Despite many investigations exploring the various roots of prejudice toward outgroups (Hewstone, Rubin, & Willis, 2002; Mikulincer & Florian, 1998; Reynolds, 2000), work remains. Some researchers have studied emotion variables in relation to prejudice, yet the directionality of the association is still unclear (Ciarrochi & Forgas, 1999; Johnson & Fredrickson, 2005; Wilkowski, Robinson, Gordon, & Troop-Gordon, 2007). In one study using explicit measures, Ciarrochi and Forgas (1999) found that high-anxiety participants rated a potentially threatening outgroup (in this case, African Americans) more positively than did low-anxiety participants. The authors’ speculation for this finding was that the participants who were more trait-anxious also had lower self-confidence. Feeling more like an individual in an outgroup themselves, it is possible the anxious group sympathized with the outgroup, therefore rating African Americans more favorably. In contrast, Johnson and Fredrickson (2005) reported that positive emotions, like joy, reduced own-race bias and may be extrapolated to include reduced outgroup bias. Furthermore, it is possible that individuals prone to negative affect, like anxiety, may portray increased own-race bias and greater prejudice toward outgroups.

With respect to trait anger, the literature suggests that anger has a positive relation with prejudice. Wilkowski et al. (2007) observed that persons high in trait anger automatically interpreted ambiguous social situations as hostile. This finding suggested that people with high trait anger may regard ambiguous situations as hostile; conversely, persons with low trait anger may interpret ambiguous situations as friendly. Moreover, Tapias, Glaser, Keltner, Vasquez, and Wickens (2007) found that...
predisposition toward anger significantly predicted prejudice against African Americans.

In addition to trait variables, it is possible that specific developmental experiences may be associated with bias in social information processing. Substantial literature has linked cold and rejecting parenting with increased rates of depression, anger, and anxiety (e.g., Hoglund & Nicholas, 1995; Teicher, Samson, Polcari, & McGreener, 2006), all attributes previously associated with social judgments. Specifically with parental acceptance-rejection theory, Rohner and Khaleque (2005) posited that parental behaviors affect the development of an individual’s sense of self-worth. Low self-esteem could possibly lead an individual to avoid foreign events or even people (Rohner & Khaleque). If parental rejection contributes to increased avoidance of unfamiliar situations and people, then parental rejection in a person’s childhood may be associated with increased bias against outgroups. We expected parental acceptance and rejection to be associated with trait anger, anxiety, and depression and for parental variables to be either directly or indirectly—through their contribution to trait variables—linked with bias against an outgroup.

Most of the literature related to prejudice has employed explicit (i.e., self-report) measures for assessing bias (e.g., Ciarrochi & Forgas, 1999; Tapias et al., 2007). Concerns related to social desirability and self-report biases led to the development of the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). Greenwald and his colleagues designed the IAT to accurately represent existing racial bias by making it virtually impossible for participants to groom their responses to fit social mores. An implicit attitude is a subconscious judgment toward people or situations. Research shows that even when controlling for familiarity effects, the test reliably identifies implicit bias (Dasgupta, Greenwald, & Banaji, 2003). Measuring implicit bias, rather than explicit, could be more accurate because it is theoretically less contaminated by conscious manipulations.

The IAT provides a new window into the phenomenon of ingroup/outgroup differentiation. The IAT asks participants to sort stimuli from two different categories of “opposites”: groups (e.g., Muslim names and non-Muslim names) and characteristics (e.g., positive words and negative words). The test sequentially shows words from both categories at random, and the participant uses key presses to classify each stimulus into two compound categories (e.g., Muslim names/positive words and non-Muslim names/negative words). The compound categories thus create associations between them and produce a measure of implicit bias toward the groups presented.

Egloff and Schmukle (2002) questioned the empirical difference between taking explicit and implicit measures. They administered both an explicit survey involving self-reported anxiety and the IAT measuring for anxious associations. The findings showed significance such that participants could consciously manipulate their explicit report but not the results of the IAT. Thus, employing implicit measures, like the IAT, is paramount when experiments directly address socially sensitive topics (e.g., race, religion). By avoiding problems related to self-report, the IAT provides a compelling tool for identifying instances of bias. Thus, we chose to employ a measure of implicit bias to assess attitudes toward Muslim and non-Muslim names.

Despite some remaining concerns over the IAT’s effectiveness (Rothermund, Wentura, & De Houwer, 2005), the measure is widely accepted in social psychology. Since its creation, a substantial body of literature has supported the validity of Greenwald and colleagues’ implicit measure- ment (Greenwald et al., 2002; Karpinski & Hilton, 2001; Mierke & Klauer, 2003; Nosek, Greenwald, & Banaji, 2005; Nosek & Hansen, 2008). As a viable and reliable measure of implicit bias, we chose the IAT to assess individual differences in ingroup/outgroup bias.

Our study, then, addressed correlates of implicit bias that we believe have yet to be fully explored: individual trait characteristics and past parental experiences. The present investigation examined whether, and to what extent, these variables are involved in people’s implicit bias toward an outgroup. In light of current social, cultural, and political conditions, we selected Muslims as the outgroup of interest. We reasoned that comparing Muslim to non-Muslim names would be salient to participants and might result in some degree of prejudicial thinking. We hypothesized that both trait variables (e.g., anxiety, anger) and experiences of parental acceptance and rejection influence an individual’s implicit bias. That is, we expected to detect (a) positive associations for both trait anger and parental rejection in relation to implicit bias toward an outgroup; (b) negative associations for both trait anxiety and parental warmth in relation to implicit bias toward an outgroup; and (c) linkages between trait depression and the association effect and associations among parental variables...
and trait variables, although we were uncertain of the direction.

Method

Participants
Seventy-five students (19 men, 56 women, age range: 18–21) from Introductory Psychology courses at a small private university in the Pacific Northwest participated in our study in exchange for participation credit in their classes. Participation was voluntary; any students not wishing to take part in the experiment could pursue an alternative assignment. Participants were non-Muslim with the majority of students identified as Caucasian. Although we did not collect information regarding ethnicity, the course from which students participated in our experiment is required by the university. Therefore, we assumed that our sample reflected the larger university population, in which Euro-American students comprise 62% of the student body ("Student Demographics," 2006).

Measures
Our study used three measures to address questions related to links between intrapersonal factors and implicit bias: Rohner’s (2004) Adult Parental Acceptance-Rejection Questionnaire (short form; PARQ), Spielberger’s (1979) State-Trait Personality Inventory (STPI), and the Implicit Association Test (IAT; Greenwald et al., 1998). We administered both the PARQ and the STPI as provided whereas the IAT was customizable regarding ingroup/outgroup stimuli.

The PARQ short form contains two subscales that target perceptions of past experiences with both parents and consists of 48 items, 24 items on which respondents report on mothers and 24 identical items for fathers. The measure yields four variables. Two variables, for mothers and fathers individually, tap parental warmth (e.g., “My mother/father said nice things about me”). The last two variables assess parental rejection (e.g., “My mother/father saw me as a big nuisance”).

The STPI contains three subscales (Anger, Anxiety, and Depression) pertinent to our study. We derived the following reliability measures from our sample. One subscale assesses trait anxiety (e.g., “I feel nervous and restless”). A second subscale taps trait anger (e.g., “When I get mad, I say nasty things”). The last subscale employed examines trait depression (e.g., “I feel hopeless”).

To assess implicit bias, we employed the IAT. We designed the test specifically with traditional Arab-Muslim names as the target outgroup (e.g., Yasmine, Mohammad) and various traditional multicultural non-Muslim names as the ingroup (e.g., Mercedes, Jacques). The original IAT template provided the positive and negative association words for the test (e.g., beautiful, horrible; Draine, 2009). We administered the Adult PARQ and the STPI on MediaLab software (Jarvis, 2008).

To calculate IAT scores, we employed the algorithm recommended by Greenwald, Nosek, and Banaji (2003), focusing on differential reaction times between testing blocks. The formula subtracts the time it takes to complete the incompatible block, associating Muslim names with positive words (e.g., Mohammad & beautiful), from the reaction times for the compatible block, associating Muslim names with negative words (e.g., Mohammad & horrible). The IAT reaction times served as our interpretation of implicit bias. If an individual responded faster on the compatible block than the incompatible block, then the score for reaction time was negative, implying more bias against Muslim names. Figure 1 illustrates the concept of the IAT algorithm with sample reaction times.

Results
Table 1 indicates associations among variables. Although our measures yielded ordinal data, the data also included many tied values; thus, we employed Pearson’s r for assessing correlations and calculating effect sizes. Analyses indicated that measures employed had acceptable reliability (parental warmth: Mother, \( \alpha = .88 \), Father, \( \alpha = .89 \); parental rejection: Mother, \( \alpha = .56 \), Father, \( \alpha = .81 \); trait anxiety: \( \alpha = .82 \), trait anger: \( \alpha = .80 \), trait depression: \( \alpha = .86 \)).

In relation to parental acceptance or rejection, as perceived fathers’ warmth increased, participants responded more quickly with the compatible block than with the incompatible, \( r(75) = -.27, p = .02, r^2 = .07 \); although no such link was detected
between bias and mothers’ warmth, $r(75) = .01$, $p = .93$, $r^2 = .0001$. In other words, as father warmth increased, so too did bias (see Table 1). Of the trait variables observed (anger, anxiety, and depression), trait anger showed the greatest association effect with IAT scores. We found a marginal effect for trait anger, such that as trait anger increased, participants responded somewhat more quickly with the incompatible block than the compatible block. The negative value then suggests a slight preference for non-Muslim names.

Regarding linkages between trait anger and parental acceptance and rejection, only father, not mother, warmth was related to trait anger, $r(75) = .21$, $p = .07$, $r^2 = .04$. Conceptually, this finding means that as trait anger increased, bias toward the outgroup decreased (see Table 1).

**Discussion**

Results supported the general notion that intrapersonal factors are related to implicit bias, even though many hypotheses regarding personality traits, developmental experiences, and prejudice were not supported. Findings showed that perceived paternal warmth was positively associated with bias against Muslim names. In addition, a statistical trend suggested that there may be a relation between trait anger and bias against Muslim names.

The link between increasing father warmth and increased bias against Muslim names is consistent with earlier work examining intergroup judgments. Garrochi and Forgas (1999) observed that the more one felt comfortable with oneself and one’s place in the world, the more likely one is to judge others quickly, using mental shortcuts like stereotypes. Perhaps high levels of paternal warmth lead to feelings of comfort with oneself and the world; these feelings, in turn, result in greater out-group bias. Paternal warmth linked with outgroup avoidance contrasts with the parental acceptance-rejection theory (Rohner & Khaleque, 2005), which states that parental rejection could lead to avoidance of new and foreign experiences. A possible explanation of the contradicting results between our data and Rohner’s theory could be that paternal acceptance or rejection influences an individual’s development differently than maternal acceptance or rejection.

The relation between increasing trait anger and decreasing bias against Muslims is surprising and inconsistent with prior work examining emotion and implicit bias. DeSteno and colleagues (2004) found that participants in whom anger (versus sadness or a neutral condition) had been
induced showed increased bias against outgroups. The discrepancy between findings points to the possibility that trait emotions exert a different influence on outgroup bias than do state emotions.

In sum, our results suggest that certain developmental experiences exert nonintuitive influences on implicit bias. That increasing trait anger should be marginally associated with decreasing levels of outgroup bias and that paternal warmth exerts more influence on social judgments than maternal warmth are both findings that call for additional research. Nonetheless, the findings suggest that implicit bias is affected by intrapersonal factors, as well as environmental and cultural factors. Our results also highlight the importance of considering intrapersonal factors in efforts to understand the origins of outgroup bias.

Although our study supports the general hypothesis that intrapersonal variables influence bias, several important limitations must be noted. Our relatively small sample consisted primarily of upper middle class, Euro-American women. It is possible that the predominantly female sample influenced the noticeable differences between paternal and maternal experiences. It may be that findings would differ with a larger, more diverse sample. Moreover, we did not ask participants whether they live in single-parent households. Because the PARQ asked the participant to rate parental variables for both parents, the responses for individuals with single-parent households may have skewed the data. Identifying this demographic among participants might have given new insights into our findings.

Another limitation of our study has to do with the retrospective nature of reported parental warmth and rejection. It may be that some third variable, such as depression or low self-esteem, influenced both report of parent behavior and performance on the IAT. However, if depression influenced reports of parent behavior and performance on the IAT, it remains unclear why linkages between parental warmth and IAT effects would differ according to parent gender.

Despite the small effect sizes detected, the relations between the variables warrant further investigation. Our findings indicate that future, larger investigations should examine a potential link between trait anger and reduced bias. Moreover, our study contributed to not only the literature addressing bias, but also to parental acceptance-rejection. Our findings indicate that paternal interaction may have different influences on an individual than with maternal experiences. We encourage future researchers to explore the role fathers play in human development, on both an inter- and intrapersonal level.

References


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**Carolyn Brayko | Gonzaga University**

Carolyn Brayko, a Montana native, graduated *magna cum laude* from Gonzaga University in 2009. She earned her BA degree in French, along with minors in psychology and English. After a year of studying abroad in Paris, France, Ms. Brayko returned to Gonzaga University with a new passion for psychology. For the remainder of her undergraduate career, she dedicated herself to studying psychology and doing research with faculty members, particularly Drs. Anna Marie Medina and Monica Bartlett. This fall (2011), she is starting a doctoral program in behavior analysis at the University of Nevada, Reno, studying under Dr. Ramona Houmanfar. Ms. Brayko’s primary research interests include instructional design and learning from a behavior analytic approach.