



Published in final edited form as:

*Group Process Intergroup Relat.* 2009 March ; 12(2): . doi:10.1177/1368430208101053.

## Social Structure Shapes Cultural Stereotypes and Emotions: A Causal Test of the Stereotype Content Model

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### Abstract

The stereotype content model (SCM) posits that social structure predicts specific cultural stereotypes and associated emotional prejudices. No prior evidence at a societal level has manipulated both structural predictors and measured both stereotypes and prejudices. In the present study, participants ( $n = 120$ ) responded to an immigration scenario depicting a high- or low-status group, competitive or not competitive, and rated their likely stereotype (on warmth and competence) and elicited emotional prejudices (admiration, contempt, envy, and pity). Seven of eight specific predictions are fully confirmed, supporting the SCM's predicted causality for social structural effects on cultural stereotypes and emotional prejudices.

### Keywords

competence; competition; emotions; status; stereotypes; warmth

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Theorists have long noted that social structural relationships among groups are responsible for observed patterns of stereotypes, prejudice, and discrimination (Allport, 1954; Sherif, Harvey, White, Hood, & Sherif, 1961). Two social structural variables in particular, perceived group status and competition, can form the foundation for ingroup members' responses to outgroup members at a societal level. According to the Stereotype Content Model (SCM; Cuddy, Fiske, & Glick, 2007; Fiske, Cuddy, & Glick, 2007; Fiske, Cuddy, Glick, & Xu, 2002), perceived intergroup competition lowers groups' stereotypic warmth, while perceived group status causes their stereotypic competence. Furthermore, systematic combinations of warmth and competence predict affective reactions to members of outgroups defined by those dimensions (Cuddy et al., 2007; Fiske et al., 2002)

The influences of social structure on subsequent stereotypes and emotions are presumed to be causal in nature, but the assumption of causality has yet to be tested. A number of studies have explored relationships between the three sets of variables, though for the most part the relationships have been tested correlationally (see Figure 1). Two experimental studies (Cuddy et al., 2007) confirmed causal relationships between stereotypes, emotions, and behaviors. However, the social-structural hypothesis that relative status and interdependence determine the content of stereotypes and emotions remains untested. The present research aims to fill that gap.

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Status and competition consistently correlate in the expected direction with competence and warmth stereotypes, as well as with specific emotions and behaviors (Cuddy et al., 2007; Eckes, 2002; Fiske, Xu, Cuddy, & Glick, 1999; Fiske et al., 2002), even cross-culturally (Cuddy et al., 2009). Adopting an experimental approach to test the causal link between social structure and stereotypes is necessary. Theoretically, it is important to verify that a group's competitive tendencies drive perceptions of warmth (or lack thereof). It is equally important to verify that a group's actual status in relation to other groups causes perceptions of competence and drives emotional reactions. Status and competition might catalyze group bias for a number of reasons. By taking into account structural relationships between groups (i.e. perceived competition–cooperation and group status differential), a target's group membership provides the information necessary to quickly answer two questions that help guide interaction. First, perceivers need to know if a social entity intends to help or harm, and, second, if the entity can carry out its intent. If one assumes that social perception operates in the service of interaction goals (Fiske, 1992), then it follows that understanding an outgroup's intentions and capabilities of carrying out its intentions will be a primary motive in perceiving social entities. The warmth and competence dimensions appear to be universal and fundamental features of social perception (Cuddy, Fiske, & Glick, 2008; Fiske et al., 2007).

Competition answers the question of intent. Competition pits the desired resources of one social group against the other, and in order to compete, one must intend to maximize one's resources over the others. Perceiving a competitor (or a competing group) and knowing their potentially conflicting goals aids the evaluation of a group's intentions as warm or not warm, in order to recognize a potential threat to resources (Fiske, 1993). Knowing that a group intends to compete for resources suggests that group members have negative intentions toward others (cold, unfriendly, and untrustworthy), while knowing that a group intends to cooperate suggests positive intentions toward others (warmth, friendliness, and trustworthiness).

Status answers the question of capability. Status indicates an ability to derive resources from others. Groups with high status typically have high power as well, indicating the ability to control and provide resources. Both status and power, however, are defined by their abilities to regulate resources, and therefore recognition of status is inherently linked to perceived competence (Fiske, 1993). Knowing that a group not only intends to derive resources but has the ability to do so suggests that group members are competent, while a lack of ability suggests the opposite.

## **Status, competition, and stereotypes of warmth and competence**

The SCM posits causal relationships among social structure, stereotypes, and prejudice. Correlational data indicate that social structure predicts stereotypes, which in turn predict emotions (Cuddy et al., 2009; Fiske et al., 1999, 2002). However, only a few studies to date have manipulated social structural variables so as to infer causal influence on subsequent stereotypes and emotions. Some of these studies manipulated the status of individuals as members of groups. For example, in an experiment that manipulated the status and dress of a hypothetical female employee, a woman in a high-status position who dressed in a sexy manner was perceived to be less competent than when dressed in business attire (Glick, Larsen, Johnson, & Branstiter, 2005). In another experiment, job candidates who occupied higher-status jobs were expected to perform better and progress more successfully in their careers, indicating positive competence-based expectations (Aquino, Stewart, & Reed, 2005). In an experiment that manipulated status by varying the cost of a target person's house, occupants of more expensive houses were perceived as more competent (but not warm) than occupants of less expensive houses (Oldmeadow & Fiske, 2007). In an

experiment that manipulated both status and competition between individuals, perceived competence and warmth appeared, as the SCM would predict (Russell & Fiske, 2008), but the setting was again individual.

Group-level experiments have shown that some low-status groups are considered high in sociability and low in competence, whereas some high-status groups are considered low in sociability and high in competence (Betancor, Rodriguez, Rodriguez, Leyens, & Quiles, 2005). Furthermore, working mothers' stereotypic low competence (Cuddy, Fiske, & Glick, 2004) apparently stems from the diminished status associated with juggling careers and motherhood (Ridgeway & Correll, 2004). Therefore, experimental evidence suggests that changes in status are causal factors in interpreting an individual group member's abilities or a specific group's abilities.

Competition has also been manipulated, for many years, to gauge its effects on stereotypes, starting with the Robber's Cave study (Sherif et al., 1961). In more recent examples, competition has been manipulated as the real and symbolic threat posed by a Rwandan minority subgroup; both types of threats increased the respondents' negative attitudes towards the group (Stephan, Renfro, Esses, Stephan, & Martin, 2005). Likewise, experiments operationalized competition as the ability of foreigners to take away jobs from nationals, and they found that highly competitive foreigners elicited greater discrimination than low-competition foreigners (Falomir-Pichastor, Munoz-Rojas, Invernizzi, & Mugny, 2004). In other experiments, inter-*group* competition promoted stereotyped impressions between competitors, whereas inter-*personal* competition promoted individuated impressions (Ruscher, Fiske, Miki, & Van Manen, 1991). Therefore, competition causally diminishes perceptions of an outgroup's likeability and individuality. But these studies manipulated only status, not both status and competition simultaneously, and they did not measure their respective influence on competence and warmth specifically.

### Status, competition, and specific emotional prejudices

Perceiving other groups as warm versus cold and competent versus incompetent affects people's emotional responses to those groups. The SCM describes the systematic, differentiated patterns of emotional prejudices that tend to result from stereotypes of high and low warmth and competence (Fiske et al., 2002). Four emotions—admiration, contempt, envy, and pity—result from the four combinations of high and low warmth and competence stereotypes. Group-based emotions are often activated by situational appraisals of the potential harm or benefit the other group poses (Mackie, Devos, & Smith, 2000). Theoretical support for the relationships among these particular emotions and the four combinations of competence–warmth stereotypes can be derived from social comparison-based approaches to emotion (e.g. Smith, 2000). The univalent combinations of warmth–competence stereotypes lead to univalent emotional responses. High-warmth/high-competence stereotypes elicit admiration, an emotion that follows from assimilative (i.e. not competitive), upward (i.e. high status) social comparisons (e.g. Fiske et al., 2002). In the opposite corner, low-warmth/low-competence stereotypes elicit contempt, an emotion that follows from contrastive (i.e. competitive), downward (i.e. low status) comparisons (e.g. Dijker, Koomen, van den Heuvel, & Frijda, 1996). The ambivalent combinations of warmth–competence stereotypes lead to more ambivalent emotional responses. Low-warmth/high-competence stereotypes elicit envy, an emotion that stems from contrastive, upward social comparisons (e.g. Smith, Parrott, Ozer, & Moniz, 1994). High-warmth/low-competence stereotypes elicit pity, an emotion that stems from downward, assimilative social comparisons (e.g. Cuddy et al., 2007). We predict that by extension, the four combinations of high and low intergroup competition and status that correspond with the

four combinations of high and low warmth and competence will predict the same patterns of emotions.

## The present research

Our predictions suggest causal effects of social structure on societal stereotypes and emotions, but evidence to support causality is lacking. No study to date has simultaneously manipulated both relative status and competition at the intergroup level and observed changes in warmth–competence stereotypes and emotional prejudices. The goal of the present study, therefore, is to extend previous research by manipulating the social structural variables of competition and status in order to observe subsequent changes in trait stereotypes and affective reactions, thereby testing the proposed causal structure of the SCM. To do so, we conducted an experiment using hypothetical scenarios. Hypothetical scenarios allow us to fully cross structural variables and observe causal changes as they pertain to an unfamiliar ethnic group, without the risk of interference due to group relations constrained by actual historical and current circumstances. Thus, differences in competence–warmth traits should result directly from the causal influence of structural variables, devoid of covariation with actual group relationships, a crucial test of the SCM. The unfamiliar ethnic groups described in the scenarios varied systematically in both their competition and status, in order to test the hypothesis that, all else being equal, cultural stereotypes toward members of outgroups result from social structural relationships between groups. Specifically, we test the following:

- High group competition will lower rated warmth.
- Group competition will have no effect on rated competence.
- High group status will increase rated competence.
- Group status will have no effect on perceived warmth.
- Low-competition, high-status groups will elicit admiration.
- High-competition, high-status groups will elicit envy.
- High-competition, low-status groups will elicit contempt.
- Low-competition, low-status groups will elicit pity.

## Method

### Participants

One hundred and twenty undergraduates from a private northeastern university were recruited from a psychology participant pool in exchange for course credit. Participants completed the following materials as part of a larger, separate battery of questionnaires. Of the 120 participants, 31 were male (26%) and 89 were female (74%). The mean age was 20.1 years ( $SD = 1.6$ ). Ethnicities were not recorded.

### Materials

**Vignettes**—The questionnaires depicted an unfamiliar ethnic group said to be immigrating to our country in the near future. In a  $2 \times 2$  between-subjects design, the questionnaires varied the competition (high, low) and status (high, low) of the group in its home country and asked participants to report their perceptions of the group.

Participants read:

Due to political and economic circumstances, demographers predict waves of immigration in the next few years from an ethnic group outside our borders called Wallonians. In their home country, members of this group typically have prestigious jobs, and are well educated and economically successful [low-status jobs, and are uneducated and economically unsuccessful]. However, they also **take power and resources from** [share power and resources with] members of other groups. When members of this ethnic group arrive here, to what extent will people here be likely to view incoming group members in the following ways?

Bolded text was bolded in the original; variant indicated in bracketed text. Participants then rated the unfamiliar ethnic group on competence and warmth adjectives (see below). Next, participants read, ‘When members of this ethnic group arrive, to what extent will people here be likely to feel each of the following emotions toward them?’ and rated their emotional reactions (see below).

**Warmth–competence stereotypes**—Participants rated their perceptions of the unfamiliar ethnic group’s warmth (comprising *good-natured* and *warm*,  $\alpha = .93$ ) and competence (comprising *competent* and *capable*,  $\alpha = .87$ ), using 7-point scales (1 = *extremely unlikely* to 7 = *extremely likely*). All warmth-competence adjectives came from prior SCM studies (see Cuddy et al., 2007; Fiske et al., 2002).

**Emotional prejudices**—Using 7-point scales (1 = *extremely unlikely* to 7 = *extremely likely*), participants rated the likelihood that they and others would feel admiration (comprising *admiration* and *pride*,  $\alpha = .52$ ), envy (comprising *envy* and *jealousy*,  $\alpha = .94$ ), pity (comprising *pity* and *sympathy*,  $\alpha = .74$ ), and contempt (comprising *contempt* and *disgust*,  $\alpha = .61$ ) toward the incoming group.<sup>1</sup> All emotion words came from prior SCM studies (see Cuddy et al., 2007; Fiske et al., 2002).

## Results

### Effects of competition and status on warmth and competence stereotypes

To test the first hypothesis, we submitted warmth ratings to a 2 (Competition: high, low)  $\times$  2 (Status: high, low) ANOVA. As predicted, there was a main effect of competition on warmth, such that competitive groups were rated as less warm ( $M = 3.41$ ) than non-competitive groups ( $M = 3.99$ ),  $F(1, 115) = 6.67$ ,  $p < .02$ ,  $\eta^2 = .06$ . Also as predicted by Hypothesis 2, there was no main effect of status on warmth ( $F < 1.0$ ) and no status  $\times$  competition interaction ( $F < 1.0$ ). Table 1 presents the mean competence and warmth ratings by condition.

To test the third hypothesis, we submitted competence ratings to a 2 (Competition: high, low)  $\times$  2 (Status: high, low) analysis of variance (ANOVA). As predicted, there was a main effect of status on competence, such that members of high-status groups were rated as more competent ( $M = 4.71$ ) than low-status groups ( $M = 2.99$ ),  $F(1, 115) = 55.51$ ,  $p < .001$ ,  $\eta^2 = .33$ . Also as predicted by Hypothesis 3, there was no main effect of competition on competence ( $F = 2.08$ ), and no significant competition  $\times$  status interaction ( $F < 1.0$ ).

<sup>1</sup>The alpha coefficients for admiration and contempt are relatively low, according to Rosenthal and Rosnow (1991), but not exceptionally so, given that both variables are composed of only two items (Cortina, 1993). In both cases, the items making up the variables correlate more strongly with each other than with any other emotion items. In addition, decomposing admiration and contempt and re-running analyses with single items produces identical results.

## Differentiation of emotional prejudices

Next, we tested Hypotheses 4–8, that combinations of competition and status are differentially associated with unique emotional reactions. We first standardized the means of the emotions to account for main effect differences in the overall endorsement rate of one emotion over another (e.g. the average admiration rating across groups was 2.88 on a 7-point scale, whereas the average contempt rating was 4.17. See Table 2). We then submitted the emotions ratings to a 2 (Competition: high, low)  $\times$  2 (Status: high, low)  $\times$  4 (Emotion: admiration, contempt, envy, pity) mixed ANOVA with repeated measures on the Emotion factor, which revealed the predicted Competition  $\times$  Status  $\times$  Emotion interaction  $F(3, 345) = 4.59, p < .01, \eta^2 = .03$ .

We conducted separate contrast analyses for each emotion to test more focused predictions, assigning a weight of +3 to the cluster predicted to be high on the given emotion (e.g. low-competition/low-status for pity) and weights of –1 to each of the clusters predicted to be low on that emotion. Table 2 presents the mean emotion ratings by condition. As predicted, members of low-competition, high-status groups were rated as eliciting significantly more admiration and pride ( $M = 0.52$ ) than members of all other groups ( $M = -0.18$ ),  $t(116) = 3.59, p < .001$ .

Furthermore, members of high-status, high-competition groups elicited more envy ( $M = 0.65$ ) than members of other groups ( $M = -0.24$ ),  $t(116) = 5.44, p < .001$ . Likewise, members of low-competition, low-status groups elicited more pity and sympathy ( $M = 0.65$ ) than other group members ( $M = -0.20$ ),  $t(116) = 4.60, p < .001$ .

However, contrary to predictions, members of high-competition, low-status groups did not differ from the average of the other three groups in ratings of contempt and disgust ( $M_s = -0.06$  and  $0.02$ , respectively,  $t < -1.0$ ). In fact, group members were granted less contempt than members of high-competition/high-status groups *and* low-competition/low-status groups. The only group members who elicited lesser contempt ratings were members of low-competition/high-status groups. Post hoc contrasts revealed that the difference between members of this group and the other groups was significant,  $t(115) = -2.02, p < .05$ . That is, while our prediction regarding who would elicit the *most* contempt was not supported, we did find that members of low-competition/high-status groups (typically the ingroup or societal default group) elicited the *least*.

## Discussion

Results soundly support the SCM framework, shedding light specifically on the causal relationship of society-level structures among groups in determining society-level responses to out-groups. Further, outgroup response covers both cognitive and affective variables, all rooted from the common catalysts of relative competition and status. These seven out of eight effects are demonstrated at the societal level, as participants were asked for their perceptions of how society in general will respond to the unfamiliar group.

One prediction was not fully supported. Participants were mostly neutral on contempt and disgust (hovering around the midpoint, more than for the other emotions), apparently reluctant to report contempt and disgust for any of the immigrant groups; perhaps this reluctance is not surprising, given the extreme negativity of these emotions. Indeed, all the emotional prejudice ratings fell in the bottom half of the scale (in the ‘unlikely’ range), suggesting a reluctance to commit to any of them. Most of the effects resulted from less reluctance for the predicted emotion-group pairing than for the others. In the case of contempt and disgust, the null result does not undermine the model’s predictions because of three kinds of prior data. First, the student samples and national representative sample

survey (Cuddy et al., 2007; Fiske et al., 2002) showed clear reports of disgust/contempt toward low-warmth, low-competence groups, also seen as low-status and high-competition (or at least exploitation). Second, neuroimaging data show that these groups uniquely fail to elicit activation in the medial prefrontal cortex, an area that reliably responds to social stimuli. So these groups seem to be less-than-human, in that sense. But these groups do activate the insula, an area reliably implicated in disgust (Harris & Fiske, 2006). Third, actual ratings of immigrant groups seen to be low-status and exploitative (e.g. undocumented migrants) do elicit low-warmth and low-competence attributions, as here (Lee & Fiske, 2006). And anecdotal evidence would suggest that the American public currently views such migrants with much contempt and disgust, seeking to exclude them from the country.

The present study may suffer the external validity shortcomings inherent to most scenario studies. Using hypothetical scenarios allowed us to fully cross the structural variables—competition and status—and to measure two important outcome variables—stereotypes and emotions—without any confounding variables due to group histories. Hypothetical scenarios also helped us avoid alternative explanations due to expectancies or social desirability. For example, by using an unfamiliar outgroup, we are able to impose theoretical characteristics on the group, independent of participants' preconceptions of actual groups. Furthermore, participants need neither avoid appearing prejudiced toward a hypothetical scenario (Kunda & Spencer, 2003) nor differentiate between stereotypes and personal beliefs (Devine & Elliot, 1995). Instead we demonstrate causal effects at the societal level, by asking participants how they feel other group members will respond in general. For similar reasons, other intergroup researchers have also used scenario designs in their experiments (e.g. Alexander et al., 1999; Castano & Giner-Sorolla, 2006). It is notable that Wallonians, the French-speaking Belgians, are not vivid in the minds of geography-deprived American undergraduates. Thus, despite its potential weaknesses, the hypothetical scenario served its purpose, to show how social structure can in this circumstance produce results consistent with the causal predictions of the SCM. Out of eight predicted SCM structural effects, seven were fully supported here. These experimental data support a causal interpretation of correlational results from prior student and non-student samples in over a dozen countries, for varying aspects of the structure-to-bias (stereotypes, prejudice) predictions (Cuddy et al., 2009; Fiske et al., 2002). What is unique here is the simultaneous experimental manipulation of both competition and status, for a generalized group of immigrants, rather than a specific social group (such as mothers or older adults), at the societal level. This provides a crucial piece of the SCM puzzle.

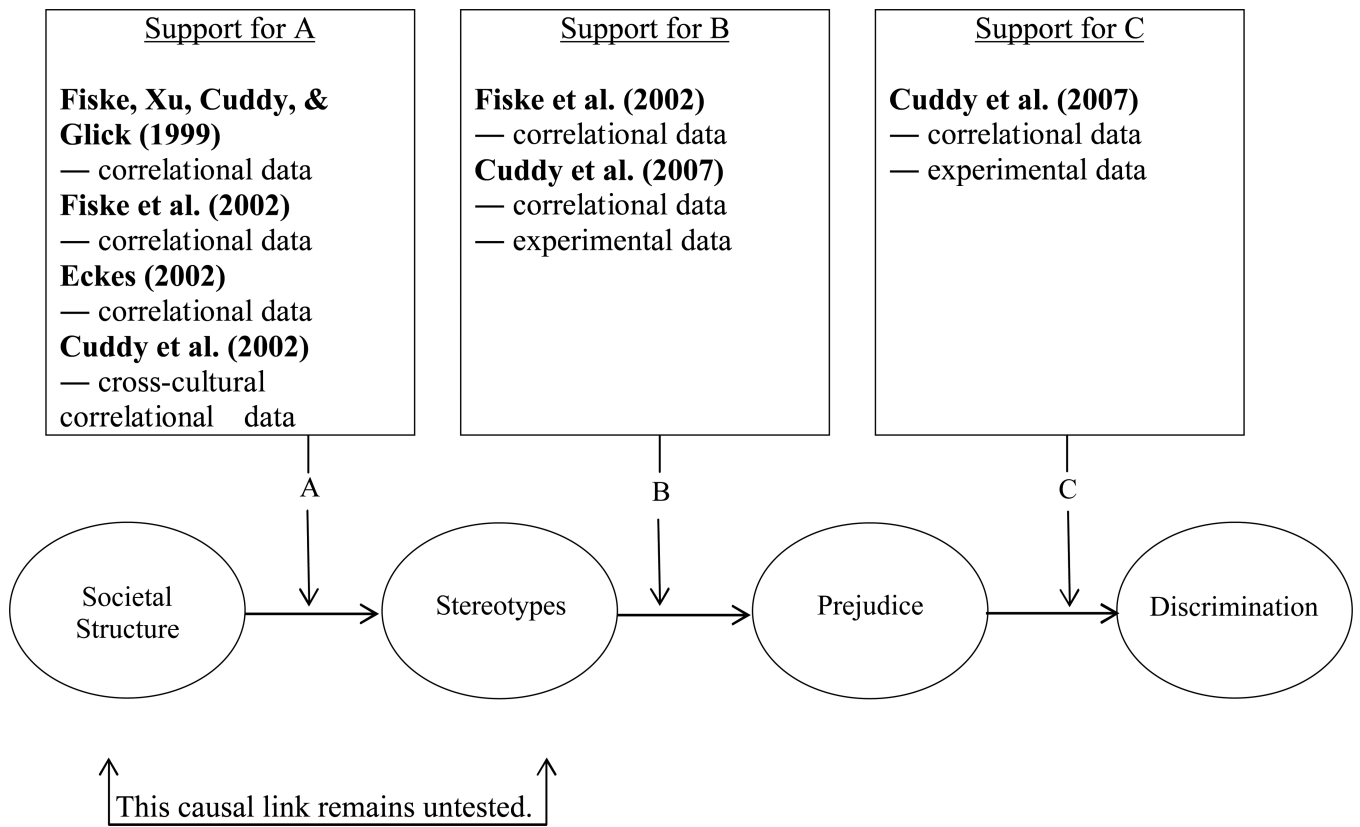
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**Figure 1.** Correlational support for the hypothesized casual links between societal structure and group bias.

**Table 1**

Mean competence and warmth ratings by condition

Status	Competition	Competence	Warmth
High	High	<b>4.58</b> (1.39)	3.47 (1.26)
High	Low	<b>4.83</b> (1.35)	<b>4.13</b> (1.44)
Low	High	2.80 (1.03)	3.35 (0.95)
Low	Low	3.21 (1.21)	<b>3.84</b> (1.20)

*Note:* Bolded means significantly differ from other column means at  $p < .05$ . Standard deviations are in parentheses

**Table 2**

Standardized emotion ratings by condition

Status	Competition	Admiration		Envy		Pity		Contempt	
High	Low	<b>0.52</b> (.82)	+3	0.55 (.85)	-1	-0.43 (.78)	-1	-0.32 (.91)	-1
High	High	0.16 (.91)	-1	<b>0.65</b> (.94)	-1	-0.57 (.87)	-1	0.13 (.90)	-1
Low	Low	-0.57 (.82)	-1	-0.44 (.71)	+3	<b>0.65</b> (.91)	+3	0.25 (1.15)	-1
Low	High	-0.13 (1.13)	-1	-0.82 (.55)	-1	0.40 (.89)	-1	-0.06 (.99)	+3
Unstandardized Mean		2.88 (1.15)		3.43 (1.85)		3.54 (1.40)		4.16 (1.20)	

*Note:* Cell values represent mean *z*-scores within emotion. Bolded means significantly differ from other column means at  $p < .001$ , according to contrast weights associated with each analysis. The column refers to contrast weights used in analyses. Standard deviations are in parentheses.