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Facial Expression Processing Varies with Political Affiliation

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Abstract

Conservative political beliefs have been linked to heightened stress reactivity and protective cognitive biases. Using a facial discrimination task designed to measure perceptions of threat (vs. non threat) and dominance (vs. submissiveness), I show that Republicans demonstrate a greater tendency to interpret ambiguous facial stimuli as expressing more threatening and more dominant emotions than do Democrats. The findings suggest the political ideology may be associated with basic social perceptual sensitivities.

Political ideologies encompass people's beliefs about public policies, judicial philosophy, and governmental strategies for mediating domestic and international crises. Previous studies have found that individuals who identify with conservative, Republican ideals show greater physiological arousal to aversive stimuli (e.g., loud noises and disturbing images) and are more likely to fear, and to be motivated to control uncertain situations than individuals who identify with more liberal, Democrat ideals (1, 2). These findings suggest that individual differences in certain aspects of political idealism, such as the belief that the government should react to international conflicts with either more cautious (Democrat) or more assertive (Republican) response tactics, may be rooted in neurocognitive processing of threatening stimuli. Another factor that may covary with political orientation is how people interpret trait impressions and respond to ambiguous social information in others.

Facial expression processing tasks can be used to examine implicit trait impressions and emotional reactions to other people. Studies that use these techniques suggest that humans are particularly sensitive to evaluate other people along two underlying dimensions of social processing (3), cues that signal interpersonal trustworthiness and hence threat versus non-threat, and cues that signal personal competencies, such as dominance versus submissiveness (4, 5). In this preliminary study, I examined the hypothesis that political orientation is associated with individual differences in perceptions of threat-level and dominance-status from ambiguous facial stimuli (3). I predicted that individuals who affiliate with the political party that typically promotes more aggressive responses to international conflicts, Republicans, would be more likely to interpret ambiguous facial stimuli as more threatening than would individuals who affiliate with the political party that promotes more diplomacy, Democrats.

Seven hundred forty adult subjects (18-65, mean age = 22.3yrs, 69% females) completed a facial expression discrimination task designed to measure perceptual biases in threat and dominance impressions. The subjects reported their political affiliation (55% Democrat) confidentially with a single (forced-choice) item that asked which political party they tend to lean towards (Democrat or Republican). Assessments were conducted during the months (February through September, 2008) leading up to the 2008 U.S. presidential election.

One male and one female actor each portrayed six ambiguous (not representing discrete emotions) facial expressions (12 expressions total). Photographs of the actors were taken under natural light and were converted to digital sketches and enhanced to be difficult to distinguish using digital exposure and blur effects with Corel Painter 9. The sketches were printed on two pages of a questionnaire, following the political and demographic items. Under each sketch, participants were asked to identify the face as expressing *sadness, joy, disgust, surprise, fear, or anger*. The responses were then coded as either signaling threat (anger, fear, disgust) versus non-threat (joy, sadness, surprise), and as conveying dominance (joy, anger, disgust) versus submissiveness (sadness, fear, surprise), due to the associations between these emotions and the corresponding trait impressions (3).

Chi square tests revealed significant ($ps < .01$) group differences in perceptions of threatening (vs. non-threatening) emotions in six of the twelve sketches. Group differences in perceptions of dominant (vs. submissive) emotions were found for seven sketches. As shown in Figure 1, Republicans showed a greater tendency to interpret the facial stimuli as expressing more threatening and more dominant emotions than did Democrats.

A regression analysis was then run using the sum of the five sketches that showed higher levels of threat interpretation in Republicans (Fig. 1) as the dependent variable and entering

participants' political affiliation, gender, age, and employment-status (each dichotomously coded) as independent variables. This analysis revealed that political affiliation was independently related to perceptions of threaten facial expressions ($\beta = .12, p < .001$). A similar analysis, instead entering the sum of the six faces that showed higher levels of dominance interpretation in Republicans as the dependent variable revealed a non significant relation between political affiliation and perceptions of dominance ($p = .08$). However, among the sum of sketches that were perceived as expressing relatively non-threatening, dominant emotions (see the three pairs of sketches in the upper left quadrant of Fig. 1), political affiliation was independently associated with perceptions of dominance ($\beta = .07, p = .05$).

Although it is unclear how the processing of social information may be related to many political platform policy positions, the findings highlight one potential neurocognitive basis for some elements of political idealism. Specifically, the results suggest that individuals who orient towards more conservative, Republican ideals have a lower threshold for processing threatening stimuli from ambiguous social information, compared to individuals who orient towards more liberal, Democratic ideals. These findings may help explain individual differences in the advocacy of either more aggressive (Republican) or more diplomatic (Democrat) strategies for dealing with domestic (e.g., criminality) and international conflicts.

References

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Figure 1

The x and y axes represent the percentage of people that identified each sketch as expressing threatening (vs. non threatening) and dominant (vs. submissive) emotions, respectively. Solid borders indicate Democrat scores and dashed borders indicate Republican scores. Non overlapping pairs of sketches indicate significant group differences ($ps < .01$).

