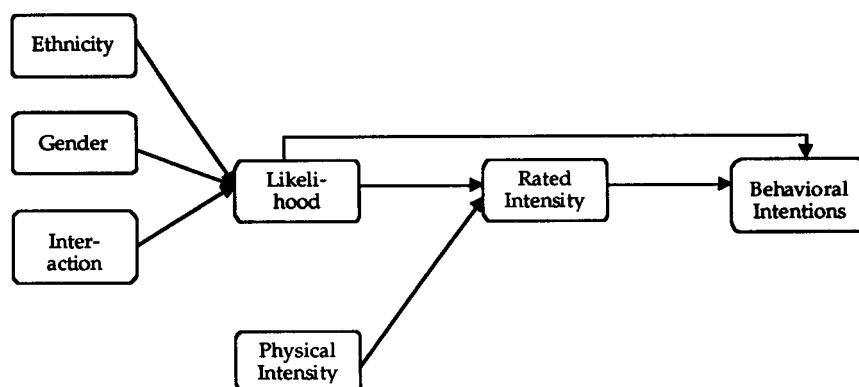
Figure 3. Basic model for dominance and affiliation ratings.

and affiliation ratings. For dominance ratings of anger expressions the expected relationships were largely found, however, only Sex ($\beta = -.32$) and Ethnicity ($\beta = .91$) predicted the likelihood of anger expressions. Thus, men and Caucasians were rated as more likely to display anger. Further, the likelihood of the anger display ($\beta = .75$) as well as the rated intensity of the expression ($\beta = .38$) predicted Dominance ratings, such that more likely expressions (that is, those by men and by Caucasian actors) were rated as more dominant and 80% expressions led to higher ratings of dominance than the 40% expressions. Rated intensity depended on physical intensity only ($\beta = .93$).

For the affiliation ratings of anger expressions, the likelihood of the expression again predicted the participants judgments ($\beta = .40$) but intensity did not. Also, in addition to the link mediated by likelihood, a strong direct path between the sex of the actor and affiliation was found ($\beta = .79$) indicating that women are generally rated as more affiliative.

Thus for anger expressions the rated likelihood that the expression will be shown by a member of a specific social group which in turn is determined by the sex and the ethnicity of the encoder, predicts both dominance and affiliation ratings.

Happiness Displays. The same analysis procedure was employed to explore dominance and affiliation ratings of happiness displays. Interestingly, a somewhat different pattern of results was observed for both types of ratings. Specifically, for happiness displays the perceived likelihood of the expressions did not mediate dominance and affiliation judgments. Rather, the ethnicity of the actor ($\beta = .38$ and $\beta = 15$ for domi-

nance and affiliation ratings respectively) as well as the Sex by ethnicity interaction ($\beta = -.38$ and $\beta = -.41$ for dominance and affiliation ratings respectively) directly influenced participants' ratings.—That is, happiness displays by Asian men and by Caucasian women were rated as more affiliative as well as more dominant. Further, expressions by Caucasians in general were rated as more dominant and as more affiliative. In addition, rated intensity predicted ratings of dominance ($\beta = .57$) as well as ratings of affiliation ($\beta = .54$) and was in turn predicted by the physical intensity of the display ($\beta = .86$).

In sum, the path analyses illustrate the influence of the sex and the ethnicity of the actor on observers' ratings of dominance and affiliation. This effect was, for the anger displays, mediated by the likelihood for the expression to be shown by members of a specific group. That this mediation was not found for happiness expressions might be due to the fact that the differences in the likelihood of happiness expressions were smaller, thus resulting in restricted variance.

General Discussion

Two interesting conclusions follow from these findings. First, while clear effects of both Sex and Ethnicity of stimulus person emerged, the overall pattern of attributions of affiliation and dominance depended upon the specific emotion displayed. This suggests that observers interpret the information regarding behavioral intentions provided by affect displays in similar ways regardless of the ethnic group membership or the sex of the expressor. Thus, at least as far as the attribution of behavioral intentions based on emotion displays is concerned, some generality across ethnicity and gender seems to be assumed by decoders. At the same time, it is clear that these factors will subtly modify perceivers' evaluations. That is, although a smile is a sign of affiliation regardless who shows it, the level of assumed affiliative intentions varies depending on whether the person who smiles is a man or a women or Japanese versus Caucasian.

Second, the path analyses provide evidence that dominance and affiliation ratings, based on expressions of happiness and anger, are mediated differently. Specifically, for anger expressions, dominance and affiliation ratings depend on the perceived likelihood that a member of a given social group will show anger as well as on the physical intensity of the anger expression. In contrast, for happiness both dominance and affiliation ratings are predicted directly by Ethnicity of the encoder and the ethnicity by Gender interaction as well as by the intensity of the expression.

The post-hoc tests show that although weak and strong expressions equally influence perceived affiliation, dominance ratings vary for strong versus weak expressions such that only fairly intense emotional expressions tend to affect dominance ratings. This may explain why Japanese expressors—who are expected to be less expressive overall—are also frequently rated as less dominant.

In sum, emotional facial expressions influence the perception of the dominant and affiliative behavioral intentions of the expressor. This influence is modulated by both the gender of the expressor and their ethnic group membership. For affiliation this influence is already present when subtle expressions are shown, whereas for dominance only individuals showing strong expressions are rated differently from individuals showing neutral expressions. Put another way, whereas a slight smile is a sign of affiliation, only a strong frown signals dominance.

Notes

1. Full details of the procedure for creating stimuli and printed images of them are available from the first author.
2. It is important to note that the unit of analysis for the path analyses are the expressions, the findings are based therefore on a rather low N. We want to stress that the findings presented in the following are not intended to be general models but only to describe in more detail the pattern of data found in the present study.
3. The raw data are available from the first author.
4. The raw data are available from the first author.

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