

You Never Think About My Feelings: Interpersonal Dominance as a Predictor of Emotion Decoding Accuracy

Sara K. Moeller, Elizabeth A. Ewing Lee, and Michael D. Robinson
North Dakota State University

Dominance and submission constitute fundamentally different social interaction strategies that may be enacted most effectively to the extent that the emotions of others are relatively ignored (dominance) versus noticed (submission). On the basis of such considerations, we hypothesized a systematic relationship between chronic tendencies toward high versus low levels of interpersonal dominance and emotion decoding accuracy in objective tasks. In two studies (total $N = 232$), interpersonally dominant individuals exhibited poorer levels of emotion recognition in response to audio and video clips (Study 1) and facial expressions of emotion (Study 2). The results provide a novel perspective on interpersonal dominance, suggest its strategic nature (Study 2), and are discussed in relation to Fiske's (1993) social-cognitive theory of power.

Keywords: dominance, submission, personality, power, cognition, emotion decoding

The interpersonal circumplex represents a major tool that can be used to understand broader interaction styles in everyday social life (Wiggins, 1980). Two fundamental dimensions have been identified. A horizontal dimension distinguishes individuals in terms of their tendencies toward warm versus cold relations with others, whereas a vertical dimension distinguishes individuals in terms of their tendencies toward dominant versus submissive relations with others (Carson, 1969; Leary, 1957). The interpersonal circumplex has proven immensely useful in understanding individual differences in personality traits (Wiggins, 1979), relationship behaviors (Leary, 1957), social interaction strategies (Wiggins, Trapnell, & Phillips, 1988), available social support (Gallo & Smith, 1999), and health-related risk factors (Smith, Glazer, Ruiz, & Gallo, 2004).

In recent years, the horizontal dimension of the interpersonal circumplex has received a considerable amount of attention in multiple literatures. The extent to which one is cold and antagonistic seems more problematic to interpersonal functioning than the extent to which one is either dominant or submissive (Moskowitz, 2010; Smith, Traupman, Uchino, & Berg, 2010). Indeed, interpersonal coldness and antagonism appears more relevant in understanding the dimensional basis of personality disorders (Widiger & Trull, 2007). In the emotion realm, too, it is more compelling to propose that interpersonal coldness, relative to interpersonal dominance or submission, should be relatively more problematic.

Such considerations aside, individuals do reliably differ in their tendencies toward dominance versus submission in their interper-

sonal relationships. We contend that there is a strategic implicit basis for such individual differences. To successfully enact interpersonal dominance, the individual must often place their own agentic goals ahead of the goals of others (Kipnis, 1976). On the other hand, the submissive person may view their goals as more dependent on dominant individuals (Gifford, 1991), leading to more compliant behaviors in daily interactions (Moskowitz, 2010). Such divergent interpersonal tendencies and strategies should, in turn, possess relevance in understanding person perception processes (Finkel & Rusbult, 2008). In two studies, we sought to bridge the personality literature concerned with individual differences in interpersonal dominance with the social cognition literature examining the effects of conferred power. We base our predictions primarily on Fiske's (1993) theory of power.

Fiske's Social Cognitive Theory of Power

Neuberg and Fiske (1987) amassed considerable evidence for the idea that there are two ways to perceive others (also see Gilbert & Malone, 1995; Trope, 1986). Person perceivers can pay attention to the unique displays of others—that is, their unique feelings and thoughts as individuals. Alternatively, person perceivers can disattend to such displays, instead favoring person perception processes of a much more heuristic, stereotyped kind. Although stereotypes per se are not relevant to our studies, the basic distinction between individuating and nonindividuating modes of person perception is relevant to our predictions.

Fiske (1993) proposed a theory of power in which she suggests that power corrupts in a specific way. Those placed in a position of power because of their occupation (e.g., management) or group membership (e.g., male) are thought to individuate individuals to a lesser extent. Fiske proposed a motivational basis for such effects. Individuation is potentially problematic among powerful individuals because doing so evokes too much sympathy for others and may interfere with the exercise of power. On the other hand, powerless individuals are well-served by individuating others because they view their interpersonal outcomes as more dependent

This article was published Online First April 25, 2011.

Sara K. Moeller, Elizabeth A. Ewing Lee, and Michael D. Robinson,
Department of Psychology, North Dakota State University.

We thank Rainer Banse for providing us with the stimulus materials used in Study 1.

Correspondence concerning this article should be addressed to Sara K. Moeller, Psychology Department, North Dakota State University 2765, PO box 6050, Fargo, ND 58108-6050. E-mail: sara.moeller@ndsu.edu

on powerful others and interaction partners in general (Fiske, 1993; Operario & Fiske, 1998). Fiske's theory of conferred power has received considerable support in a number of different studies (Fiske, 2001; Goodwin, Gubin, Fiske, & Yzerbyt, 2000; Operario & Fiske, 2001).

Such person perception processes have typically been examined in terms of judgments that indicate greater stereotyping or, to a lesser extent, poorer memory for information unique to person perception targets (Fiske, 2001; Neuberg & Fiske, 1987). Novel to the present studies is the idea that Fiske's theory should also possess relevance in understanding emotion decoding accuracy. In general terms, the emotional displays of others provide important clues to the current status of one's relationship (Finkel & Rusbult, 2008). By attending to and perceiving such cues, individuals may be in a better position to assess the other's attitudes (Hess, Kappas, & Scherer, 1988), determine whether social conflicts are imminent (Ekman, 1994), and adjust one's interactive behaviors accordingly (Salovey & Mayer, 1990). In some recent studies, higher levels of emotion decoding accuracy have predicted higher-quality relationships (Lundqvist & Öhman, 2005) and multiple other indicators of better social functioning (Mayer, Roberts, & Barsade, 2008). Thus, the present focus on emotion decoding accuracy can be considered within the context of contemporary views of emotional intelligence (Mayer et al., 2008).

Interpersonal Dominance as a Predictor of Emotion Decoding Accuracy

It cannot be assumed that interpersonally dominant individuals necessarily have higher levels of social power because of conferred status. Indeed, it is likely that many dominant individuals are low in conferred status, whether educationally, occupationally, or because of their ethnic background. However, there are sources of data to suggest that dominance and power may be enacted similarly. Both are associated with behaviors suggesting forcefulness such as more frequent speaking, a louder tone of voice, and making eye contact while speaking (Gifford, 1991; Keltner, Gruenfeld, & Anderson, 2003). In addition, research on human and nonhuman primates suggests that dominance and conferred status are likely to involve the same hormonal substrates—namely, higher levels of testosterone accompanied by lower levels of cortisol (Mazur, 2005; van Honk, Harmon-Jones, Morgan, & Schutter, 2010). Motivationally, too, there would seem to be parallels. Just as individuals high in conferred power are motivated to act in ways that reinforce it (Fiske, 2001), dominant individuals should be similarly motivated to gain and retain control in their interpersonal relationships (Moskowitz, 2010).

Accordingly, and while understanding that dominance and power could operate differently, it seemed to us that Fiske's (1993) theory of power might be generative in understanding individual differences along the dominance-submission dimension of the interpersonal circumplex. Of particular importance to the emotion realm, it was hypothesized that dominant individuals, relative to submissive individuals, would perform poorly in tasks requiring them to identify the emotions of others. Study 1 sought to provide initial support for this processing correlate of dominance-submission and in relation to dynamic emotional stimuli of both auditory and audio-visual types. It was predicted that dominant

(relative to submissive) individuals would exhibit lower levels of decoding accuracy on the basis of previous norms.

Study 2 predicted a similar personality difference but in the context of more carefully titrated displays of emotion. Study 2 also sought to disentangle abilities from motivation through the use of both degraded and less degraded displays of emotional faces. Following Fiske's (1993) theory, we hypothesized that dominance-linked inaccuracy would be somewhat particular to the context of less degraded stimuli, the decoding of which is thought to reflect controlled efforts to understand the emotions of others (Graham, Devinsky, & LaBar, 2007). Such interactive predictions are further described in the introduction to Study 2.

Study 1

Interaction partners, whether actual or potential, display emotions dynamically—that is, over the course of time (Buck, 1999). Accordingly, Study 1 presented participants with dynamic displays of emotion. Further, the emotional displays of others occur in relation to multiple channels, the most important of which are likely to involve tone of voice, bodily gestures, and facial expressions of emotion (Bänziger, Grandjean, & Scherer, 2009). In Study 1, we presented emotionally expressive stimuli in two blocks to gauge the generality of the proposed relations. The first block presented emotional expressions of an audio-only type, and the second block presented the same clips with all sources of emotional expression (audio, gestural, and facial) present. Inverse relations between interpersonal dominance and emotion decoding accuracy were hypothesized for both blocks.

Method

Participants and Procedures

One hundred ten undergraduates from North Dakota State University participated and were compensated with psychology course credit. Fifty-seven of them were females, and 105 of them were white. The participants were informed that they would complete a number of unrelated tasks and were then placed within one of six private rooms, each equipped with its own personal computer and headphones. The emotion decoding task was completed first to preclude the possibility that reflecting on one's personality tendencies could affect emotion decoding performance (Robinson & Neighbors, 2006). Subsequently, personality levels of interpersonal dominance were assessed as were the demographic variables of sex and race.

Individual Differences in Dominance-Submission

Individual differences in dominance versus submission were assessed in terms of 21 personality items selected from Goldberg et al.'s (2006) International Personality Item Pool. These items were closely modeled after historically reliable and valid scales, including the California Personality Inventory (Gough, 1987), Temperament and Character Inventory (Cloninger, Przybeck, Svrakic, & Wetzel, 1994), and HEXACO Personality Inventory (Lee & Ashton, 2004). Eleven items pertained to dominance (e.g., "I try to impose my will on others"), six items pertained to docility (e.g., "I let myself be used"), and four items pertained to depen-

dence (e.g., “I follow orders”). Participants were asked to indicate the extent to which (1 = very inaccurate; 5 = very accurate) all 21 personality items characterized them. To score dominance-submission in dimensional terms, ratings for the docility and dependence items were reverse-scored, and then an average score along the dominance-submission continuum was computed for each individual ($\alpha = .61$; $M = 2.98$, $SD = 0.35$).

Emotion Decoding Task

Study 1 presented participants with stimulus materials created and validated by Banse and Scherer (1996; Scherer, Banse, & Wallbott, 2001). In the creation of these stimuli, actors were instructed to visualize an event that gave rise to a particular emotion and to express the emotion while speaking a nonsense sentence (e.g., “Hat sundig pron you venzy”). Previous work using the clips has shown that judges from a large number of countries can identify the emotion expressed with better than chance accuracy (Banse & Scherer, 1996).

In specific terms, Banse and Scherer (1996) asked each of 3 actors to express 10 different emotions (anger, annoyance, anxiety, contempt, disgust, fear, intense fear, intense joy, joy, and sorrow: 30 total clips), with clips lasting approximately 3 seconds each. Banse and Scherer then created three versions of the clips, one of an audio-only type, one of a video-only type, and one combining audio and visual information. The audio-only and audio-visual clips were chosen for inclusion in the present study.

In addition, it was deemed best to present the audio-only clips first to assess decoding processes from the auditory channel without previous experience with its visual channel counterpart. Clips were presented in a randomized order, separately so for each participant and block. In addition, we regarded the distinction between fear and intense fear on the one hand and between joy and intense joy on the other hand as too subtle for present purposes. Thus, the fear clips were treated identically, as were the joy clips, and 8 rather than 10 response options were provided after each presented clip.

Clips were presented and responses were collected in an E-Prime program. Initial instructions informed participants that the sentences were not meaningful and they should instead focus their attention on trying to understand the emotion of the speaker rather than the message itself (Scherer et al., 2001). In the first block, a trial began with the words “Listen Now.” Subsequently, an audio clip was presented over headphones. Then, participants were asked “What was the emotion of the speaker?” Eight response boxes—labeled anger, annoyance, anxiety, contempt, disgust, fear, joy, and sorrow—were alphabetically ordered to facilitate response-mapping processes. Participants were told to label the emotion present by a mouse click within the relevant response box. After each response, there was a brief 250-ms blank delay before the next stimulus was presented. Procedures for the second block were identical except that the phrase “Watch Now” was displayed before each trial and an audio-visual clip was then presented. The E-Prime program collected both response and response-time data.

Results

Responses were coded in terms of their accuracy (0 = not accurate; 1 = accurate) and averaged separately for each individ-

ual and task. A General Linear Model (GLM) analysis then examined variations in decoding performance as a function of the within-subject variable of task type (audio-only vs. audio-visual) in combination with individual differences in interpersonal dominance, centered before the analysis (Aiken & West, 1991; Robinson, 2007). As one might expect, a main effect of Task Type was obtained, $F(1, 109) = 373.09$, $p < .0001$, partial $\eta^2 = .77$, such that it was easier to decode emotions when both audio and visual sources of information were provided (M accuracy = 61%) relative to audio-only information (M accuracy = 41%). Both tasks should be sensitive to individual differences, however, because performance for both tasks exceeded chance accuracy, $ps < .01$.

Of more importance, there was a main effect for Interpersonal Dominance, $F(2, 108) = 10.11$, $p < .01$, partial $\eta^2 = .09$, an effect size approximately in between a medium and large one (Cohen, Cohen, West, & Aiken, 2003). However, there was no Task Type \times Interpersonal Dominance interaction, $F < 1$, suggesting results were similar in the two decoding tasks. Indeed, follow-up analyses determined that the main effect for Interpersonal Dominance was significant in the audio-only block, $F(2, 108) = 6.02$, $p < .05$, partial $\eta^2 = .05$, and was also significant in audio-visual block, $F(2, 108) = 6.56$, $p < .05$, partial $\eta^2 = .06$, each considered separately. To determine the nature of these main effects, estimated accuracy means were calculated for each task as a function of low (-1 SD) versus high ($+1$ SD) levels of interpersonal dominance on the basis of regression output (Aiken & West, 1991). As shown in Figure 1, and as hypothesized, emotion decoding accuracy was lower at high, relative to low, levels of dominance.

Two additional sets of analyses were performed. The first GLM analysis added Displayed Emotion (an 8-level variable) to the Task Type \times Interpersonal Dominance design mentioned above. There was no three-way interaction in this analysis, $p > .20$. Thus, the poorer decoding performance of dominant individuals was a general one rather than one that exhibited emotion-specificity. Correlational analyses also determined that there was no relation between interpersonal dominance and the speed with which emotion identifications were made in either task condition, $ps > .40$. Thus, the poorer decoding performance of dominant individuals cannot

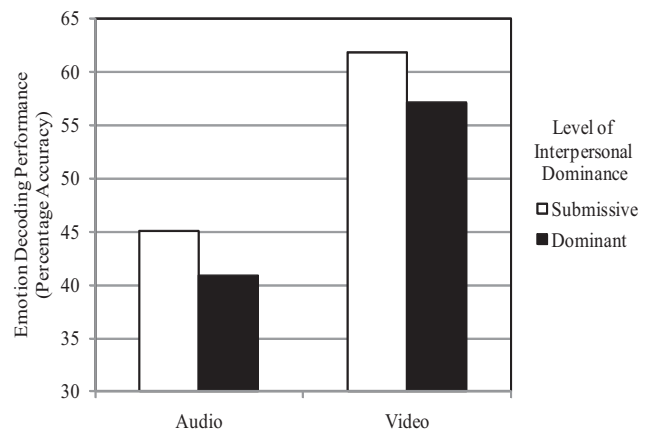


Figure 1. Interpersonal dominance as a predictor of emotion decoding performance, Study 1.

be understood in terms of hasty responding but rather reflects factors independent of possible speed–accuracy trade-offs.

Discussion

The most important conclusion from Study 1 is the most general one. Dominant individuals displayed emotion decoding deficits consistent with Fiske's (1993) theory of conferred status or power. This was true for all displayed emotions, for both audio-only and audio-visual conditions, and could not be ascribed to hasty response tendencies. We therefore suggest that personality differences in dominance versus submission appear to be profitably viewed in terms of greater (among submissive individuals) or lesser (among dominant individuals) attention to individuating emotional information. Such a view of how personality dominance operates is potentially quite generative, as will be further discussed later.

Recall that Banse and Scherer (1996) created audio, visual, and combined clips. Mean accuracy rates for each type of clip were not reported in that study or in the subsequent study of Scherer et al. (2001). When we conducted Study 1 of the present investigation, we reviewed the three types of clips for potential use in the study. Upon reviewing the clips, it seemed to us that the visual-only clips did not provide sufficient information for making emotion judgments, and we therefore did not include them. Subsequently, Bänziger et al. (2009) reported decoding accuracy rates for stimuli likely to overlap considerably with those used in Study 1. In point of fact, Bänziger et al. report that average levels of decoding accuracy for visual-only clips were comparable with average levels of decoding accuracy for auditory-only clips. Thus, our omission of the visual-only clips was intuitive, but inclusion of them would have been useful.

Both conditions of Study 1 included auditory emotional information; therefore, it is conceivable that the Study 1 effects were particular to auditory decoding. On the other hand, there was clear normative evidence for the idea that emotion decoding accuracy was higher in the audio-visual condition relative to the audio-only condition, yet individual differences in dominance versus submission predicted decoding accuracy in both conditions. Such considerations are relatively indirect, however, and it was therefore deemed important to use visual-only stimuli in Study 2. Therefore, to the extent that the results of Study 2 conceptually replicate those of Study 1, relations between interpersonal dominance and emotion decoding accuracy should not be viewed as modality-specific. As will be indicated next, Study 2 also sought to assess boundary conditions for dominance-decoding relations.

Study 2

Individual differences in emotion decoding are most frequently and perhaps best assessed in terms of decoding performance involving facial expressions of emotion, owing to the rich information provided by this expressive channel (Izard, 1997). In addition, however, decoding facial expressions of emotion can be done in two manners, one of an automatic-intuitive type and the other of a more controlled-strategic type (Mayer, Caruso, & Salovey, 2000). Degraded facial expressions of emotion are thought to favor the former set of decoding processes, and nondegraded facial expressions of emotion are thought to favor the latter set of decoding

processes (Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric, 2005).

Indeed, Graham et al. (2007) were able to show an important dissociation along these lines. A patient with damage to the amygdala (a subcortical structure linked to emotional processing: Whalen, 1998) exhibited impairments in emotion recognition only to the extent that the stimuli or task conditions precluded a more controlled, careful consideration of the emotional features present. Thus, amygdala damage is thought to impair emotion recognition performance of an automatic-intuitive type only (Graham et al., 2007).

Fiske's (1993) theory of conferred power is essentially of a reversed type. It is unlikely that conferred power undermines the functioning of primitive emotional processing brain regions such as the amygdala (LeDoux, 1996). Instead, it is far more likely that conferred power or status undermines the motivation to devote controlled processing resources to the task of individuating others (Fiske, 2001). To the extent that Fiske's theory is relevant to understanding individual differences, then, interpersonal dominance should better predict emotion decoding performance in relation to less degraded relative to more degraded stimuli.

Despite the fact that accuracy rates were higher for audio-visual clips than audio-only clips in Study 1, this was not a manipulation ideally suited to the interactive predictions of Study 2 for two reasons. All of the Study 1 stimuli were nondegraded in that they involved actors doing their best to convey emotions to the fullest extent possible given the channels involved (Banse & Scherer, 1996; Scherer et al., 2001). Also, the difference between audio-only and audio-visual clips involved the addition of heterogeneous sources of information (i.e., gestures, facial expressions) that do not map cleanly onto the degraded-less degraded continuum.

In Study 2, we developed a method better suited for testing our interactive predictions. A single source of emotional information was varied—namely, facial expressions of emotion. Using a computer software program, we were then able to vary the percentage of displayed emotion quantitatively and in a carefully titrated manner. Participants initially attempted to decode an emotional facial expression that was quite degraded (i.e., only 10% of the relevant emotion was present). Subsequent responses were obtained for percentages of displayed emotion that varied from 20% to 100%. We hypothesized that submissive individuals would exhibit better decoding accuracy than dominant individuals primarily in the context of fuller displays of emotion, consistent with the power-related theory of Fiske (2001).

Method

Participants and Procedures

One hundred twenty-two (79 female, 112 White) undergraduate students from North Dakota State University received course credit for their participation. The general procedures of Study 2 were identical to those of Study 1 in all important respects.

Interpersonal Dominance

Dominance-submission is one of the two primary axes of the interpersonal circumplex, and we sought to assess it in such terms in Study 2. Accordingly, we used the adjective markers for this

dimension validated by Wiggins et al. (1988). Participants rated the extent (1 = extremely inaccurate; 6 = extremely accurate) to which 16 markers of dominance (e.g., “dominant”) and submission (e.g., “meek”) characterized their behavior in general terms. The latter markers were reverse-scored, and chronic variations along the dominance-submission axis were then quantified by averaging across items ($\alpha = .90$; $M = 4.36$, $SD = 0.74$).

Emotion Decoding Task

To generate stimuli for the Study 2 task, we used FaceGen Modeler 3.3 software (Singular Inversions, 2008). This program generates lifelike facial avatars from the neck upward. Of particular importance, the software allows for the control of a number of features including race and sex. Given the ethnic background of our sample, it was deemed best to use white avatars. In addition, to guard against potential inferences based on stimulus sex, avatars were constrained to be sex-ambiguous (50% male and 50% female). All avatars were bald of hair to further preclude inferences based on stimulus race and/or sex.

We first generated hundreds of avatars and chose 10 of them on the basis of their most life-like appearance. We then created six versions of each avatar, each of which displayed only one basic emotion (anger, disgust, fear, happiness, sadness, or surprise), with the other emotions displayed at 0%. Finally, 10 versions of each avatar/emotion combination were created such that the percentage of displayed emotion varied from 10% to 100% by 10% intervals. In total, then, 600 facial images were created (10 avatars \times 6 emotions \times 10 emotion percentages). Figure 2 presents percentage variations in displayed anger for one of the avatars used in the study.

The avatars were presented as stimuli in an E-Prime program. It randomly assigned avatar/emotion combinations to individual trials, with the following constraint. For each such combination, the most degraded image (i.e., 10%) was first displayed, the next most degraded image (i.e., 20%) was next displayed, and so on (up to 100%). By use of such procedures, we could assess early decoding

performance in a manner uncontaminated by decoding performance based on fuller displays of emotion, a design feature important to our hypotheses.

Participants were correctly informed that every presented facial expression displayed an emotion, even if subtly so. They were asked to categorize each of the 600 images in terms of whether the emotion involved anger, disgust, fear, happiness, sadness, or surprise. They did so using the s, d, f, j, k, or l keys of the keyboard. Response-mappings were varied randomly across participants but were consistent across all trials for any given participant. Regardless of which response-mappings were assigned to the participant (e.g., pressing the “s” key if the expression was one of fear), such mappings were continuously displayed on the computer screen such that it was always very clear which response should be made for which displayed emotion.

Participants were given 2000 ms to respond to each of the 600 stimuli. Nonresponses were rare (3.25% of the trials), and incorrect responses (e.g., labeling a sadness expression in terms of fear) were quite a bit more frequent. In either case, the trial was given a 0 score because it reflected a failure of emotion recognition. Accurate responses were given a score of 1.

Results

Multilevel modeling (MLM) procedures were used to analyze the data. Such procedures were optimal in the present context because levels of displayed emotion (from 10% to 100%) represented a linear quantity that was nested within individuals (Raudenbush & Bryk, 2002). In addition, because response accuracy was a dichotomous outcome variable, the nonlinear Bernoulli distribution was used (Raudenbush, Bryk, & Congdon, 2008).

On the basis of initial MLM tests, we first established that there were significant individual differences in decoding performance across levels of degradation ($\chi^2 = 970.54$, $p < .01$). We then entered level of displayed emotion as a predictor and found that there were significant individual variations in the extent to which decoding performance improved as a function of higher-quality

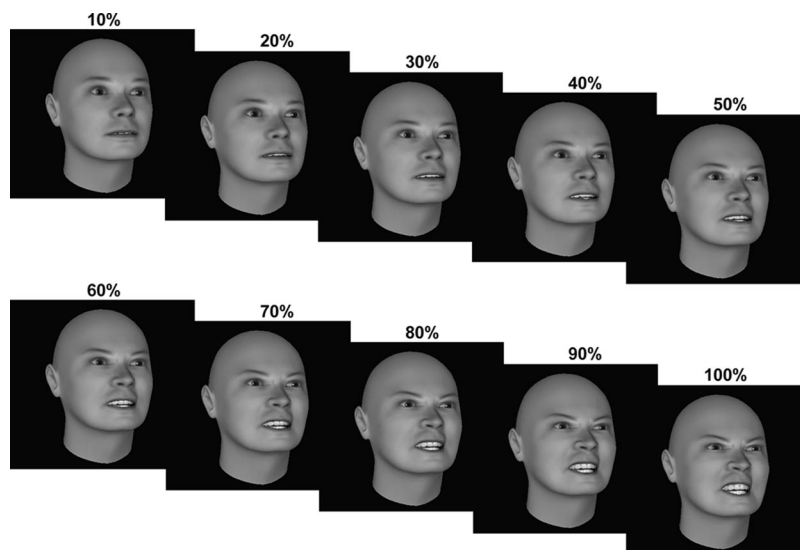


Figure 2. Example anger avatar by emotion percentage, Study 2.

expressive information ($\chi^2 = 323.30, p < .01$). There was thus a sufficient reason for thinking that individual differences may be important in predicting decoding performance in the carefully titrated task of Study 2.

Accordingly, dispositional levels of interpersonal dominance-submission (standardized before the analysis) were then entered as a level 2 predictor in an MLM analysis. As shown in Table 1, higher levels of displayed emotion were predictive of higher levels of decoding accuracy ($r = .98, p < .01$). In addition, interpersonal dominance predicted decoding accuracy at the intercept (55% displayed emotion; $r = -0.20, p < .05$), conceptually replicating the main effects observed in Study 1. Finally, as hypothesized, there was a significant cross-level interaction such that interpersonal dominance interacted with levels of displayed emotion to predict decoding performance ($r = -0.33, p < .01$). This cross-level interaction is graphically displayed in Figure 3. The pattern shown there suggests that interpersonal dominance was a predictor of decoding accuracy primarily in the context of less degraded facial expressions.

Simple slopes analyses (Preacher, Curran, & Bauer, 2006), for each level of displayed emotion, were then conducted. In the context of especially degraded stimuli, interpersonal dominance was nonpredictive of decoding performance (10%, 20%, 30%, and 40%: $ps > .10$). In the 50% expressive condition, submissive individuals made emotional inferences that were marginally more accurate, $p < .10$. In the remaining conditions, which presented higher-quality emotional information, interpersonally submissive individuals outperformed dominant individuals (60%, 70%, 80%, 90%, and 100%: $ps < .05$). Thus, the performance of interpersonally dominant individuals benefited to a lesser extent from higher levels of expressive information.

A GLM analysis was then conducted in which emotion type was treated as a six-level within-subject predictor (averaged across levels of displayed emotion for this analysis), and interpersonal dominance was entered as a continuous, centered predictor (Aiken & West, 1991; Robinson, 2007). The main effect for Interpersonal Dominance was significant, $F(2, 120) = 4.64, p < .05$, partial $\eta^2 = .04$ (a medium effect size), with submissive individuals outperforming their dominant counterparts. On the other hand, there was no Emotion Type \times Interpersonal Dominance interaction, $F(5, 600) = 1.29, p > .20$. As in Study 1, therefore, the emotion decoding deficits of dominant individuals were general in nature rather than emotion-specific.

Table 1
Multi-Level Model Results for the Facial Emotion Labeling Task, Study 2

	Coefficient	T ratio	Odds ratio	r
Level 1 intercept				
Intercept, B_{00}	-0.351825	-15.859	0.703403	-0.83**
Dominance, B_{01}	-0.061391	-2.231	0.940455	-0.20*
Level 1 slope				
Intercept, B_{10}	0.022181	49.84	1.022429	0.98**
Dominance, B_{11}	-0.002175	-3.829	0.997827	-0.33**

Note. $df = 120$.

* $p < .05$. ** $p < .01$.

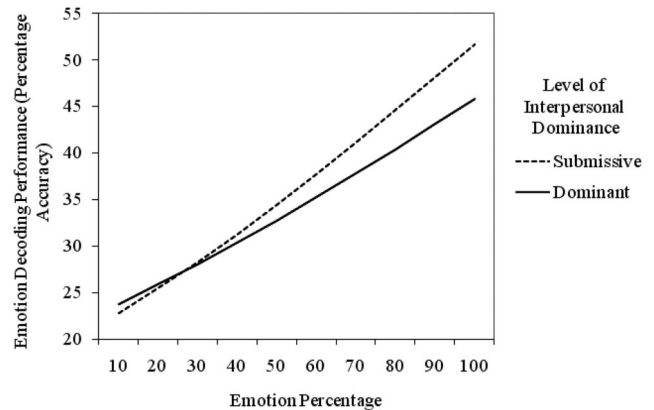


Figure 3. Interpersonal dominance and percentage of displayed emotion as predictors of emotion decoding performance, Study 2.

Discussion

Study 2 conceptually replicated the results of Study 1 but also extended them. In Study 2, facial expressions of emotion were presented in the absence of other auditory or gestural emotional cues. Because submissive individuals exhibited better decoding accuracy in Study 2 as well as in Study 1, the results support the idea of a general relationship between variations in personality dominance and emotion decoding accuracy independent of the particular emotional cues manipulated. An additional goal of Study 2 was to contrast automatic-intuitive emotion decoding abilities with controlled-strategic processes in emotion decoding (Graham et al., 2007), as is possible through the use of degraded versus less degraded perceptual stimuli (Niedenthal et al., 2005). The results of Study 2 support the idea that interpersonally dominant individuals are not impaired in their intuitive emotion recognition abilities. Rather, they appear to take less advantage of higher-quality emotional signals when inferring the emotional states of others, a pattern of findings consistent with Fiske's (1993, 2001) theory of conferred status or power.

General Discussion

Interpersonally dominant (vs. submissive) individuals exhibited lesser sensitivity to emotional cues, whether on the basis of auditory information (Study 1), multichannel information (Study 1), or facial expressions (Study 2). Such results were shown to be robust across different emotions (both studies) and seem to be reliant on strategic rather than intuitive emotion decoding processes (Study 2). We therefore suggest that the present results offer novel evidence for the idea that interpersonally dominant individuals are less attuned to the emotional states of potential interaction partners. The implications of these findings are discussed.

Implications for the Social Psychology of Power

Our predictions were based on Fiske's (1993) theory of the psychological effects of power. She and her colleagues have amassed considerable evidence for the idea that social roles that confer power (e.g., being a supervisor), relative to social roles that lack power (e.g., being a supervisee), result in poorer memory for

individuating information and greater stereotyping (for a more recent review, see Fiske, 2001). Other social psychological theories of power emphasize additional consequences such as insensitivity to contextual sources of information (Guinote, 2007) and strong approach-related tendencies (Keltner et al., 2003). Although little work has attempted to link power to emotion perception (for one exception, see Galinsky, Magee, Inesi, & Gruenfeld, 2006), the present results suggest that this direction of research may be fruitful.

Indeed, there are likely to be important predictors of emotion decoding performance that reflect interpersonal motivations to a greater extent than they reflect abilities or manipulations of power or status (Fiske, 2001). For example, van Honk and Schutter (2007) found that an acute administration of testosterone, a hormone linked to dominant behavior (Archer, 2006), resulted in lesser decoding accuracy for some emotional displays, a result that must be interpreted in terms of transitory motivational factors rather than abilities. Related results have been reported by Hall, Stanton, and Schultheiss (2010). In sum, we suggest that performance in emotion decoding tasks can be used, perhaps more directly than memory paradigms or stereotyping, to understand the extent to which people are motivated to individuate others.

Implications for Understanding Interpersonal Dominance

Dispositional tendencies toward interpersonal dominance versus submission are pronounced (Wiggins, 1979), predict a number of nonverbal behaviors (Gifford, 1991), and also predict relevant behaviors in daily life (Moskowitz, 2010). Why individuals differ along this dimension of interpersonal functioning has been more speculative from a personality-processing perspective. The present analysis is important in this theoretical context. By attending to the emotional cues of others, interpersonally submissive individuals should be better able to adjust their behavior to the needs and wishes of others, but possibly at a cost to their own self-interest (Bornstein, 1992). By disattending to the emotional cues of others, on the other hand, interpersonally dominant individuals should be more successful in pursuing their own goals, narrowly considered (Hogan, Raskin, & Fazzini, 1990).

Such strategic factors are likely important to understanding interpersonal functioning (Finkel & Rusbult, 2008) yet have largely been neglected in the emotional intelligence literature. This is an unfortunate omission. For example, narcissistic individuals are generally of higher intelligence (Paulhus & Williams, 2002), and they are socially intelligent in initial encounters (Paulhus, 1998). Nevertheless, their persistent self-interest (Paulhus, 1998) and willingness to use others for their own ends (Campbell, Foster, & Finkel, 2002) suggests a primarily motivational tendency to disregard others' emotions rather than a basic inability in understanding such emotions (Paulhus & John, 1998).

Additional Considerations and Future Directions

We generally interpreted our findings in motivational terms, following Fiske's (1993) theory of interpersonal power. Dominant individuals should be motivated to disattend to the emotional displays of others because doing so better supports the self's agentic goals. Submissive individuals, on the other hand, should be

motivated to attend to the emotional displays of others because they perceive themselves to be more dependent on others. Motivations are malleable, however, and thus it should be possible to eliminate the personality differences observed in our studies. In potential support of this idea, Goodwin, Operario, and Fiske (1998) found that priming egalitarian values resulted in reduced stereotyping and the greater individuation of others. By analogy, providing external incentives for decoding performance may eliminate the personality differences observed in the present studies.

In addition to the dominance-submission dimension, the circumplex also characterizes personality differences in terms of warmth versus coldness. There are reasons for thinking that this dimension too should be predictive of emotion decoding performance. An important facet of warmth is empathy, and many investigators have assumed that more empathetic individuals should be better able to read the emotional displays of others (e.g., Graziano, Habashi, Sheese, & Tobin, 2007; Ponterotto, Gretchen, Utsey, Rieger, & Austin, 2002). This direction of research can be encouraged in relation to the objective tasks used here. In any case, it is likely that decoding accuracy will additively vary by the dominance-submission and warm-cold dimensions of the circumplex. This idea is not problematic for our findings, which assessed individual differences in dominance-submission independently of the warm-cold dimension. However, such considerations do suggest that cold-dominant individuals—for example, as assessed by traits like narcissism (Campbell et al., 2002)—may exhibit particularly poor emotion decoding.

In the introduction, we recognized that dominance and power are different variables, the first a personality variable and the second defined in social-situational terms. It is therefore quite possible for an individual to be dominant but low in interpersonal power (e.g., a freshman congressman). From this perspective, the present results suggest that personality dominance is associated with emotion decoding deficits in a manner potentially independent of conferred power or status. Further, on the basis of our findings, we suggest that social-cognitive paradigms shown to be affected by manipulations of power (Fiske, 2001; Guinote, 2007; Keltner et al., 2003) are likely to provide important insights into personality dominance and submission as well. Finally, manipulations of power may be more consequential among dominant relative to submissive individuals because the latter individuals should be more motivated to exercise power according to multiple theories (Plutchik & Conte, 1997).

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.
- Archer, J. (2006). Testosterone and human aggression: An evaluation of the challenge hypothesis. *Neuroscience and Biobehavioral Reviews*, *30*, 319–345.
- Banse, R., & Scherer, K. R. (1996). Acoustic profiles in vocal emotion expression. *Journal of Personality and Social Psychology*, *70*, 614–636.
- Bänziger, T., Grandjean, D., & Scherer, K. R. (2009). Emotion recognition from expressions in face, voice, and body: The Multimodal Emotion Recognition Test (MERT). *Emotion*, *9*, 691–704.
- Bornstein, R. F. (1992). The dependent personality: Developmental, social, and clinical perspectives. *Psychological Bulletin*, *112*, 3–23.
- Buck, R. (1999). The biological affects: A typology. *Psychological Review*, *106*, 301–336.

- Campbell, W. K., Foster, C. A., & Finkel, E. J. (2002). Does self-love lead to love for others?: A story of narcissistic game playing. *Journal of Personality and Social Psychology, 83*, 340–354.
- Carson, R. C. (1969). *Interaction concepts in personality*. Chicago: Aldine.
- Cloninger, C. R., Przybeck, T. R., Svrakic, D. M., & Wetzel, R. D. (1994). *The Temperament and Character Inventory (TCI): A guide to its development and use*. St Louis: Washington University, Center for Psychobiology of Personality.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Erlbaum Publishers.
- Ekman, P. (1994). Strong evidence for universals in facial expressions: A reply to Russell's mistaken critique. *Psychological Bulletin, 115*, 268–287.
- Finkel, E. J., & Rusbult, C. E. (2008). Prorelationship motivation: An interdependence theory analysis of situations with conflicting interests. In: J. Y. Shah & W. L. Gardner (Eds.), *Handbook of motivation science* (pp. 547–560). New York: Guilford Press.
- Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist, 48*, 621–628.
- Fiske, S. T. (2001). Effects of power on bias: Power explains and maintains individual, group, and societal disparities. In: A. Y. Lee-Chai & J. A. Bargh (Eds.), *The use and abuse of power: Multiple perspectives on the causes of corruption* (pp. 181–193). New York: Psychology Press.
- Galinsky, A. D., Magee, J. C., Inesi, M. E., & Gruenfeld, D. H. (2006). Power and perspectives not taken. *Psychological Science, 17*, 1068–1074.
- Gallo, L. C., & Smith, T. W. (1999). Patterns of hostility and social support: Conceptualizing psychosocial risk factors as characteristics of the person and the environment. *Journal of Research in Personality, 33*, 281–310.
- Gifford, R. (1991). Mapping nonverbal behavior on the interpersonal circle. *Journal of Personality and Social Psychology, 61*, 279–288.
- Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin, 117*, 21–38.
- Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. G. (2006). The International Personality Item Pool and the future of public-domain personality measures. *Journal of Research in Personality, 40*, 84–96.
- Goodwin, S. A., Gubin, A., Fiske, S. T., & Yzerbyt, V. (2000). Power can bias impression formation: Stereotyping subordinates by default and by design. *Group Processes and Intergroup Relations, 3*, 227–256.
- Goodwin, S. A., Operario, D., & Fiske, S. T. (1998). Situational power and interpersonal dominance facilitate bias and inequity. *Journal of Social Issues, 54*, 677–699.
- Gough, H. G. (1987). *CPI manual* (2nd ed.). Palo Alto, CA: Consulting Psychologists Press.
- Graham, R., Devinsky, O., & LaBar, K. S. (2007). Quantifying deficits in the perception of fear and anger in morphed facial expressions after bilateral amygdala damage. *Neuropsychologia, 45*, 42–54.
- Graziano, W. G., Habashi, M. M., Sheese, B. E., & Tobin, R. M. (2007). Agreeableness, empathy, and helping: A person x situation perspective. *Journal of Personality and Social Psychology, 93*, 583–599.
- Guinote, A. (2007). Power affects basic cognition: Increased attentional inhibition and flexibility. *Journal of Experimental Social Psychology, 43*, 685–697.
- Hall, J. L., Stanton, S. J., & Schultheiss, O. C. (2010). Biopsychological and neural processes of implicit motivation. In: O. C. Schultheiss & J. C. Brunstein (Eds.), *Implicit motives* (pp. 279–307). New York: Oxford University Press.
- Hess, U., Kappas, A., & Scherer, K. R. (1988). Multichannel communication of emotion: Synthetic signal production. In: K. R. Scherer (Ed.), *Facets of emotion: Recent research* (pp. 161–182). Hillsdale, NJ: Erlbaum.
- Hogan, R., Raskin, R., & Fazzini, D. (1990). The dark side of charisma. In: K. E. Clark & M. B. Clark (Eds.), *Measures of leadership* (pp. 343–354). West Orange, NJ: Leadership Library of America.
- Izard, C. E. (1997). Emotions and facial expressions: A perspective from Differential Emotions Theory. In: J. A. Russell & J. M. Fernández-Dols (Eds.), *The psychology of facial expression* (pp. 57–77). New York: Cambridge University Press.
- Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review, 110*, 265–284.
- Kipnis, D. (1976). *The powerholders*. Chicago: University of Chicago Press.
- Leary, T. (1957). *Interpersonal diagnosis of personality*. New York: Ronald.
- LeDoux, J. (1996). *The emotional brain*. New York: Simon & Schuster.
- Lee, K., & Ashton, M. C. (2004). Psychometric properties of the HEXACO personality inventory. *Multivariate Behavioral Research, 39*, 329–358.
- Lundqvist, D., & Öhman, A. (2005). Caught by the evil eye: Nonconscious information processing, emotion, and attention to facial stimuli. In: L. F. Feldman, P. M. Niedenthal, & P. Winkielman (Eds.), *Emotion and consciousness* (pp. 97–122). New York: Guilford Press.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (2000). Emotional intelligence meets traditional standards for an intelligence. *Intelligence, 27*, 267–298.
- Mayer, J. D., Roberts, R. R., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology, 59*, 507–536.
- Mazur, A. (2005). *Biosociology of dominance and deference*. Lanham, MD: Rowman & Littlefield.
- Moskowitz, D. S. (2010). Quarrelsomeness in daily life. *Journal of Personality, 78*, 39–66.
- Neuberg, S. L., & Fiske, S. T. (1987). Motivation influences on impression formation: Outcome dependency, accuracy-driven attention, and individuating processes. *Journal of Personality and Social Psychology, 53*, 431–444.
- Niedenthal, P. M., Barsalou, L. W., Winkielman, P., Krauth-Gruber, S., & Ric, F. (2005). Embodiment in attitudes, social perception, and emotion. *Personality and Social Psychology Review, 9*, 184–211.
- Operario, D., & Fiske, S. T. (1998). Racism equals power plus prejudice: A social psychological equation for racial oppression. In: J. L. Eberhardt & S. T. Fiske (Eds.), *Confronting racism: The problem and the response* (pp. 33–53). Thousand Oaks, CA: Sage.
- Operario, D., & Fiske, S. T. (2001). Effects of trait dominance on powerholders' judgements of subordinates. *Social Cognition, 19*, 161–180.
- Paulhus, D. L. (1998). Interpersonal and intrapsychic adaptiveness of trait self-enhancement: A mixed blessing? *Journal of Personality and Social Psychology, 74*, 1197–1208.
- Paulhus, D. L., & John, O. P. (1998). Egoistic and moralistic biases in self-perception: The interplay of self-deceptive styles with basic traits and motives. *Journal of Personality, 66*, 1025–1060.
- Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism and psychopathy. *Journal of Research in Personality, 36*, 556–563.
- Plutchik, R., & Conte, H. R. (1997). *Circumplex models of personality and emotions*. Washington, DC: American Psychological Association.
- Ponterotto, J. G., Gretchen, D., Utsey, S. O., Rieger, B. P., & Austin, R. (2002). A revision of the Multicultural Counseling Awareness Scale. *Journal of Multicultural Counseling and Development, 30*, 153–180.
- Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interactions in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of Educational and Behavioral Statistics, 31*, 437–448.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.
- Raudenbush, S. W., Bryk, A. S., & Congdon, R. T. (2008). *HLM 6.06:*

- Hierarchical linear and nonlinear modeling*. Chicago: Scientific Software International.
- Robinson, M. D. (2007). Lives lived in milliseconds: Using cognitive methods in personality research. In: R. W. Robins, R. C. Fraley, & E. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 345–359). New York: Guilford Press.
- Robinson, M. D., & Neighbors, C. (2006). Catching the mind in action: Implicit methods in personality research and assessment. In: M. Eid & E. Diener (Eds.), *Handbook of multimethod measurement in psychology* (pp. 115–125). Washington, DC: American Psychological Association.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality, 9*, 185–211.
- Scherer, K. R., Banse, R., & Wallbott, H. G. (2001). Emotion inferences from vocal expression correlate across languages and cultures. *Journal of Cross-Cultural Psychology, 32*, 76–92.
- Singular Inversions. (2008). *FaceGen modeller* (Version 3.3) [computer software]. Toronto, ON: Singular Inversions.
- Smith, T. W., Glazer, K., Ruiz, J. M., & Gallo, L. C. (2004). Hostility, anger, aggressiveness, and Coronary Heart Disease: An interpersonal perspective on personality, emotion, and health. *Journal of Personality, 72*, 1217–1270.
- Smith, T. W., Traupman, E. K., Uchino, B. N., & Berg, C. A. (2010). Interpersonal circumplex descriptions of psychosocial risk factors for physical illness: Application to hostility, neuroticism, and marital adjustment. *Journal of Personality, 78*, 1011–1036.
- Trope, Y. (1986). Identification and inferential processes in dispositional attribution. *Psychological Review, 93*, 239–257.
- van Honk, J., Harmon-Jones, E., Morgan, B. E., & Schutter, D. (2010). Socially explosive minds: The triple imbalance hypothesis of reactive aggression. *Journal of Personality, 78*, 67–94.
- van Honk, J., & Schutter, D. (2007). Testosterone reduces conscious detection of signals serving social correction: Implications for antisocial behavior. *Psychological Science, 18*, 663–667.
- Whalen, P. J. (1998). Fear, vigilance, and ambiguity: Initial neuroimaging studies of the human amygdale. *Current Directions in Psychological Science, 7*, 177–188.
- Widiger, T. A., & Trull, T. J. (2007). Plate tectonics in the classification of personality disorder: Shifting to a dimensional model. *American Psychologist, 62*, 71–83.
- Wiggins, J. S. (1979). A psychological taxonomy of trait-descriptive terms: The interpersonal domain. *Journal of Personality and Social Psychology, 37*, 395–412.
- Wiggins, J. S. (1980). Circumplex models of interpersonal behavior. In: L. Wheeler (Ed.), *Review of personality and social behavior* (pp. 265–293). Beverly Hills, CA: Sage.
- Wiggins, J. S., Trapnell, P., & Phillips, N. (1988). Psychometric and geometric characteristics of the revised Interpersonal Adjectives Scales (IAS-R). *Multivariate Behavioral Research, 23*, 517–530.

Received April 4, 2010

Revision received December 9, 2010

Accepted December 16, 2010 ■

Correction to Debruille, Brodeur, and Hess (2011)

In the article, “Assessing the Way People Look to Judge their Intentions,” by J. Bruno Debruille, Mathieu B. Brodeur, and Ursula Hess (*Emotion*, Vol. 11, No. 3, pp. 533–543), Figure 1, which should have been printed in color, was inadvertently printed in black and white. The online version has been corrected.

DOI: 10.1037/a0024807