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   • The manuscript includes figures, tables, and charts generated in either Microsoft Word or Excel.
   • Scanned images or illustrations must have a resolution of at least 600 dpi resolution.
   • Authors must check for APA style.

Security and Similarity: Parent-Child Political Attitude Congruence as Predicted by Parental Attachment
Laura D. Van Berkel, Erin D. Solomon, and Eddie M. Clark
Saint Louis University

The Relationship Between Parental Involvement During High School and Collegiate Academic Mastery
Stephanie Brueck, Lauren Mazza, and Alyssa Tousignant
Washington & Jefferson College

The Influence of Sex, Gender Bias, and Dress Style on Attitudes Toward Sexual Harassment
Kyle P. Weber, Lisa M. Bauer, and Tomas E. Martinez
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The Effect of Depression on Self-Harm and Treatment Outcome in Patients With Severe Dissociative Disorders
Jeremy C. Engelberg and Bethany L. Brand
Towson University

Effect of Family Configuration on Preadolects' Decision-Making Competence
Fan Yang
University of Iowa
The role of parental influence in political attitude formation has been widely debated by researchers for decades. A number of factors may contribute to the development of political attitudes, including genetics (Alford, Funk, & Hibbing, 2005; Settle, Dawes, & Fowler, 2009), terror management (Weise et al., 2008), cognitive complexity (Jost, Glaser, Kruglanski, & Sulloway, 2003; Tetlock, 1983), romantic attachment (Koleva & Rip, 2009; Weber & Federico, 2007), and parental attitudes (e.g., Glass, Bengtson, & Dunham, 1986; Hess & Torney, 1967; Jennings & Niemi, 1974). Parent-child relationships may be particularly important to examine as early childhood experiences can contribute to the formation of later attitudes and behaviors (Hazan & Shaver, 1987). Studies on the transmission of political ideology within families have been mainly correlational, establishing that parents and children have a degree of similarity in political attitudes (e.g., Hess & Torney, 1967; Jennings & Niemi, 1974). These studies, however, have not examined specific factors within the parent-child relationship that may lead to varying degrees of attitudinal similarity. What characteristics of parent-child relationships influence attitudinal similarity? As attachment style can influence behavior throughout the lifespan (e.g., Hazan & Shaver, 1987), we examined attachment style as one potential predictor of parent-child political attitude congruence.

Attachment Theory
Attachment theory posits that parental attachment provides a sense of security and protection to offspring (Bowlby, 1969/1982). Infants can form attachments to multiple figures; however, these attachments are not equivalent or interchangeable (Cassidy, 2008). Moreover, children can form attachments to their mother and to their father, as well as to other figures, but the mere presence of attachment is not necessarily an indicator of attachment quality.

There are two broad categories of attachment relationships: secure and insecure (Weinfield,
Sroufe, Egeland, & Carlson, 2008). Secure attachment relationships are characterized by an infant’s reliance on the caregiver as a potential source of protection and comfort. This style of attachment promotes exploration of the environment because children can depend on caregivers for security. In contrast, in insecure attachment relationships the caregiver is inconsistent in both availability and comfort. Caregivers are indifferent or unpredictable in responding to the child’s needs, potentially resulting in feelings of anxiety or anger about the caregiver’s availability. Although attachment to caregivers forms in infancy, it is relatively stable over the lifespan (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000) and affects behavior throughout life (Hazan & Shaver, 1987). Thus, it is reasonable to expect that attachment relationships formed in childhood may influence later attitudes, including political attitudes.

### Political Attitude Congruence Between Parents and Children

Though previous research has not specifically focused on attachment style as a predictor of political attitude transmission, there has been extensive study of political socialization. By definition, political socialization is “those developmental processes through which persons acquire political orientations and patterns of behavior” (Easton & Dennis, 1969, p. 7). Socialization can occur through institutions (e.g., family, school, church), larger social settings (e.g., social class, ethnic origin, geographical regions), and social reactions to the child’s individual characteristics (e.g., intelligence, personal/emotional needs; Hess & Torney, 1967). Previous research suggests that the family may be one institution through which children learn social norms, and that this process of socialization affects attitudes into adulthood (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Campbell, 1969). Family members may act as teaching agents, provide models for children to emulate, and/or serve as a guide for later relationships with the government and political system (Hess & Torney, 1967). Extensive political socialization research conducted by Jennings and Niemi (1974) examined similarity in political partisanship between high school students and their parents. They found a high degree of partisanship similarity, suggesting that parents influence their child’s attitudes to a certain extent. Furthermore, parent-child attitudinal similarity appears relatively stable across the life course (Glass et al., 1986). Taken together, these studies suggest that parental political attitudes are highly related to children’s political attitudes and that this relation continues into adulthood.

It is important to note that attitudinal similarity may differ between mother-child and father-child relationships. Although Jennings and Niemi (1968) found that individuals had approximately equal correlations between their attitudes and both their fathers’ and their mothers’ attitudes, other studies have suggested that children are more likely to adopt their mother’s political orientation than their father’s political orientation (Beck & Jennings, 1975; Dash, 1992; Thomas, 1971). Thus, it is important to examine parent-child attitude congruence (i.e., mother-child and father-child relationships) separately to assess these potential differences. Though the political attitudes of parents and children are strongly connected, we sought to determine factors that may cause variability in the degree of similarity.

### Parental Attachment and Political Attitude Congruence

While there has been limited research on the impact of attachment on attitude transmission, there is reason to believe that the two are related. Children form attachments to government figures in a similar manner as they do to their parents or caregivers (Easton & Dennis, 1969; Hess & Torney, 1967). Thus, as attitudes towards familial authority figures develop, attitudes towards governmental authority figures may be subsequently influenced.

Furthermore, children are more likely to adopt their parents’ political orientation if the family is highly politicized and if parents hold consistent political attitudes with one another and over time (Jennings, Stoker, & Bowers, 2009). Jennings and Niemi (1974) suggested that children were more likely to learn a behavior if their models were behaviorally consistent. Given that one of the key features of secure attachment is the child’s perception of parents’ consistency and dependability (Weinfield et al., 2008), securely attached children tend to identify with their parents and adopt similar patterns of behavior (Bowlby, 1973). For example, individuals with secure relationships are more likely to adopt their attachment figures’ religious standards than are individuals with insecure relationships (Granqvist & Kirkpatrick, 2008). Since securely attached children have consistent behavioral and attitudinal models, they may have greater similarity in political attitudes with their parents than do children with insecure
attachment and inconsistent caregivers.

So far, research examining the quality of parent-child relationships with respect to political attitude transmission has yielded conflicting results. Jennings and Niemi (1968) suggested that parental affection had no influence on successful transmission. Conversely, Tedin (1974) found that parent attractiveness, defined as the child’s feelings of closeness to and admiration for the parent, had an impact on attitude congruence about some specific policies, but not others. Finally, Middleton and Putney (1963) found that when parents were at the extremes of disciplinary styles, either permissive or authoritarian, children differed more from their parents politically. Not only have results been somewhat conflicting, but these researchers also used vague measurements of parental relationships (especially as attachment theory was developing at approximately the same time). Participants answered questions about disciplinary styles (Jennings & Niemi, 1968; Middleton & Putney, 1963) and/or general, single-item questions about closeness to the parent figure (Middleton & Putney, 1963; Tedin, 1974). While these studies suggest that the relationship quality between parents and children might influence political attitude transmission, we sought to examine this influence using a more comprehensive assessment of attachment style.

**Current Research Hypotheses**

In this study, we sought to examine the relation between parental attachment and parent-child political attitude congruence. We expected that participants would have attitudes that were more congruent with their mothers’ than with their fathers’ political attitudes, regardless of attachment style (H1). Furthermore, we hypothesized that participants would have attitudes that were more similar with their same-sex parent than with their different-sex parent (H2). That is, women would have attitudes that were more similar to their mothers than to their fathers and men would have attitudes that are more similar to their fathers than to their mothers, irrespective of attachment style. We expected attachment style to influence attitude transmission such that securely attached individuals would be more likely to have congruent political attitudes with both their fathers (H3) and their mothers (H4) than would insecurely attached individuals.

**Method**

**Participants**

Participants consisted of 125 undergraduate students from a private, Midwestern, Jesuit university. Two participants did not complete half or more of the questions on any given measure and were subsequently excluded from analysis. The remaining sample consisted of 123 participants (37 men, 85 women, and 1 undisclosed). The sample was approximately 73.2% White American, 18.7% Asian American/Pacific Islander, 2.4% Bi-racial, 0.8% African American, 0.8% Hispanic, and 3.3% self-described as “other.” Participant ages ranged from 17-29 years old with a mean of 19.41 years (SD = 1.81). Participants were predominantly Catholic (55.3%) and Protestant (14.6%), however 12.2% had no religious affiliation, 4.9% were Hindu, 2.4% were Jewish, 2.4% were Muslim, .8% were Buddhist, 4.9% self-described as “other,” and 2.4% were undisclosed.

**Measures and Procedure**

We recruited participants from introductory psychology courses after receiving approval from the institutional review board, and they received course credit for participation. After participants were informed of the study procedures and gave their consent to participate, they completed a battery of online questionnaires designed to measure parental attachment, political attitudes, and general demographic information. General demographic information included age, sex, religion, and ethnicity. Participants were then debriefed and thanked for their participation.

**Parent Attachment.** The Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 2009) is a 75-item questionnaire designed to measure attachment to the participant’s mother, father, and peers. As peer attachment was irrelevant to hypotheses, we only analyzed the mother and father subscales. Participants answered how true statements were for them across dimensions of trust (e.g., “My mother accepts me as I am”), communication (e.g., “My mother helps me to understand myself better”), and alienation (e.g., “My mother doesn’t understand what I’m going through these days”) on a 5-point Likert scale, (1 = almost never or never true to 5 = almost always or always true). Higher scores indicated greater levels of attachment (e.g., higher security). Armsden and Greenberg (2009) have found this scale to be related to other scales assessing parent-child relationships as well as predictive of well-being and coping strategies.
In previous research, this scale was found to be highly reliable (αmother = .87, αfather = .89; Armsden & Greenberg, 2009). Internal consistency analysis for the current sample indicated that the IPPA was a reliable measure of both maternal (α = .95) and paternal attachment (α = .96).

**Political Attitudes.** Participants self-reported liberalism and conservatism on separate 9-point Likert scales (1 = extremely not liberal/conservative to 9 = extremely liberal/conservative). In his review, Jost (2006) argues that respondents place themselves on single-item political attitude scales with a high degree of stability and that these scales are predictive of voting behaviors. We modified these self-reports of political attitudes to assess parental attitudes as well (1 = extremely not liberal/conservative to 9 = extremely liberal/conservative). Participants rated their mothers’ and fathers’ liberalism and conservatism using the same 9-point Likert scales. In total participants rated political attitudes on six separate scales: self-reported liberalism, self-reported conservatism, mother’s liberalism, mother’s conservatism, father’s liberalism, and father’s conservatism.

**Results**

Prior to analysis, items were averaged, after appropriate reverse coding, to create mean scores for each scale administered. We replaced missing scale data with the mean score of the missing item. See Table 1 for complete means and standard deviations of attachment groups and political attitude scores.

We divided participants into three groups based on attachment style: low-security, medium-security, and high-security, following the methods of Armnsden and Greenberg (1987). We grouped participants separately for maternal and paternal attachment analyses. Participants were divided according to their score on the father subscale of the IPPA such that participants with the lowest third of scores (approximately) were in the low-security group (n = 41), the middle third were in the medium-security group (n = 39), and the highest third were in the high-security group (n = 43). Using the same method, we divided participants into groups based on maternal attachment style as well: low-security (n = 42), medium-security (n = 38), and high-security (n = 43). In general, maternal attachment was significantly positively associated with paternal attachment in general, r(123) = .28, p = .002, and when separately analyzed among men, r(37) = .41, p = .011, and women, r(85) = .28, p = .010, suggesting a moderate relation in attachment style between parents.

To assess differences in political attitudes between participants and parents, we subtracted participants’ ratings of their liberalism and conservatism from reported ratings of parents’ liberalism and conservatism to create deviance scores. These scores had a possible range from -8 to 8. Positive scores indicated that participants were less liberal

<p>| TABLE 1 |
| Means and Standard Deviations for Attachment Groups and Political Attitudes |</p>
<table>
<thead>
<tr>
<th>Parental Attachment</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant Conservatism</td>
<td>4.76</td>
<td>1.92</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Men (n = 37)</td>
<td>4.49</td>
<td>1.76</td>
<td>1.00–7.00</td>
</tr>
<tr>
<td>Women (n = 85)</td>
<td>4.88</td>
<td>1.99</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Participant Liberalism</td>
<td>5.02</td>
<td>2.04</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Men</td>
<td>5.08</td>
<td>2.19</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Women</td>
<td>5.00</td>
<td>2.00</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Maternal Conservatism</td>
<td>5.55</td>
<td>2.16</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Men</td>
<td>5.63</td>
<td>2.31</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Women</td>
<td>5.51</td>
<td>2.12</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Maternal Liberalism</td>
<td>4.39</td>
<td>2.14</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Men</td>
<td>4.01</td>
<td>2.25</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Women</td>
<td>4.54</td>
<td>2.10</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Paternal Conservatism</td>
<td>5.95</td>
<td>2.31</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Men</td>
<td>5.59</td>
<td>2.36</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Women</td>
<td>6.15</td>
<td>2.25</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Paternal Liberalism</td>
<td>3.91</td>
<td>2.15</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Men</td>
<td>4.08</td>
<td>2.43</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Women</td>
<td>3.78</td>
<td>1.99</td>
<td>1.00–9.00</td>
</tr>
<tr>
<td>Maternal Attachment</td>
<td>3.92</td>
<td>.68</td>
<td>1.60–5.00</td>
</tr>
<tr>
<td>Low-Security (n = 42)</td>
<td>3.15</td>
<td>.47</td>
<td>1.60–3.68</td>
</tr>
<tr>
<td>Medium-Security (n = 38)</td>
<td>4.00</td>
<td>.16</td>
<td>3.72–4.24</td>
</tr>
<tr>
<td>High-Security (n = 43)</td>
<td>4.59</td>
<td>.23</td>
<td>4.28–5.00</td>
</tr>
<tr>
<td>Paternal Attachment</td>
<td>3.58</td>
<td>.80</td>
<td>1.41–5.00</td>
</tr>
<tr>
<td>Low-Security (n = 41)</td>
<td>2.67</td>
<td>.55</td>
<td>1.41–3.32</td>
</tr>
<tr>
<td>Medium-Security (n = 39)</td>
<td>3.66</td>
<td>.18</td>
<td>3.36–3.92</td>
</tr>
<tr>
<td>High-Security (n = 43)</td>
<td>4.37</td>
<td>.29</td>
<td>3.96–5.00</td>
</tr>
</tbody>
</table>
Attachment and Political Attitude Congruence | Laura D. Van Berkel, Erin D. Solomon, and Eddie M. Clark

or less conservative than their parents were and negative scores indicated that participants were more liberal or more conservative than their parents were. Numbers closer to zero indicated greater levels of political attitude congruence between parents and children, with zero indicating matching participant and parent scores.

**Comparison of Maternal and Paternal Attitude Congruence**

We expected that participants would generally have political attitudes that were more congruent with their mothers than with their fathers (H1). Furthermore, we predicted that participants would have political attitudes that were more similar to their same-sex parent than to their different-sex parent (H2). Correlations between participant, maternal, and paternal political attitudes are presented in Table 2. These correlations by participant sex are presented in Table 3.

**Conservative attitudes.** To assess whether participants deviated more in conservative attitudes with their fathers than with their mothers, we submitted deviance scores to a dependent, or paired-samples, t test. Results indicated that participants deviated significantly less from their mothers’ liberal attitudes (.75, 9D = 2.17) than from their fathers in conservatism (M = 1.19, 9D = 2.38), t(122) = -2.18, 9 = .031, 9 = .19. When men and women were examined separately, female participants also deviated significantly less from their mother’s liberal attitudes (M = .60, 9D = 2.10) than from their father in conservatism (M = 1.29, 9D = 2.47), t(84) = -2.97, 9 = .004, 9 = .30. Male participants, however, did not significantly differ between mother (M = 1.10, 9D = 2.32) and father in conservatism deviance (M = 1.09, 9D = 2.10), t(36) = .04, 9 = .971, 9 = .00.

**Liberal attitudes.** To assess whether participants deviated more in liberal attitudes with their mothers or with their fathers, we submitted deviance scores to a dependent, or paired-samples, t test. Results suggested that participants deviated significantly less from their mother (M = -.60, 9D = 1.93) than from their father in liberalism (M = -1.10, 9D = 2.16), t(122) = 2.70, 9 = .008, 9 = .24. Female participants also deviated significantly less from their mother (M = -1.10, 9D = 1.85) than from their father in liberalism (M = -1.19, 9D = 2.22), t(84) = 3.95, 9 < .001, 9 = .38. Male participants, however, did not significantly differ between mother (M = -1.02, 9D = 2.12) and father in liberalism deviance (M = -1.00, 9D = 1.94), t(36) = -0.3, 9 = .974, 9 = .01.

**Parental Congruence.** We examined perceived congruence between parents by subtracting ratings of fathers’ political attitudes from ratings of mothers’ political attitudes. Participants perceived significant differences between their parents in both liberal and conservative attitudes. Mothers were seen as more liberal (M = 4.39, 9D = 2.14) than fathers (M = 5.91, 9D = 2.15), t(122) = 2.57, 9 = .011, 9 = .22. Conversely, fathers were seen as more conservative (M = 5.95, 9D = 2.31) than mothers (M = 5.55, 9D = 2.16), t(122) = -1.97, 9 = .051, 9 = .18. When participants were examined separately by sex, results suggest that male participants did not perceive any significant difference between their fathers’ liberal attitudes (M = 5.59, 9D = 2.36) and mothers’ liberal attitudes (M = 5.64, 9D = 2.31), t(36) = .104, 9 = .918, 9 = .02. Nor did male participants perceive a significant difference between their fathers’ conservative attitudes (M = 4.01, 9D = 2.25) and mothers’ liberal attitudes (M = 4.08, 9D = 2.43), t(36) = -1.7, 9 = .870, 9 = .03. Female participants, however, did perceive that their parents had significantly different conservative attitudes, t(84) = -2.79, 9 = -.006, 9 = .29, such that fathers (M = 6.15, 9D = 2.25) were seen as more conservative than mothers (M = 5.51, 9D = 2.12). Female participants also perceived a significant difference in parental liberal attitudes, t(84) = 3.93, 9 < .001, 9 = .37, such that mothers (M = 4.54, 9D = 2.10) were seen as more liberal than fathers (M = 3.78, 9D = 1.99). Overall, these results support the first hypothesis (H1) and suggest that participants generally deviated less from their mother than from their father in both conservatism and liberalism. While female participants deviated significantly less in conservatism and liberalism from their mother than from their father, there were no significant differences in conservatism or liberalism attitude deviance between mothers and fathers for male participants. This partially supports the second hypothesis (H2); women had attitudes that are more congruent with their mothers, but men did not differ in attitude congruence based on parent sex. Furthermore, women tended to perceive greater differences in political attitudes between parents than did men.

**Father-Child Attitude Congruence by Attachment**

We expected participants with more secure paternal attachment would deviate less in political attitudes from their fathers than would participants with less secure attachment (H3). We conducted...
a one-way ANOVA to assess political attitude congruence between participants and their fathers in conservatism based on paternal attachment style. This analysis revealed significant differences among low-, medium-, and high-security attachment groups in political attitude congruence, \( F(2, 120) = 3.43, p = .036, \eta^2 = .05 \). Tukey’s post-hoc analysis indicated that high-security individuals (\( M = .51, SD = 2.35 \)) were more likely to have corresponding conservatism with their fathers than were medium-security individuals (\( M = 1.85, SD = 2.12, p = .028 \)). However, low-security individuals (\( M = 1.29, SD = 2.49 \)) did not significantly differ from either medium-security, \( p = .527 \), or high-security individuals, \( p = .283 \). See Table 4 for the complete means and standard deviations of parent-child political attitude deviance scores across attachment groups for both mother-child and father-child comparisons.

We also conducted a one-way ANOVA to assess political attitude congruence between participants and their fathers in liberalism based on paternal attachment style. Results showed significant differences in liberalism attitude congruence among low-, medium-, and high-security attachment groups, \( F(2, 120) = 3.23, p = .043, \eta^2 = .05 \). Tukey’s post-hoc analysis was not significant, but indicated a trend such that high-security individuals (\( M = .44, SD = 2.10 \)) had greater corresponding liberalism with their fathers than did low-security individuals (\( M = -1.41, SD = 2.26, p = .062 \)). Medium-security individuals (\( M = -1.50, SD = 1.98 \)), however, did not significantly differ from either high-security, \( p = .100 \), or low-security individuals, \( p = .982 \). Taken together, these results suggest evidence for the third hypothesis (H3). Participants who were more securely attached to their father were more likely to have corresponding liberal and conservative attitudes with their father than participants who were less securely attached.

### Mother-Child Attitude Congruence by Attachment

We predicted that participants with more secure attachment would deviate less in political attitudes from their mothers than would participants with less secure attachment (H4). We conducted a one-way ANOVA to assess differences in political attitude congruence between participants and their mothers in conservatism based on maternal attachment style. This analysis revealed no significant differences among low-, medium-, and high-security attachment groups in maternal political attitude congruence, \( F(2, 120) = .04, p = .963, \eta^2 = .00 \). A one-way ANOVA also revealed no significant differences among low-, medium-, and high-security attachment groups in regards to liberal political attitude congruence, \( F(2, 120) = .36, p = .696, \eta^2 = .00 \). Results did not support the forth hypothesis (H4) that participants who were more securely attached to their mother were more likely to have corresponding liberal and conservative attitudes with their mother than subjects who were less securely attached.

### Discussion

In support of previous research, and our first hypothesis (H1; Beck & Jennings, 1975; Dash, 1992; Thomas, 1971), participants had greater conservative and liberal attitude congruence with their mothers than with fathers, regardless of attachment group. Furthermore, the second hypothesis (H2) was partially supported as female participants were more likely to have corresponding liberalism.
and conservatism with their mothers than with their fathers, regardless of attachment group. However, there were no significant differences in attitude congruence, based on parent sex for male participants. This may be partially because women in the sample perceived greater differences between parental political attitudes than did men. As predicted (H3), paternal attachment was a significant predictor of father-child political attitude congruence. Participants with high paternal security had significantly greater conservative attitude congruence with their fathers than participants with medium-security. Additionally, participants with high paternal security had greater liberal attitude congruence with their fathers than participants with low-security paternal attachment. Maternal attachment, however, was not a significant predictor of mother-child political attitude congruence for either liberalism or conservatism, in contrast to our forth hypothesis (H4). These findings suggest that overall mothers’ political attitudes may influence political attitudes more than fathers’ political attitudes while the influence of fathers’ attitudes is more dependent on contextual factors, such as attachment style.

There are several reasons attachment style may have influenced the transmission of paternal political attitudes, but not maternal political attitudes. It is possible that transmission of political attitudes based on attachment is influenced by perceived sex roles. Women are significantly less likely than men to run for political office or to view themselves as qualified (Fox & Lawless, 2004) and politics may be considered a “man’s job” (Verba, Burns, & Schlozman, 1997). Children may view fathers as more political than mothers and they may be more outspoken about their attitudes, creating greater perceived deviance and sensitivity to relationship dynamics.

Additionally, results of this study indicate greater variability in paternal attachment than maternal attachment. Though we divided participants into attachment groups based on previous methods, only 8.1% participants had mean maternal attachment scores below the midpoint of three on a 5-point Likert scale, suggesting possible ceiling effects in that participants were securely attached to their mothers overall. On the other hand, 19.5% of participants had mean paternal attachment scores below three on a 5-point Likert scale, suggesting more variability in paternal than maternal attachment relationships. This lack of variance in maternal attachment scores and attitude congruence may explain why maternal attachment did not significantly predict mother-child political attitude deviance but paternal attachment did predict father-child attitude deviance.

Our results support previous research indicating that securely attached individuals are more likely to adhere to their fathers’ attitudes than insecure individuals (Granqvist, 1998), and that positive parent-child relationships are related to greater attitude transmission (Middleton & Putney, 1963). Political attitude transmission is more likely when the parent holds consistent attitudes and provides a stable model of political behavior (Jennings et al., 2009). Securely attached participants may have had greater political attitude congruence with their fathers because they saw the father as a stable and consistent figure from which to learn political attitudes and behavior. Additionally, secure attachment may cause children to become receptive to the messages of socialization since they are oriented more towards the caregiver than are insecurely attached children (Kochanska, Aksan, Knaack, & Rhines, 2004). In this relationship, the parent may praise the child for holding and verbalizing the same political views, reinforcing these attitudes, whereas parents in insecure relationships would most likely act indifferently towards their child’s views.

### Limitations and Future Directions

Several factors may have influenced the results of this study. First, as with many studies using undergraduate students, the current sample may not be representative of the diversity of the general population. The majority of participants were female, White American, and attended a Catholic Jesuit university. As previously discussed, the majority of participants had attachment scores above the scale midpoint of three. This may indicate

### Table 4

<table>
<thead>
<tr>
<th>Parent-Child Political Attitude Deviance</th>
<th>Attachment Security</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>F</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother-Child Conservatism</td>
<td></td>
<td>.79</td>
<td>(2.23)</td>
<td>.79</td>
<td>(1.88)</td>
<td>.67</td>
</tr>
<tr>
<td>Mother-Child Liberalism</td>
<td></td>
<td>-39</td>
<td>(2.43)</td>
<td>-68</td>
<td>(1.28)</td>
<td>-7.21</td>
</tr>
<tr>
<td>Father-Child Conservatism</td>
<td></td>
<td>1.29</td>
<td>(2.49)</td>
<td>1.85</td>
<td>(2.12)</td>
<td>5.0</td>
</tr>
<tr>
<td>Father-Child Liberalism</td>
<td></td>
<td>-1.50</td>
<td>(2.26)</td>
<td>-1.41</td>
<td>(1.98)</td>
<td>-4.4</td>
</tr>
</tbody>
</table>

Note: *p < .05. Standard deviations appear in parentheses next to means. Means with the same subscript within rows are significantly different at the p < .05 based on Tukey’s HSD post-hoc paired comparisons.
potential ceiling effects in that most participants were relatively secure in both maternal and paternal attachment. Finally, the sample used in the current study may not have been large enough to detect a small effect size. Future studies should aim for a more diverse sample, with greater variability in attachment style, education level, ethnicity, religious affiliation, and sex.

Furthermore, this study was constrained by available measures of attachment style and political ideology. Many attachment measures were designed to assess parental attachment in childhood (e.g., Ainsworth, Blehar, Waters, & Wall, 1978; Cassidy & Marvin, 1992; Main & Cassidy, 1988) or focus on attachment in romantic relationships (e.g., Hazan & Shaver, 1987). Given that political attitudes begin to form in early childhood, it was of importance to use an assessment of parental attachment rather than romantic attachments formed in later adulthood, while using an adult population with established political attitudes. Although there are many measures of adult attachment, some require lengthy assessment with special training (e.g., the Adult Attachment Interview; George, Kaplan, & Main, 1996) or focus on extremes in attachment (e.g., the Attachment History Questionnaire; Pottharst, 1990). We selected the IPPA (Armsden & Greenberg, 1987; Armsden & Greenberg, 2009) for the current study due to its fit with the study population of young adults, ability to measure attachment to both parents, acceptable level of reliability, and ease of administration. While it is a comprehensive measure of adult parental attachment, it assesses current attitudes toward parents. It would be beneficial to assess participants’ attitudes during childhood, either by asking participants to look back on their childhood or by conducting a longitudinal study of attachment and political attitude congruence over time. Assessment of attachment in childhood would help provide a more comprehensive picture of political attitude development over the lifespan.

We were also limited in our assessment of political attitudes by available measures. Many established scales designed to measure political attitudes ask about specific policies and are therefore outdated or include extreme statements that are no longer particularly relevant (e.g., the Social Attitudes Statement Scale, SA-II, Kerlinger, 1984; Conservatism Scale, McClosky, 1958; McClosky & Bann, 1979). While single-item self-reports are commonly used in assessment of political attitudes (e.g., Jost, 2006; Pratto, Sidanius, Stallworth, & Malle, 1994; Weber & Federico, 2007), this study could be improved by using an objective measure of political attitudes or by asking about past political behavior (e.g., voting history), rather than self-reported liberalism and conservatism. In this way, liberalism and conservatism would have standardized definitions, accounting for individual participant differences in the meaning of liberal or conservative. Furthermore, while participant perception is important, future research could ask participants’ parents to self-report their political attitudes. This measurement would assess parent-child attitude similarity more accurately and allow comparison of parents’ attitudes to participant perception.

In the future, research could also focus on the specific characteristics of attachment style that influence attitude congruence and the broader implications of this influence. These studies could assess communication and social learning between parents and children to examine the underlying reasons secure attachment predicts political attitude congruence between fathers and children. Furthermore, attachment style may have “real-world” implications in that it may also be associated with congruent parent-child political behaviors, such as campaign involvement and voting behavior.

Conclusion

Results of the current study support previous research indicating that parental attachment continues to influence attitudes beyond childhood and political attitudes may be based in early childhood experiences. When caregivers are stable figures, children may seek—and have the opportunity—to model these consistent attitudes and behaviors. Attachment style alone is insufficient to explain the development of political attitudes, but it may be an important influence.

References


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Previous studies demonstrating improved academic performance among children with high amounts of parental involvement have led to an increased interest in the nature and extent of parental participation in education. Given that parental support begins in infancy, parents can be considered a child’s first teacher. Providing a rudimentary education early in a child’s development is important for preparing him or her for education in a school setting. As a child enters a formal education setting, he or she can no longer rely on a single form of guidance since teachers are continuously changing (Epstein, 1995). Therefore, the consistency of instructive reinforcement by a parent may provide the support children need as they progress through each level of education.

Berger (1991) suggests that the Lockean idea of the importance of parental involvement in education dates back to the time before structured school systems were in place, when parents were the sole educators. According to John Locke’s principle of *tabula rasa*, children are blank slates at birth and need to be nurtured by their parents to gain knowledge (Martin & Fabes, 2009). Parents may provide this nurturance through modeling and teaching skills, morals, and values to prepare their children for life outside of the home. When schooling outside of the home was implemented, a need for educational support by the parents was acknowledged and added to the daily routine (Berger, 1991).

Based on the theory of *tabula rasa*, the relationship between parental involvement and adolescent academic mastery has been an area of theoretical and empirical interest for educators and psychologists. Theorizing that parental involvement should be defined as a multidimensional category, Epstein (1995) developed a framework of six categories comprising parental involvement: parenting, communicating, volunteering, learning at home, decision making, and collaborating with the community. Based on this framework, Epstein (1995) suggested that collaboration among students, teachers, and parents would best facilitate student achievement. Such integral collaboration requires parental participation in order for the student to
Parental Involvement and Academic Mastery | Stephanie Brueck, Lauren Mazza, and Alyssa Tousignant

Parental Involvement and Academic Mastery

There is ample research to inform which dimensions of parental involvement are important to consider in predicting academic outcomes. Research conducted by Fan (2001) identified parental aspirations as an additional dimension of parental involvement, with results demonstrating that parental aspirations are the most predictive variable of students’ academic growth. Furthermore, the stability of parental influence on academic development has also been examined. A cross-sectional study, conducted by Strage and Brandt (1999), found a stronger correlation between the support, demands, and autonomy of parents and positive academic orientation of first-year college students, compared to seniors. In a later study, Ratelle, Larose, Guay, and Senécal (2005) concluded that success in a college science program was attributed to feelings of support and competence from parents. Perceived parental involvement was not directly related to persistence in science, but it played an important, indirect role by predicting autonomy in the student. Characteristics of autonomy were also imperative for academic success, showing that parental involvement in a child’s early academic career may actually foster academic independence and self-motivation at more advanced academic levels. Much like parental involvement, academic mastery is a broad term and includes achievement in all academic endeavors, inside and outside of the classroom. Achievement is often measured by GPA, involvement in extra-curricular activities, and self-reported intellectual curiosity. Previous research found that academic achievement based solely on GPA was not related to parental involvement (Fan & Chen, 2001). Such results demonstrate the complexity of academic mastery and suggest the need for several variables to accurately measure this construct.

Previous research conducted at large institutions concluded that a positive relationship exists between parental involvement and academic mastery (Ratelle et al., 2005). The purpose of the current study was to determine if the same positive relationship, between students’ reported parental involvement in high school and academic mastery exhibited in college, applies to the student body at an academically-selective, small, liberal arts college. Furthermore, if the same positive relationship does exist, is the relationship between parental involvement and academic mastery stronger or weaker for liberal arts college students compared to college students at larger institutions? Although the present research is similar to previous studies, the definitions of parental involvement and academic mastery have been constructed from several sources to be most relevant to the sample examined. Within the current study, parental involvement was operationally defined as perceived expectations for school performance, direct reinforcement of improved academic performance, general academic guidance and support, encouragement of communication with teachers, and parental participation with school activities (Keith, Reimers, Fehrmann, Pottebaum, & Aubey, 1986; Fan & Chen, 2001). Academic mastery was operationally defined as students’ confidence in their ability to complete college, degree to which students persist in the face of difficulty or failure, students’ ability to avoid distractions and maintain focus, degree to which students perceive teachers as resources not threats, intellectual curiosity, and overall GPA (Strage & Brandt, 1999). We hypothesized that for the current sample, a positive correlation would be found between parental involvement in high school and academic mastery in college, specifically at the first- and second-year level.

Method

Participants

Participants consisted of 57 first-year students and 20 second-year students attending a small, liberal arts college in the Northeast region of the United States. Students enrolled in introductory biology, economics, psychology, and Spanish classes during the spring semester of 2011 were recruited. No demographic data were collected. Participants were treated in accordance with the “Ethical Principles of Psychologists and Code of Conduct” (American Psychological Association, 2010). The study protocol was approved by the college’s Institutional Review Board (protocol # 1-465-2011).

Measures

Parental involvement during high school and academic mastery in college were measured using the Parental Involvement Project (PIP) Student Questionnaire (Hoover-Dempsey et al., 2002; Appendix A). The 29-item PIP Questionnaire uses a 4-point Likert-type scale ranging from 1 (not at all true) to 4 (very much true).

Participants responded to 17 items in order to report their parents’ level of involvement when the participants were in high school. The category
of parental involvement was measured based on five subscales. The first subscale, perceived expectations, measured parental support on academic work. The direct reinforcement subscale focused on parents who gave positive feedback for persistence in learning. General academic guidance and support measured parental direction and encouragement for a positive attitude in an educational environment. The teacher communication subscale asked about enforcing an open dialogue with teachers for support in the classroom. And the final subscale, parental participation, measured parental attendance at school functions.

Participants were given 10 additional items in order to report the level of academic mastery exhibited during their time in college. The categories of academic mastery were measured based on six subscales. The first subscale, college completion, measured the students’ belief in their ability to graduate in four years. The persistence subscale captured the respondent’s ability to overcome challenges in academia. The next subscale, maintain focus, asked about using strategies to proactively compete schoolwork. Perception of teachers measured student comfort with approaching teachers about academic subjects. Finally, intellectual curiosity measured students’ desire to reach beyond the classroom to learn about their intended field of study.

Two items were included at the end of the questionnaire, asking the participants for their class year and self-reported GPA. Response categories for class year were freshman, sophomore, junior, and senior. GPA was measured with a single question. Students reported cumulative GPA through the Fall 2010 term. GPA and class year were asked at the end of the questionnaire so that students were less likely to infer the hypothesis of the research.

After data collection, items on the questionnaire were grouped into their respective category of parental involvement or academic mastery; only the average of each category was examined. Greater average scores for both variables being measured indicated higher levels of parental involvement and academic mastery.

The original PIP Questionnaire for parental involvement had a reported standardized alpha of .92, whereas the academic mastery component had a reported standardized alpha of .82. The original questionnaire was altered by omitting one item and adding one item. Changes were necessary because certain items were not congruent with the operational definitions for the variables of the present study. Specifically, item 3, “I like to look for more information about school subjects,” was added to the distributed questionnaire so that the reported levels of intellectual curiosity could be measured. This factor was included in the definition of academic mastery. In addition, item 6, “I can work well with other students in my class,” was eliminated post data collection based on a judgment of its face validity; the question did not fit the study’s operational definition of academic mastery (see Appendix). Due to these changes, the original alpha values for both validity and reliability were no longer applicable. The modified questionnaire had an alpha coefficient of .85 for parental involvement and .63 for academic mastery. Although this alpha value is low and poses a risk to detecting significance, it is considered acceptable (George & Mallery, 2003).

Procedure

Questionnaires were distributed to six classes; only one class completed the questionnaire outside of class. The return rate was higher for those questionnaires completed in class (100%) as compared to those completed outside of class (23%). Questionnaires were completely anonymous. There was no identifying or demographic information collected. Consent was given with a check-box; any forms without a checked box were excluded from our study. There was no incentive for participation.

Results

Descriptive analyses were first conducted to calculate the averages of each category that comprised parental involvement during high school (Table 1) and academic mastery in college (Table 2). The category averages were then combined to form the overall averages for the parental involvement and academic mastery variables. A two-sample t test was utilized to determine if a difference existed between first- and second-year students’ means for overall parental involvement, academic mastery, and GPA. No statistically significant difference was observed between first- and second-year students on each of the three t tests performed, t(74) = .71, p = .481; t(74) = 1.36, p = .178; t(74) = .86, p = .390. Therefore, the information for the first- and second-year students was combined in future analyses.

In order to determine the strength of the relationship between parental involvement and academic mastery, a one-tailed Pearson Product Moment correlation was performed. The
relationship between parental involvement in high school and academic mastery in college was found to be significant ($r = .43$, $p < .001$). Parental involvement accounted for 18% of the variance in academic mastery. A correlational analysis between parental involvement in high school and GPA in college was not statistically significant ($r = .03$, $p = .078$). Furthermore, correlational analyses performed between the parental involvement subscales and overall average of the academic mastery categories were also statistically significant (Table 1). The lowest means reported for the subscales comprising parental involvement and academic mastery were guidance and intellectual curiosity, respectively. While the highest means reported within these same subscales were participation and confidence in college completion, respectively (Table 1 & Table 2). Correlational analyses performed between the academic mastery subscales and overall average of the parental involvement categories also demonstrated statistically significant relationships with the exception of intellectual curiosity and GPA (Table 2).

### Discussion

The purpose of the present study was to examine the relationship between parental involvement in high school and academic mastery at the college level. Since this area of research has been studied at larger universities, the applicability to a smaller, liberal arts college became a point of interest for the present study. Results yielded a small, positive relationship between parental involvement and academic mastery: as parental involvement in high school increased, academic mastery in college increased as well. The current study demonstrated a greater correlation than the average correlations found from previous studies conducted at larger institutions (Ratelle et al., 2005). This greater correlation could be attributed to the sample’s fairly homogenous ethnicity and socioeconomic status (SES). According to publicized information regarding enrolled students, minority students account for 10.6% of the student population at Washington & Jefferson College (At a glance, n.d.). Large universities, on the other hand, characteristically have greater ethnic and SES variation in their samples. As hypothesized, and in support of Lockean theory, the academic mastery of the college students in this sample was significantly related to the level of their parents’ involvement during high school. This relationship supports Berger’s (1991) emphasis on the need for consistent parental guidance during an adolescent’s academic development. Parents who actively support their adolescent’s high school education and academic skill development provide a foundation that frames the adolescent’s academic motivation and success as he or she pursues a collegiate education.

Several subscales were chosen to define the category of academic mastery in order to demonstrate the importance of examining multiple variables rather than relying solely on GPA to measure academic achievement. As expected, no statistically significant relationship was found in the present study between parental involvement in

<table>
<thead>
<tr>
<th>TABLE 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Involvement Subscale Averages and Correlations With Overall Academic Mastery</td>
</tr>
<tr>
<td><strong>M</strong></td>
</tr>
<tr>
<td>Expectations</td>
</tr>
<tr>
<td>Reinforcement</td>
</tr>
<tr>
<td>Guidance</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Participation</td>
</tr>
<tr>
<td>Overall</td>
</tr>
</tbody>
</table>

Note. The averages presented are based on the responses of the 4-point Likert-type scale (range 1 to 4) and all correlations are significant at the 0.01 level (1-tailed).

<table>
<thead>
<tr>
<th>TABLE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Mastery Categorical Averages and Correlations With Overall Parental Involvement</td>
</tr>
<tr>
<td><strong>M</strong></td>
</tr>
<tr>
<td>Completion</td>
</tr>
<tr>
<td>Persistence</td>
</tr>
<tr>
<td>Focus</td>
</tr>
<tr>
<td>Teachers</td>
</tr>
<tr>
<td>Intellectual Curiosity</td>
</tr>
<tr>
<td>GPA</td>
</tr>
<tr>
<td>Overall</td>
</tr>
</tbody>
</table>

Note. The averages presented are based on the responses of the 4-point Likert-type scale (range 1 to 4) and all correlations are significant at the 0.01 level (1-tailed).

* $n = 77$. † The category names were shortened for formatting purposes.

* This correlation was not statistically significant.
high school and GPA in college. Previous research has shown that GPA should not be used as the sole indicator of academic mastery (Fan, 2001). GPA may not be the most valid measure of enduring academic achievement since it may be easily skewed by various time-of-measurement factors in the life of a student, such as illness, disruption of the home, and financial hardships. Furthermore, researchers need to be aware that students may misreport their GPA, either intentionally or unintentionally, which would further undermine the validity of GPA as a single variable measurement of academic achievement. Therefore, several subscales comprise the category of academic mastery, and educators and parents can value the need to view academic mastery as multidimensional.

Overall academic mastery is significantly related to parental involvement when all subscales were analyzed together. However, when the subscales were analyzed individually, intellectual curiosity was not significantly related to parental involvement. This may be because this study only included first- and second-year students who may not have a fully developed sense of intellectual curiosity. At this age, students have not necessarily chosen their main interest of study and, therefore, are more likely to be enrolled in introductory general education courses that may not stimulate students’ intellectual curiosity the way in-depth, upper-level courses might (von Stumm, Hell, & Chamorro-Premuzic, 2011). Therefore, intellectual curiosity may not advance in some students until they become more mature learners and have a hunger for knowledge. At the university where data was gathered, students are not required to select a major until the end of their second year. While students in our sample may not have selected a major at the time they responded to the study questionnaires, they still feel confident in their ability to complete college in four years. The culture at this predominantly White, small, residential college promotes a competitive environment in which a four-year completion is a valued standard.

Even though the hypothesis of the present study was supported, certain aspects of this research could be improved. Foremost, the correlational nature of this study does not allow for cause-effect conclusions; a greater amount of parental involvement in high school will not necessarily cause a student to demonstrate higher levels of academic mastery in college. Since this research is correlational, the influence of possible outside unmeasured variables needs to be considered. The sample consisted of participants from predominantly middle to upper-class families, which could allow for attendance in higher achieving school districts, access to greater educational resources, and greater expectations by both the child and the parent of becoming a college-educated professional. According to a representative for the college’s admissions office, only 30% of the students enrolled at the college are first generation college students. The majority are second- or third-generation college students, who have inherently supportive resources (i.e., guidance and monetary funding) from college-educated parents, while the first generation college students may have to forge independent academic and career paths. Since larger university student populations typically represent a greater diversity in family demographic factors, their samples may not face the same potential limitation as the current study. Future research may be able to determine whether a variation in academic mastery exists between first- and second-generation college students. Examining this potential difference could result in increased awareness and implementation of further support to first-generation college students.

A further limitation of the present study was the manipulation of items on the questionnaire, as items needed to be eliminated and added in order to be applicable to the targeted population. One item was added and another was removed, therefore, the original standardized alpha values of the PIP Questionnaire were no longer applicable. New alpha coefficients were found to be lower than the original values, however these coefficients still fall within acceptable levels as an alpha coefficient is deemed unacceptable if less than .60 (George & Mallery, 2003). Although this alpha value is low, it was retained for the purpose of the present study with the understanding that the reliability of the correlation could be affected. Finally, the PIP Questionnaire is a self-report measure, and thus, relied on the participants’ perceived retrospective reports of parental involvement in high school, which may not be accurate.

To address the limitations of this study future research should utilize prospective longitudinal designs. Such an approach could provide more accurate parental involvement scores, as adolescents in high school would be reporting current perceived parental involvement, rather than relying on their memory. Furthermore, a more representative population sample (i.e., from several universities and colleges) would be beneficial to
account for differences in SES, ethnicity, and academic and career goals. The current study aimed to strictly observe the relationship between parental involvement and academic mastery of college students, regardless of gender. Thus, researchers might also want to examine if a difference exists between men and women with regard to parental involvement in high school and academic mastery in college. Women have been observed to have greater communication with their parents and greater motivation to perform well at the college level (Gurian, Henley, & Trueman, 2001). Additionally, researchers could examine the academic mastery of college students within different levels of SES. Assessing each level independently may aid in determining if a possible third variable exists within the parental involvement and academic mastery relationship.

The present study demonstrates that parental involvement could prepare adolescents for success outside of the home, which is supported by Berger (1991), who suggests John Locke’s theory of tabula rasa is applicable to the importance of parental involvement throughout adolescents’ educational development. Teachers and parents can recognize the importance of having a strong rapport regarding the progress of the adolescent in the classroom. In light of this theoretical and empirical work, parents are an invaluable support system in an adolescent’s development of academic mastery. Although parents may feel a diminished value in their role as caregivers as an adolescent matures, the current study demonstrates that their influences reach beyond the immediate future and affect outcomes during important milestones.

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At a glance. (n.d.). Retrieved from https://www.washjeff.edu/glance


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## Parent Involvement and College Experience

On the following questionnaire, please indicate how true these statements are based on a not true to a very true response format:  
1 = not at all  2 = somewhat  3 = quite a bit  4 = very much

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I try to find a place that makes it easier to do my homework</td>
<td></td>
</tr>
<tr>
<td>2. I ask myself questions as I go along to make sure my homework makes sense to me</td>
<td></td>
</tr>
<tr>
<td>3. I like to look for more information about school subjects</td>
<td></td>
</tr>
<tr>
<td>4. I go back over things I do not understand when completing my work</td>
<td></td>
</tr>
<tr>
<td>5. I study my lecture notes after class</td>
<td></td>
</tr>
<tr>
<td>6. I can work well with other students in my class</td>
<td></td>
</tr>
<tr>
<td>7. I find it easy to talk with my teachers</td>
<td></td>
</tr>
<tr>
<td>8. I ask for help from the teacher when I have trouble understanding something</td>
<td></td>
</tr>
<tr>
<td>9. I will be completing my degree in four years</td>
<td></td>
</tr>
<tr>
<td>10. I ask for help from my parents when I have trouble understanding something</td>
<td></td>
</tr>
</tbody>
</table>

On the following questionnaire, please indicate how true these statements are based on a not true to a very true response format:  
1 = not at all  2 = somewhat  3 = quite a bit  4 = very much

<table>
<thead>
<tr>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Taught me ways to make homework fun</td>
<td></td>
</tr>
<tr>
<td>2. Taught me how to find out more about things that interest me</td>
<td></td>
</tr>
<tr>
<td>3. Taught me to have a good attitude about my homework</td>
<td></td>
</tr>
<tr>
<td>4. Taught me to make sure I understand one part before I go on to the next</td>
<td></td>
</tr>
<tr>
<td>5. Helped check my work as I went along</td>
<td></td>
</tr>
<tr>
<td>6. Taught me to keep trying when I got stuck</td>
<td></td>
</tr>
<tr>
<td>7. Taught me to ask questions when I did not understand something</td>
<td></td>
</tr>
<tr>
<td>8. Taught me to talk with the teacher when I had questions</td>
<td></td>
</tr>
<tr>
<td>9. Showed me that he or she liked it when I learn new things</td>
<td></td>
</tr>
<tr>
<td>10. Showed me that he or she liked it when I understood how to solve problems</td>
<td></td>
</tr>
<tr>
<td>11. Showed me that he or she liked it when I found new ways to do my homework when I got stuck</td>
<td></td>
</tr>
<tr>
<td>12. Showed me that he or she liked it when I kept working on my homework even when I did not feel like it</td>
<td></td>
</tr>
<tr>
<td>13. Encouraged me to be aware of how I was doing with my schoolwork</td>
<td></td>
</tr>
<tr>
<td>14. Encouraged me to try new ways to do schoolwork when I was having a hard time</td>
<td></td>
</tr>
<tr>
<td>15. Helped me to understand what I missed if I did poorly on an exam</td>
<td></td>
</tr>
<tr>
<td>16. Attended any extracurricular activities I was involved in (i.e. performance, games, etc.)</td>
<td></td>
</tr>
<tr>
<td>17. Attended parent teacher conferences/open house</td>
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Please circle and write in the following answers as a college student:

- My class year is: Freshman, Sophomore, Junior, or Senior
- My current overall GPA is:

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*This questionnaire is found in the public domain. The authors were notified and approved this reprint.*
In 1991, the Equal Employment Opportunity Commission (EEOC) reported a total of 10,000 sexual harassment (SH) cases in the United States. Ten years later, the number of SH charges increased by almost 50%, breaking the 15,000 mark in 2001 (U.S. EEOC, 2009). Examining the prevalence of SH on university campuses across the United States, Sandler and Shoop (1997) found that between 30% and 40% of female students had experienced some form of SH from faculty and staff members and that 70% to 90% had experienced some form of SH from peers (c.f., Kearney, Rochlen, & King, 2004). Furthermore, a study conducted by the United Nations looking into the occurrence of SH in 11 European countries similarly found that approximately 30% to 50% of women and 10% of men had experienced some form of SH (European Commission, 1998). With instances of SH increasing in schools and workplaces alike, researchers across the globe have focused their studies on identifying the antecedents of SH, the predictors of SH behavior, and the factors that influence attitudes toward SH. The current study focuses on examining the latter construct.

With SH becoming such a common and universal problem in organizational settings, researchers have begun to ask what factors alter SH perceptions and the attitudes associated with those perceptions (SH attitude). Does sexual inequality within an organizational structure allow for these discriminatory acts to occur without punishment? Is SH attitude embedded into certain personality factors? Is SH attitude affected by implicit cognitive constructs? Past researchers have studied some of these questions, examining both external (e.g., SH training) and internal (e.g., personality) factors as predictors of SH attitude.

**External Factors**

Past research has attempted to identify organizational factors that may influence the likelihood of engaging in sexual harassment. Timmerman...
and Bajema (2000) studied the constructs of organizational culture using questionnaires that measured perceived occurrences of SH and the perceptions of social climate, gender equality, and bureaucratic procedures within an organization. The questionnaires evaluated the perceptions of balance between a concern for getting work done with a concern for the individual employee. They found that individuals who perceived the company as having a more employee-oriented rather than job-oriented social climate and a high level of gender equality, perceived fewer instances of SH within the organization and were less likely to engage in SH behavior (Pryor, 1987). This study provided further evidence that external factors, such as organizational culture, have the ability to influence attitude toward SH, as well as predict likelihood to sexually harass.

Examining another external factor, Krings and Facchin (2009) studied the effects of distributive justice within an organization as an influence of SH attitude. They found that individuals who perceived their workplace as distributing work-related duties unfairly among employees were more likely to engage in SH related activities (Pryor, 1987). Although this increased propensity to sexually harass was moderated by personality factors (i.e., neuroticism, agreeableness), the significant relationship between distributive justice and the likelihood to sexually harass identifies distributive justice as another external factor within an organization that has the ability to predict an increase in SH behavior.

Internal Factors
While studies have shown that external factors like social climate and organizational environment play a part in determining SH attitude (Kearney et al., 2004; Krings & Facchin, 2009; Timmerman & Bajema, 2000), researchers also report that internal factors (e.g., personality and gender biases) may also play significant roles in predicting SH attitudes (Kearney et al., 2004; Krings & Facchin, 2009). For example, while Krings and Facchin (2009) found evidence to support that some of the participants’ likelihood to sexually harass was attributed to their perceptions of distributive justice, they also found that two of the Big 5 personality traits (neuroticism and agreeableness) moderated the strength of the relationship.

Kearney et al. (2004) similarly found that an internal factor (i.e., gender role conflict) could significantly alter the strength of an external factor (i.e., SH training exposure) in predicting a change in SH attitude. While SH awareness increased among participants who received SH training, SH attitude was unaffected by the training program. Although SH training was not found to significantly affect SH attitude, the research showed that scores on the success, power, and competition subscales of the Gender Role Conflict Scale (O’Neil, Helms, Gables, David, & Wrightsman, 1986) could more accurately predict a change in SH attitude after training had been administered. These findings suggest that personality factors like perceptions of masculinity and gender role dominance (measured by the Gender Role Conflict Scale) account for more variance in SH attitude than other externally based factors, which was consistent with Krings and Facchin’s (2009) findings. Kearney et al. (2004) concluded that SH attitude may be more related to internal factors like personality and gender role conflict than to other external factors.

Dress Style and Sexualized Perceptions
Although research has not yet evaluated the influence of dress style on SH attitude, dress style has been shown to significantly influence sexualized perceptions of a model. Examining the influence of dress style on impression formation, Cahoon and Edmonds (1989) found that when exposed to two separate pictures of the same model (one provocatively dressed and one conservatively dressed) perceptions of the model changed. Across gender, responses suggested that the provocatively dressed model engaged in more sexual activity, was more promiscuous, and was more likely to be mugged and raped than the same woman dressed in a conservative outfit. Between-gender comparisons also showed that the perception change between models was more drastic for men than for women.

In a similar study, Dill, Brown, and Collins (2008) exposed participants to either (a) images of sex-stereotyped characters from a popular videogame (experimental group) or (b) images of high-powered women in politics (control group). Participants then responded to questions evaluating their tolerance of instances of SH. Findings indicated that individuals who were exposed to the sex-stereotyped videogame images, especially those who were previously familiar with the characters, scored higher on a measure of SH tolerance. Results showed that men exposed to the sex-stereotyped videogame content made judgments that were more tolerant of a real-life instance of SH compared to the control group. This
study showed once again that sexually stereotypical perceptions of an individual can alter SH attitudes and that men’s attitudes change more drastically than women’s.

Prior research has also consistently shown that participant biological sex significantly influences perceptions of a sexualized event. In addition to being more susceptible to the influence of dress style (Cahoon & Edmonds, 1989), studies evaluating attitudes toward date rape and victim-blaming (Mauer & Robinson, 2008) show that men are more likely to attribute a larger amount of responsibility to the victim for its occurrence than women. Similarly, past research by DeSouza and Solberg (2004) found that, in general, women endorsed significantly more severe punishment than men in a scenario of SH. For these reasons, the current study includes biological sex as a major factor in analyzing the influence of gender bias and dress style on attitudes toward SH.

Overview of the Present Study
With evidence from previous research showing that dress style can alter sexualized attitudes toward a model (Cahoon & Edmonds, 1989), the current study investigates dress style as a factor in altering attitudes toward SH. It also evaluates the role of gender bias and biological sex as influential factors of SH attitude, as both have been shown in previous research (Kearney et al., 2004) to significantly influence SH attitude. While past researchers have used explicit (self-report) measures of gender bias (e.g., Gender Role Conflict Scale), the current study uses an implicit measure of gender bias to eliminate social desirability as a limiting factor in measuring the construct. Furthermore, biological sex was evaluated as an influential factor as past research has determined sex as a strong predictor of SH behavior and SH attitude change (Pryor, 1987). It was hypothesized that biological sex, gender bias, and dress style would significantly alter SH attitude and a significant three-way interaction would emerge.

Method
Participants
A convenience sample of 172 liberal arts college undergraduates were recruited through the university research pool and participated as part of a course requirement of introductory level psychology courses. Participant age ranged from 18 to 27 (M = 18.8, SD = 1.2). Sixty-five percent of participants were women (n = 111) and 35% were men (n = 61). A majority of participants (n = 119) identified themselves as White, with Asian individuals comprising the largest minority (n = 24), followed by Black (n = 18), Native Hawaiian/Pacific Islander (n = 3) and American Indian/Alaskan Native (n = 2). The remaining participants declined to identify their race. In regards to ethnicity, the majority of participants identified themselves as being non-Hispanic/Latino (n = 144), while the remaining participants who chose to indicate their ethnicity identified themselves as being of Hispanic/Latino background (n = 24).

Materials
Likelihood to Sexually Harass Scale. The Likelihood to Sexually Harass (LSH) Scale (Pryor, 1987) was used to measure the probability of participants’ engagement in sexually exploitative behavior. This measure represents each participant’s personal attitude toward the SH construct. The LSH Scale presents participants with 10 different social scenarios in which they are asked to imagine themselves as the main character in the situation. Each scenario puts the reader into a position of power and afterwards participants are asked to indicate, on a 5-point Likert scale, the likelihood that they would be willing to use this power to elicit sexual acts from their inferior under these conditions. Although three questions are asked after each scenario, only scores from one question are summed to compose the LSH score. Use in past research has shown that the LSH Scale has high reliability and validity. Pryor (1987) reports Cronbach’s alpha scores that exceed .90 and those who score high on the LSH Scale have been shown to display more sexually exploitative behavior than those who score low on the LSH Scale (Pryor, 1987).

While the LSH Scale was originally created for use among men, Luthar and Luthar (2008) altered the names and sexes of the characters in each scenario to evaluate LSH in women as well. Luthar and Luthar (2008) reported high reliability estimates (α = .97) despite their scale modifications. While this study also altered scenario settings to reflect a more industrial atmosphere, in the current study the LSH Scale has only been changed in relation to the biological sex of the characters. As such, the male-oriented test asks men whether they would take sexual advantage of women with less organizational power and the female-oriented test asks women whether they would take sexual advantage of men with less organizational power. Cronbach’s alpha estimates for the current sample were high.
for both men ($\alpha = .94$) and women ($\alpha = .87$).

**Gender-Career Implicit Association Task.** The Implicit Association Task (IAT; Greenwald, Poehlman, Uhlmann, & Banaji, 2009) was used to measure the gender bias construct in the present study. The IAT is a cognitively based test using response-time software to measure unconscious biases based on the speed at which individuals can perform the task. Research conducted by Greenwald et al. (2009) has shown that, in general, implicit methods have predictive validity equal to that of explicit (self-report) methods of testing and high correlations with explicit methods that measure the same construct.

For the purpose of this study, the Gender-Career IAT was used. The Gender-Career IAT measures a personal cognitive bias association between a given gender and a career-oriented or family-oriented lifestyle. Participants are asked to sort male names (i.e., Ben, John, Daniel, Paul, Jeffrey) and female names (i.e., Julia, Michelle, Anna, Emily, Rebecca) into corresponding career-oriented or family-oriented columns. Then, they are asked to sort family-oriented words (i.e., home, parents, children, family, marriage, wedding, relatives) and career-oriented words (i.e., management, professional, corporation, salary, office, business, career) into male and female columns. Based on the speed at which participants are able to correctly categorize the words, the computer program produces a cognitive bias score in one direction or the other. Categorical scores include: “strong association between male-career,” “moderate association between male-career,” “slight association between male-career,” “no association,” “slight association between female-career,” “moderate association between female-career,” and “strong association between female-career.”

**Dress style images.** Conservative and provocative dress style images were created using Photoshop technology. Images were taken from an online shopping website, and composite images were created to ensure that both images had the same face, expression, and similar body positioning so that outfit choice was the main perceivable difference. Initially three conservative and three provocative outfits were created. Pilot data was collected among 20+ college students as well as five psychology professors to estimate perceptions of promiscuity and conservativeness. The pictures selected for the current study were chosen based on the type of occasion the woman was attending (a holiday work party), as well as perceptions of conservativeness and provocativeness that the outfit evoked, indicated by the pilot data. Participants in the pilot data were shown a picture line-up of the images and asked to rate on a scale from 1 (very conservative) to 5 (very provocative) their perceptions of the dress style. The image with the lowest overall score was used as the conservative image and the image with the highest overall score was used as the provocative image for the current study.

**SH vignette.** A SH vignette was created for this study to represent a realistic instance of SH. An expert on SH from the university’s Equal Opportunity Office was consulted, and the vignette was adapted from a case of SH that she had investigated. She later confirmed that the vignette accurately represented a case of common, workplace SH between a superior man and a subordinate woman (see Appendix A).

**Punishment Scale.** A Punishment Scale was developed for this study to measure participants’ perception of severity of the particular instance of SH presented in the vignette. The Punishment Scale consists of five options involving No Punishment (e.g., “Neither party deserves to be punished as both were intoxicated on the night of the incident”) and five options involving various degrees of Active Punishment (e.g., “Dan should immediately be fired from his position without severance pay”). For each option, participants were asked to score the appropriateness of the punishment on a Likert scale from 1 (I completely disagree with this consequence) to 5 (I completely agree with this consequence). Consultation was similarly sought in creating the Punishment Scale from the university’s Equal Opportunity Office. An expert on SH provided a list of possible punishments (varying in degree of severity) for a potential perpetrator of SH. The Punishment Scale (see Appendix B) was created from this list. The scale was also informed by past research (DeSouza & Solberg, 2004), which suggests that providing participants with varying options of punishment accurately measures perceptions of severity of an instance of SH. A Total Punishment score was calculated by summing the Active Punishment scores with the reverse coded scores on the No Punishment Subscale. On Active Punishment items, high scores indicate strong agreement that a punishment consequence should occur. On No Punishment items, high scores indicate strong disagreement that no punishment should occur. Internal consistency estimates were performed on Total Punishment, Active Punishment, and No Punishment Scales. Results showed
acceptable levels of reliability, such that Cronbach’s alphas were .84, .80, and .74 respectively.

**Procedure**

Using a between-subjects design, participants were randomly assigned to two experimental groups. Approximately half of the participants were shown an image of Stephanie (the main vignette character) in a provocative dress. The other half was shown an image of Stephanie in a conservative dress. Besides the difference in images, all participants performed the same tasks and responded to the same questionnaires.

All participants were tested in small groups (1 to 12 at a time) in a small computer lab. Participants were given individual folders containing: a demographic questionnaire, a copy of the LSH Scale (specific to biological sex), the SH vignette, and the Punishment Scale. Upon completion of the demographic questionnaire and the LSH Scale, the participant’s attention was directed to a large screen where an image of Stephanie was projected. The following script was then read:

> Before we begin the next section, I want to introduce you all to Stephanie. She is a character in the story you are about to read. Please keep this image of Stephanie in mind as you read the story. Look at her facial features, her clothes, and her body language as you will be asked questions about your perceptions of her story once you are done reading it.

Participants were then asked to read the SH vignette and respond to the Punishment Scale. Once all participants had completed their packets, they were instructed to perform the Gender-Career IAT on the computer screen in front of them. Once complete, they were asked to leave their IAT score reports open on the screen in front of them and leave their completed packets at their station. Each participant’s IAT score and dress style group was noted in their completed packets.

**Results**

In preparation for the primary analysis, three separate 2 (sex) x 2 (dress style) x 6 (IAT) analyses of variance (ANOVAs) were run on the dependent variables (Total Punishment, Active Punishment, No Punishment). Results showed no significant three-way interactions, as only the omnibus ANOVA approached significance. These preliminary analyses, however, revealed significant interactions between sex and IAT on the No Punishment Subscale, as well as between sex and dress style on the No Punishment Subscale. These interactions, however, were not found to be significant for the Active Punishment and Total Punishment dependent variables. Based on this finding, the No Punishment Subscale was used as a dependent variable in lower order analyses. Because the No Punishment Subscale was reverse coded in calculating the Total Punishment Scale, high scores indicate strong disagreement with the no punishment consequence and low scores indicate strong agreement with the no punishment consequence.

**Primary Analyses of Punishment**

**The interaction of sex and dress style.** In order to evaluate the interaction of sex and dress style on responses to the No Punishment Scale, a 2 (sex) x 2 (dress style) ANOVA was conducted. This analysis showed that among participants in the provocative dress style group, women scored significantly higher ($M = 22.03, SD = 3.14$) on the No Punishment Scale than men ($M = 19.83, SD = 3.81$), $F(3, 168) = 3.51, p = .017, \eta^2_p = .06$. suggesting that women in the provocative dress style group expressed stronger disagreement than men with no punishment consequences for the harasser (see Table 1). No sex differences for punishment scores were found in the conservative dress style group.

**The interaction of sex and gender bias.** A 2 (sex) x 6 (IAT) ANOVA, conducted on the No Punishment Scale, revealed a significant interaction, $F(10, 160) = 1.90, p = .048, \eta^2_p = .06$. This model showed that among participants with Slight Male-Career associations, women ($M = 22.57, SD = 2.68$) scored significantly higher ($p<.001$) on the No Punishment Scale than men ($M = 18.36, SD = 4.27$), suggesting that women with this type of gender bias more strongly disagree with forms of no punishment for the harasser than men (see Table 2).

Results also suggest that among men, those with Moderate Male-Career biases, No Gender-Career Association, and Moderate Female-Career biases report significantly higher scores ($p<.05$) on the No Punishment Scale than those with Slight Male-Career biases. Likewise, among women, those with Slight Male-Career biases report significantly higher scores ($p = .045$) than women who have No Gender-Career Associations (see Table 2).

**The influence of sex.** Independent sample $t$ tests were run to evaluate biological sex differences
on the Punishment Scales (i.e., No Punishment, Active Punishment and Total Punishment) as well as on each item of the Total Punishment Scale. The initial \( t \) tests revealed that women (\( M = 21.86, \ SD = 3.15 \)) scored significantly higher than men (\( M = 20.46, \ SD = 3.55 \)) on the No Punishment Scale, \( t(170) = .043, \ p < .001 \), however, significant sex differences were not observed for Active and Total Punishment Scales. This finding indicates that women tend to more strongly disagree with no punishment consequences for the harasser across both dress style and IAT groups compared to men. Individual \( t \) tests were then conducted for each item of the Punishment Scale. This analysis revealed that women (\( M = 3.75, \ SD = 1.16 \)) disagreed significantly more than men (\( M = 4.27, \ SD = 0.91 \)) with consequence 2 (“Neither party deserves to be punished as both were intoxicated on the night of the incident”), \( t(170) = -3.21, \ p = .007 \).

The influence of LSH. Pearson’s correlation was used to calculate the relationship between Total Punishment score and LSH score, which suggested a significant negative relationship (\( r = -.29, \ p < .001 \)). This indicates that as the participants’ LSH increased, their agreement with total punishment responses for the harasser decreased. This negative relationship was not only seen in the participant’s Total Punishment score, but also in the Active Punishment score (\( r = -.30, \ p < .001 \)) suggesting that those with higher LSH scores agree less with Active Punishment consequences. No Punishment scores were also found to be negatively correlated with LSH (\( r = -.30, \ p < .001 \)). However, because the No Punishment Scale was reverse coded, this correlation should be interpreted inversely, such that, as participant’s LSH increased, their agreement with no punishment responses increased. In sum, these correlations show that among participants with high LSH, agreement with Total and Active Punishment consequences decreased and agreement with No Punishment consequences increased. While the correlations between Punishment and LSH were found to be significant among all participants, between-sex differences were also evaluated. In all cases, the correlation strength was stronger for men than women in the sample.

Primary Analysis of LSH

The interaction of sex and gender bias. A 2 (sex) x 6 (IAT) ANOVA was conducted on the LSH variable, which revealed a significant interaction, \( F(10, 160) = 5.73, \ p < .001, \eta^2_p = 5.729 \). The model revealed that men in the Strong Male-Career IAT category scored significantly lower than men in the slight male-career bias category on the LSH variable. Further analysis of simple main effects showed that men reported stronger tendencies to sexually harass in moderate male-career, slight male-career and no association categories when compared to women in the same category (see Table 2).

The influence of sex. An independent samples \( t \) test was conducted to evaluate the sex differences in the participant’s likelihood to sexually harass. Because Levene’s Test was violated, the statistic in which equal variances is not assumed was interpreted. The \( t \) test \( t(170) = -2.66, \ p < .001 \), showed that men (\( M = 16.81, \ SD = 8.81 \)) scored significantly lower on the night of the incident”.

\[ r = -0.30, \ p < .001, \]
higher than women (\(M = 10.57, SD = 1.78\)) on the LSH Scale.

**Discussion**

The purpose of this study was to evaluate the influence of biological sex, gender bias, and dress style on attitudes toward SH. It was predicted that these three factors would significantly influence SH attitude (measured by the Punishment Scale), however, results showed that the three-way interaction of these factors only approached significance. Although the primary hypothesis of this study was not supported, results show many interesting differences between sexes in their attitudes toward SH.

First, dress style was examined. Cahoon and Edmonds (1989) found that men’s perceptions were significantly altered by provocative dress style. The current study confirms past findings that perceptions may be significantly altered by provocative dress style (Cahoon & Edmonds, 1989). The current study found that women were less likely than men to agree with No Punishment consequences for the harasser if the victim in the case was provocatively dressed. We can infer from this finding that men and women disagree with consequence severity for SH behavior and men, in particular, base part of their decision on the dress style of the victim.

Secondly, gender bias was examined as an influential factor of SH attitude. Significant differences arose between men and women based on gender bias groupings. Among individuals with slight male-career biases, women more strongly disagreed with no punishment consequences than men in the same instance of SH. Although significant differences were not found in all bias groups, this finding suggests that significant differences do exist and may have been uncovered had there been more participants, greater power, and a more equal distribution among groups. Among men, significant differences in SH attitude were also observed between various gender bias groups. While the expected linear trend did not emerge, the variance shows that gender bias does have an influence on SH attitude for men. It also highlights the fact that gender bias plays a significantly larger role in altering SH attitude for men, as no significant differences were observed between women in various gender bias groupings.

Third, biological sex was examined. Past research by DeSouza and Solberg (2004) found that women endorsed significantly more severe punishment than men in a scenario of SH. The current study’s results are consistent with these past findings, as women were found to disagree more strongly with forms of non-punishment for an offender of SH than men. Specifically, the current study found that in an instance of SH, women were 22% less likely to agree than men that “Neither party deserves to be punished as both were intoxicated on the night of the incident.” Furthermore, responses to this statement (the only punishment option involving alcohol) accounted for the greatest degree of variance in the total No Punishment score, as it was the only item to show a significant response difference between sexes. This suggests that men may perceive intoxication as a legitimate rationalization for SH behavior; a trend that should be examined in future research.

Finally, a negative correlation between LSH and punishment scores was discovered, confirming the significant sex difference found in No Punishment scores. Overall, men scored significantly higher than women on the LSH Scale and, as the correlation indicates, agreed more with No Punishment consequences and less with Active Punishment consequences than women.

Because this study used a convenience sample of primarily 18 to 20-year-old, White college students, these findings are limited in generalizability. While SH occurs in occupational and educational settings alike, they differ in various aspects as well. Because of this, future research may consider using a corporate-employee participant pool to increase ecological validity. Power may have also played a role in preventing the three-way interaction (sex, gender bias, and dress style) from reaching significance, as the crossover created multiple cells of unequal variances. In future research, however, increasing the size of the participant pool may help to equalize cell-size variance.

Future researchers should also consider using other measures of implicit gender bias, as the Gender-Career IAT measures a specific type of bias and is not a measure of overall gender biases. The Gender-Career IAT was selected to evaluate gender bias closely associated with the workplace, however, an IAT designed to evaluate gender biases, including facets beyond a gender association with career (and perhaps with fewer categorical levels) may be a better measure for future research. It is also recommended that the length of the Punishment Scale be increased, such that participants may choose between more options of punishment and no punishment, especially if using subscales as dependent variables. This may increase the
likelihood of finding significant results on the Total and Active Punishment dependent variables, which were not found in this study.

Order effects may have also been a limiting factor in this study. All participants were given the same sequence of questionnaires and surveys and the questions composing these questionnaires and surveys were presented in the same order for each participant. Future research may account for these order effects by randomizing the question sequencing within each survey, particularly the Punishment Scale, as order effects may have influenced participant responses. Future research may also consider randomizing the order that participants respond to entire surveys, as fatigue effects may weigh heavier on later responses. Although the current study placed the IAT at the end of participant tasks, future research may consider placing it at the beginning of the study to diminish possible order, fatigue, and other confounding effects.

Participant sexuality may have also played a limiting role in this study. Items on the LSH (asking participants if they would take sexual advantage of a subordinate of the opposite sex) may not pertain to non-heterosexual participants. Sexual orientation was not included as a demographic question as requested by the institution due to its sensitive nature.

Future research should also evaluate the influence of alcohol more thoroughly, as this was an unexpected finding. The item on the No Punishment Scale involving alcohol (“Neither party deserves to be punished as both were intoxicated on the night of the incident”) accounted for the greatest variance in Punishment Scale responses. For men, the presence of alcohol markedly influenced attitudes toward SH, a concept that should be explored in depth in the future.

Overall, the current study examines a relevant issue in today’s society. It explores the question: Do men and women respond to SH differently? Concluding results show that they do. Men and women’s perceptions are influenced differently by external circumstances, like the presence of alcohol and victim dress-style, and by internal factors, like gender bias. Women disagree that no action should be taken against a sexual harasser with far more certainty than men. Men are resoundingly more lenient toward the harasser, agreeing more with nonpunishing action. Applied in a forensic setting, male jurors may suggest unfairly lenient consequences for a sexual harasser. Applied in an organizational setting, male supervisors may be more likely to allow SH behavior to go unpunished. This study also calls attention to the presence of alcohol at work-related events, as it has been shown to influence men’s attitudes toward an instance of SH. In the case of environmental factors (i.e., dress style, alcohol), these characteristics are important to note with the intent that proper precautions be made to decrease the likelihood of an instance of SH from occurring. However, the more prevalent issue is the attitude-altering effect that these factors have on individuals. While the current study has shown that sex, gender bias, and dress style influence SH attitudes, future research may attempt to answer the question why?

References

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Sex, Gender Bias, Dress Style, and Sexual Harassment | Kyle P. Weber, Lisa M. Bauer, and Tomas E. Martinez

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Appendix A

Please read the account below carefully as you will be asked questions about your perceptions and opinions of the case afterward.

Stephanie was 23 when she got a new job as a secretary for a division of the state government. Two weeks into her new job she received an email notifying her that the annual holiday party would be held that weekend in the office building. When the weekend rolled around, excited to meet some new people, Stephanie got dressed and went to the office party. Stephanie was eager to get better acquainted with her coworkers and supervisors, as she was one of the newest members of the staff and after getting a picture taken at the entrance, she decided to have a drink at the open bar to loosen up. The night was going well and Stephanie felt like she was really integrating well with all of the staff.

Heading back to the bar with her coworker Anne, Stephanie bumped into her supervisor, Dan, who had just ordered a glass of wine. Dan began asking Stephanie if she was enjoying her new position in the office and Stephanie told him that everyone in the office had been very helpful with her transition.

Leaning in so that Anne couldn’t hear, Dan whispered something into Stephanie’s ear that made her noticeably uncomfortable. Her look of shock was quickly noticed by Anne, who then excused herself and Stephanie from the situation.

She walked Stephanie out into the lobby and in private, Stephanie told Anne what Dan had said. As he leaned into Stephanie’s ear, Dan whispered that he had had a crush on her since she had started working for him two weeks ago. Anne was convinced that Dan’s comment was completely innocent, telling Stephanie that Dan had been happily married for 26 years. Being a bright, bubbly woman, Stephanie was used to being hit on by men, and although Dan’s comment caught her off guard, she realized that Anne was probably right and that Dan had probably just been trying to compliment her. Not wanting the encounter to ruin her night, she and Anne decided to go back to the banquet room and share another drink before the bar closed.

Arriving back at the bar, Dan seemed cavalier, sipping his glass of red wine and charmingly chatting with another young intern. As Stephanie and Anne ordered their drink, Dan came up to them again. Realizing that they’re probably had too much to drink, Anne asked if Dan would be willing to drive them home.

The car ride was quiet for the most part, as everyone was tired from the long night. Dan quickly agreed, enthusiastically saying that it would be his pleasure.

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Appendix B

Please circle what type of consequence you think Dan should receive on the 5-point scale below each item

Opinions should range from 1 (I completely DISAGREE with the consequence) to 5 (I completely AGREE with the consequence).

Keep in mind that you may completely agree/disagree with more than one response.

<table>
<thead>
<tr>
<th>1. No action against Dan should be taken as Stephanie was leading him on.</th>
<th>6. Dan should be placed on a 2-week unpaid suspension, to give Stephanie time to process the event.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Neither party deserves to be punished as both were intoxicated on the night of the incident.</th>
<th>7. Upon completion of a full investigation, the Human Resources team should seek legal action against Dan’s behavior.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
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<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Dan should receive an official written warning to be placed in his permanent file.</th>
<th>8. Stephanie’s complaint should be disregarded as Dan probably realizes his actions were inappropriate.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Due to insufficient information, Stephanie’s complaint should be disregarded.</th>
<th>9. Dan should be required to attend an intensive sexual harassment training program.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. The offense should be perceived as a case of mistaken communication and no action should be taken.</th>
<th>10. Dan should immediately be fired from his position without severance pay.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Dissociative Identity Disorder (DID) is a psychiatric disorder that afflicts between 0.4% (Akyüz, Doğan, Şar, Yarıcı, & Tutkun, 1999) and 1.5% (Johnson, Cohen, Kasen, & Brook, 2006) of the general population. Studies show very high rates of depression in patients diagnosed with DID (73-97%; Karadag et al., 2009; Ellason, Ross, & Fuchs, 1996). Depressive symptoms are often associated with self-harm and suicide attempts (American Psychiatric Association [APA], 2000). This relationship is evident in patients with DID, 87% of whom engage in self-harm and 16% in suicidal behavior (Brand, Classen, Lanius et al., 2009). Since relatively little is known about treatment outcomes for patients diagnosed with DID and Dissociative Disorder Not Otherwise Specified (DDNOS), our study focused on outcomes among these patients. Specifically, we examined the relationship between the severity of depression in patients with DID and DDNOS and their levels of self-harm and suicide attempts. We also explored the relationship between the depression severity in patients with DID and DDNOS and their treatment outcome.

**Dissociative Disorders**

According to the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition, text revision* (DSM-IV-TR, APA, 2000), the main characteristic that defines dissociative disorders is a “disruption in the usually integrated functions of the consciousness, memory, identity, or perception of the environment. The disturbance may be sudden or gradual, transient or chronic” (APA, 2000, p. 519). The main forms of
dissociative disorders are dissociative amnesia, dissociative fugue, and dissociative identity disorder. Patients with a dissociative disorder who do not fall into one of these categories but still experience a significant level of dissociative symptoms are given a diagnosis of DDNOS.

According to the DSM IV-TR (APA, 2000), there are four criteria that must be met for a diagnosis of DID. The first and most essential criterion is the existence of two or more distinct “identities” or personality states. The second is that these states must repeatedly take control of behavior. The third criterion is that the patient must be unable to remember important personal information. These memory gaps must be too large to be explained by ordinary forgetfulness. Finally, the disturbance must not be due to the direct physiological effects of a substance or a general medical condition. Some patients diagnosed with DDNOS have symptoms very similar to those of DID but are missing certain criteria which preclude DID as a diagnosis. For instance, patients who do not have amnesia for important personal information but have multiple personality states that take control of their behavior are often diagnosed with DDNOS (APA, 2000).

Depression and Self-Harm
According to the DSM-IV-TR, central features of major depression include suicide attempts and self-harm (APA, 2000). Self-harm can be defined as intentionally injuring oneself without any intention of dying (Tuisku et al., 2009). Major depression is the most common psychiatric disorder among patients who self-harm (Haw, Hawton, Houston, & Townsend, 2001; Skegg, 2005). Skegg (2005) found that among adolescent patients who self-harm, the most common reason given as to why was depression.

Though it is well known that major depression can be marked by suicidality and self-harm, no study has explored the relationship between depression severity and the level of suicidality and self-harm in patients with DID and DDNOS. If there is a significant correlation between these factors, therapists could consider this relationship when deciding on treatment plans for their patients, adjusting their plans based on depression severity.

Moderators of Treatment Outcome
Although researchers have not yet studied whether depression severity is related to treatment outcome in dissociative disorders, previous studies have found that depression severity is related to treatment outcome in other psychiatric disorders (Blom et al., 2007; Conradi, de Jonge, & Ormel, 2008; Driessen, Cuipers, Hollon, & Dekker, 2010; Katon, Unützer, & Russo, 2010). One such study conducted by Katon and colleagues (2010) found that more severe depressive symptoms at intake was a significant predictor for continued severe depression at the end of treatment. Contrary to Katon et al.’s findings, Driessen and colleagues (2010) found that more severe initial depression severity was related to increased improvement following treatment. Nonetheless, the majority of research reviewed (Blom et al., 2007; Conradi et al., 2008; Katon et al., 2010) found that higher depression severity was related to poorer treatment outcome. These results show that severity of depression can be a significant predictor for treatment outcome in psychiatric disorders. Though research has found a significant relationship between depression and dissociation, no research has investigated whether the level of depression in patients suffering from a dissociative disorder influences treatment outcome.

Age and gender are two additional factors that are commonly associated with treatment outcome. Prior studies have found that age and gender can influence treatment outcome in many disorders including substance abuse and attention-deficit/hyperactivity disorder (Satre, Blow, Chi, & Weisner, 2007; Weiss et al., 2010). However, no study has examined whether these factors influence treatment outcome in dissociative disorders.

Measures of Treatment Outcome
Comorbid psychiatric disorders and behavioral problems such as self-destructive and suicidal behaviors are very common in patients with DID. In the TOP DD study, Brand, Classen, Lanius et al. (2009) found that patients with DID suffer from high rates of posttraumatic stress disorder (PTSD), mood disorders, and substance abuse disorder. They also found that patients with DID tend to have behavioral problems. For instance, they found that in the past 30 days, 69% of patients had reported having acted very impulsively and 35% reported having done something dangerous enough to kill themselves (excluding suicide attempts; Brand et al., 2009). Assessing the level of the symptoms associated with comorbid disorders and behavioral problems over the course of treatment provides important information about treatment outcome.

Treatment of DID
There are two main categories of treatment
for DID. Primary treatments include a variety of psychotherapy models including cognitive-behavioral approaches (International Society for the Study of Trauma and Dissociation [ISSTD], 2011; Maldonado & Spiegel, 2007). Psychotherapy used to treat DID and DDNOS relies on a long-term, carefully paced treatment that includes three stages aimed at symptom management and safety stabilization, gradual processing of traumatic memories, increasing ability to tolerate emotions and traumatic material without relying on dissociation, and increased integration among personality states. While the integration of personality states can be achieved in many patients, improved adaptive functioning is the most important goal of treatment. Most techniques that experts recognize as being effective in treating DID and DDNOS attempt to treat the symptoms of dissociation and comorbid posttraumatic stress disorder (ISSTD, 2011; Maldonado & Spiegel, 2007). Additionally, psychopharmacology is used as an important adjunctive treatment. Medication can be used to alleviate some of the symptoms associated with DID including depression and PTSD symptoms, although there is no medication which specifically targets dissociation (ISSTD, 2011; Maldonado & Spiegel, 2007). Due to the difficulties with conducting rigorous research over long-term treatment, there has been no extensive investigation of the effectiveness of DID and DDNOS treatments. Improving our understanding of DID and DDNOS, especially in regards to treatment outcome, is an important step toward improving the effectiveness of these treatments.

Current Study
The current study was part of a larger study of treatment outcomes for patients with DID and DDNOS conducted by Brand, Classen, Lanius et al. (2009; Brand et al., 2012). The present study examined the response of these patients to 30 months of community-based psychotherapy treatment. Among patients in the larger study, those in the later stages of treatment exhibited significant improvement on a number of adaptive and symptom measures. This included reduction in the amount of self-harm and number of hospitalizations, as well as higher levels of adaptive functioning than patients in earlier stages of treatment (Brand, Classen, Lanius et al., 2009; Brand et al., 2012). Brand and colleagues concluded that these results suggest that treatment for DID may be helpful and should be further researched.

Learning about the potential moderators of treatment outcome for DID, such as comorbid disorders, is important because this information will provide guidance to clinicians regarding how to treat their patients more effectively. There are also important considerations for public policy. In Massachusetts, patients with DID have been found to have the highest psychiatric costs of any patients eligible to receive psychiatric disability payments (van der Kolk, 2008). Thus, increased understanding of the effectiveness of treatments for DID could lead to improvements in treatment effectiveness and significant economic benefits (Brand, Classen, McNary, & Zaveri, 2009).

The first goal of the current study was to examine the relationship between depression and levels of self-harm and suicide attempts in patients with DID and DDNOS. Patients with a dissociative disorder who suffered from severe depression were expected to engage in self-harm and suicide attempts more frequently than patients with milder depression. The second goal of the study was to examine the relationship between depression severity and treatment outcome in patients with DID and DDNOS. Patients with severe depression were expected on average to improve less over time than patients with mild depression. Specifically, severely depressed patients were hypothesized to show less improvement from intake to the 30-month follow-up on measures of dissociation, PTSD, overall psychiatric distress, self-harm, suicide attempts, and hospitalizations, as well as on measures of adaptive functioning such as the number of days patients worked for pay, worked without pay (e.g., volunteering) or attended school, used techniques to manage their symptoms, felt good feelings such as happiness, or participated in social activities.

Methods
The current study used data gathered by Brand, Classen, Lanius et al. (2009), and the description of the methods used in this study is a summary of their methods. Brand and colleagues agreed to allow their data to be used in the current study. This current study used data from two time points. The first time point (Time 1) was when the patients were enrolled in the study and the second time point (Time 4) was gathered at the conclusion of the study 30 months later. Brand and colleagues gathered data a total of four different times. However, the goal of the present study was to examine the overall change in patient outcomes,
so only data from the beginning and end of the study were used for the present study.

**Participants**

The participants were 280 patients at Time 1 and 131 patients at Time 4. Therapists were recruited from the membership registers of the ISSTD, from a list of the therapists who graduated from the ISSTD’s Dissociative Disorder Psychotherapy Training Program (DDPTP), and from electronic mailing lists (i.e., listservs) for mental health professionals (Brand, Classen, Lanius et al., 2009). These listservs focused on psychoanalysis, dialectical behavioral therapy, and trauma-focused therapy. The emails inviting the therapists’ participation described the study as a dissociative disorder treatment outcome study. Other methods of recruiting therapists included (a) telephone calls to graduates of the DDPTP and (b) asking therapists to forward the email invitation to others who were treating dissociative disorders and might agree to participate. No response rate could be determined because it was impossible to know how many of the emails were received and read by the therapists. During the time therapists were being recruited for the study, ISSTD had approximately 1,300 members, and close to 700 therapists had graduated from the DDPTP. However, only 100 of the most recent graduates of the training program had been asked to list their email addresses. Dozens of email invitations sent to members of the ISSTD and to graduates of the DDPTP were not received by the intended recipient. In addition, around 20 therapists were not treating any patients with a dissociative disorder at that time.

In order to participate in the study, therapists had to currently be treating at least one adult patient with DID or DDNOS for at least three months. Patients with DID and DDNOS were included in the study because they are believed to be very similar in terms of their symptoms, phenomenology, and treatment. Therapists who were not treating an adult with DID or DDNOS or were not able to read English were excluded from the study. Therapists were asked to invite one patient from their caseload to participate. Therapists were not given guidelines for how to select a patient, other than an explanation of the qualifications required for the study. The patients had to be at least 18 years old and able to read English. Patients were not excluded based on substance use, eating disorders, active suicidality, psychosis, recent hospitalization or hospitalization during the study, or any other type of acuity or comorbidity. Allowing almost anyone with DID or DDNOS to participate improved the generalizability of the results and provided a more rigorous assessment of treatment’s impact on dissociative patients’ symptoms and functioning.

In order to facilitate therapists’ participation and reduce the possibility of data loss through postal mail, therapists completed their surveys on a password-protected website. This methodology and the therapist measures were modified from one used in a naturalistic community study of borderline personality disorder that found no significant differences between responses gathered using the Internet compared to those gathered using paper surveys (Conklin & Westen, 2005). In order to protect patient confidentiality and enlist an increased number of patient participants, the patient measures were sent through postal mail to the therapists’ work addresses. The therapists gave the measures to their patients, who then completed them outside of session. Responses were not shared with their therapist. Pre-addressed stamped envelopes were supplied to patients living in the United States, while patients outside the United States paid for postage themselves. Patient and therapist surveys were assigned code numbers so they could be linked to each other. No compensation was provided to therapists or patients for participating. The study received IRB approval from Towson University and Sheppard Pratt Health System. All participants gave informed consent.

Of the 292 therapists who initially agreed to participate in the study, 74% practiced in the United States, 8% practiced in Canada, and 18% practiced in other countries (i.e., Argentina, Australia, Belgium, Brazil, Finland, Germany, Israel, Netherlands, New Zealand, Norway, Scotland, Singapore, Slovakia, South Africa, Spain, Taiwan, United Kingdom). Therapists from the United States were located in 37 states. Therapists from Canada were from 5 provinces. Additional therapist characteristics can be found in Table 1.

Therapists provided information on the patient whom they invited to participate. Although many of the therapists stated that they had a significant amount of experience treating patients with DD, 34.4% of the participating therapists reported only having treated three or fewer patients with DID during their career. Two patients identified by their therapists decided not to participate in the study, two therapists chose not to ask a patient to participate, and thirty-two patients who decided
to participate did not return the Time 1 surveys. At Time 1, 4% of patients had not graduated from high school, 17% had graduated from high school, and 78% had some college education. In addition, 94% were women, 5% men, and 1% transgender. The average age of the patients was 43.7 (SD = 10.7).

Patients in this study also suffered a high rate of comorbidity with other psychiatric disorders. Brand, Classen, Lanius et al. (2009) found PTSD in 89% of the patients, mood disorders in 83%, substance abuse disorder in 22%, and somatoform disorder in 22%. Little is known about whether these comorbid disorders affect the treatment outcome of DID and DDNOS patients.

The most common treatment patients in this study received, other than individual therapy, was medication (n = 222, 80% of sample). The most common form of medication was antidepressants (n = 209, 76% of sample) followed by anxiolytics (n = 202, 74% of sample). On average patients had been in treatment for 5 years with their current therapist at Time 1 (n = 220, SD = 4.1) and had, on average, been officially diagnosed for 6.8 years (n = 223, SD = 5.3).

### Patient Measures

#### Depression severity

Depression severity was measured using the depression subscale of the Symptom Checklist 90-Revised (SCL-90-R; Derogatis, 1994). The SCL-90-R is comprised of 90 items which are divided into nine subscales. These scales include: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, anger-hostility, phobic anxiety, paranoid ideation, and psychoticism. Items were rated on a 5-point Likert-type scale of symptom distress, ranging from 0 (not at all) to 4 (extremely). The measure has good internal consistency (alpha coefficients .77 to .90), good test-retest reliability, and good construct, discriminant, and concurrent validity (Boleloucky & Horvath, 1974; Derogatis, Rickels, & Rock, 1976). The average score for the 90 items, also known as the Global Severity Index (GSI), is a measure of overall psychiatric distress and has established reliability and validity. Dissociative disorder patients ordinarily have a higher GSI than other psychiatric outpatients and inpatients (Ellason & Ross, 2004; Steinberg, Barry, Sholomskas, & Hall, 2005). Cronbach’s alpha calculated on this sample at Time 1 for the GSI was .96 and was .88 for the depression subscale. In addition, a study by Angst and Dobler-Mikola (1984) used the SCL-90-R depression subscale to discriminate between three different groups of depressed patients according to the frequency and duration of episodes. These results show that the SCL-90-R depression subscale is sensitive to depression severity.

#### Behavioral problems and adaptive behaviors

Behavioral problems and adaptive behaviors common in patients with DID were assessed using a behavioral checklist. This checklist was made up of questions adapted from the list used in the National Health and Nutrition Examination Survey (National Center for Health Statistics, 2006). In these questions, patients indicated on how many of the past 30 days they had engaged in dangerous and destructive behaviors such as self-harmful behavior, suicide attempts, behaviors that could result in death, use of alcohol or drugs, and other “reckless” behaviors. Additionally, patients reported on how many of the past 30 days they

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**Table 1**

<table>
<thead>
<tr>
<th>Therapist Characteristics</th>
<th>%</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
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<tbody>
<tr>
<td>Therapist Gender (N = 292)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>75</td>
<td>223</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>Therapist Orientation (N = 292)</td>
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<td>Private practice</td>
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<tr>
<td>Outpatient clinic</td>
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<td>Other</td>
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<tr>
<td>Therapist Experience (N = 285)</td>
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<tr>
<td>Years in practice</td>
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<td>285</td>
<td>21.8</td>
<td>9.6</td>
<td>3</td>
<td>33</td>
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<tr>
<td>Years treating DD</td>
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<td>284</td>
<td>12.8</td>
<td>7.6</td>
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<td>41</td>
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<td>DID patients integrated</td>
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<td>282</td>
<td>03.9</td>
<td>9.1</td>
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<td>75</td>
</tr>
</tbody>
</table>

*Note: Therapist characteristics taken from Brand, Classen, Lanius et al. (2009).*
had engaged in adaptive behaviors. Sample items included: “On how many of the PAST 30 DAYS did you do something very impulsive (spending sprees, lost your temper and really shouted at someone, threatened to or actually harmed someone else, driven too fast, done anything against the law, etc.),” “On how many of the PAST 30 DAYS did you attempt suicide,” “On how many of the PAST 30 DAYS have you participated in social activities such as visiting friends, attending clubs or meetings, or going to parties (not including therapy activities),” “How many times in the PAST 30 DAYS have you done something that, in retrospect, was dangerous enough to kill you,” and “On how many of the PAST 30 DAYS did you drink alcohol?” The “alcohol use” variable refers to any time the patient consumed alcohol, regardless of amount. The “dangerous behaviors” variable corresponds to actions in which death was a possibility, but not when the patient was deliberately attempting to commit suicide. The “social activities” variable includes activities such as visiting friends, attending clubs, and going to parties.

Dissociation. Dissociation was measured using the Dissociative Experiences Scale–II (DES-II; Bernstein & Putnam, 1986). The DES-II is a widely used, 28-item, self-report measure that assesses dissociative experiences. In a meta-analysis, van Ijzendoorn and Schuengel (1996) found that the DES-II had a test-retest reliability of .78 to .93, an internal reliability (alpha) of .93, and a convergent validity (r) of .67 with other dissociative experience measures and diagnostic interviews. Overall DES-II scores range from 0 to 100. An average score of 30 is often used as a cutoff point for suggesting the possibility that a patient has a dissociative disorder. Cronbach’s alpha calculated on the Time 1 sample for this measure was .95.

Posttraumatic stress disorder. PTSD was one of the outcome measures for this study because many patients with DID have comorbid PTSD as well. PTSD was measured using the Posttraumatic Stress Checklist–Civilian (PCL-C; Weathers, Litz, Huska, & Keane, 1994). The PCL-C is a 17-item measure of the symptoms and severity of PTSD. Specifically, the measure examines three criteria of the DSM-IV-TR including criteria B (reexperiencing), C (avoidance and numbing), and D (increased arousal) (APA, 2000). Patients rated the degree to which symptoms have bothered them in the past month. This measure uses a 5-point Likert-type scale (1 not at all to 5 extremely). The total score for the measure is calculated by adding all of the items together. A total score of 50 is the minimum score consistent with a diagnosis of PTSD. Overall PCL-C scores range from 17 to 85. Test-retest reliability for this measure is .96 with an interval between the tests of two to three days (Weathers et al., 1994). Some research has shown the overall diagnostic efficiency to be as high as .90. Cronbach’s alpha measured on this sample at Time 1 for this measure was .89.

**Results**

Due to the importance of not overlooking significant findings in this study, significance levels were not Bonferroni-adjusted to correct for Type I error inflation. Analyses were conducted using Statistical Package for the Social Sciences 17 (SPSS 17). The first hypothesis stated that greater severity in depression symptomatology would be related to higher rates of self-harm and suicide attempts. This question was answered by using Pearson’s r correlation for self-harm, suicide attempts, and depression severity. Analyses found a statistically significant positive correlation between depression severity and self-harm (r = .24, p < .001). There was also a significant positive correlation between depression and suicide attempts (r = .15, p = .02). Patients with more severe depression tended to self-harm and attempt suicide more often than patients with less severe depression.

The second hypothesis stated that patients with DID or DDNOS who exhibited greater initial depressive severity scores would display less improvement after 30 months of treatment than patients with lower severity scores. This hypothesis was analyzed using hierarchical regression and logistic regression analyses. Hierarchical regression was used to analyze continuous outcome measures, and logistic regression was used to analyze dichotomous outcome measures, controlling for the age and gender of the patient. Age and gender can be factors in treatment outcome, so it was important to ensure that they were not mediating factors in these models. The change scores of these outcome measures were the dependent variables, while Time 1, depression severity, age, and gender were the independent variables. Within the models, age and gender were entered first in order to ensure that depression was significant above and beyond any possible age or gender effects; depression was entered second. Change scores were created for the outcome measures in order to assess the change in the patients’ symptoms and adaptive behaviors. Change scores were made using the equation: Time 1 PCL Sum–Time 4 PCL Sum.
Descriptive statistics for the second hypothesis' significant results can be found in Table 2, while Tables 3-7 detail the significant results from the regression analyses. There was a significant relationship between depression and the change in the number of impulsive actions ($R^2 = .039$, $p = .045$). Greater depression severity was related to less improvement in impulsive actions. Contrary to our expectations, more severe depression was related to larger reductions in the number of suicide attempts (dichotomized; $p = .04$) and increased involvement in social activities ($R^2 = .053$, $p = .02$) by Time 4. Beta was negative in the social activities model because the relationship was between depression and a change score of Time 1 social activities. Time 4 social activities and improvements in social activity involvement leads to a negative change score. Age and gender were not statistically significant within any of these models, suggesting that neither factor significantly affects treatment outcome.

Although not statistically significant, the change in the number of dangerous behaviors and the change in the amount of alcohol consumed trended toward significance, with more severe depression being related to greater improvement. Depression severity was not associated with either greater or reduced improvement in dissociation, PTSD symptoms, general distress, self-harm, drug use, bodily pain, excessive time in bed (number of days with at least 10 hours in bed), psychological or medical interference with daily activities, inpatient or outpatient hospitalization, number of days working for pay, number of non-paid work days, use of symptom management techniques (e.g., containment and grounding), and positive feelings (e.g., happiness, contentment, and joy).

### Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time 1 M</th>
<th>Time 1 SD</th>
<th>Time 4 M</th>
<th>Time 4 SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulsive Actions</td>
<td>4.71</td>
<td>8.39</td>
<td>3.08</td>
<td>5.89</td>
</tr>
<tr>
<td>Suicide Attempts</td>
<td>0.16</td>
<td>0.67</td>
<td>0.08</td>
<td>0.51</td>
</tr>
<tr>
<td>Social Activities</td>
<td>7.06</td>
<td>7.21</td>
<td>7.46</td>
<td>7.48</td>
</tr>
<tr>
<td>Dangerous Behavior</td>
<td>1.29</td>
<td>2.75</td>
<td>0.55</td>
<td>1.78</td>
</tr>
<tr>
<td>Alcohol Use</td>
<td>3.15</td>
<td>6.37</td>
<td>2.88</td>
<td>5.53</td>
</tr>
</tbody>
</table>

*Note: Variables are based on the reported number of days in the past month patients had engaged in these behaviors.*

### Table 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>OR</th>
<th>95% CI</th>
<th>Wald statistic</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.2</td>
<td>.04</td>
<td>.98</td>
<td>[0.90, 1.06]</td>
<td>0.00</td>
<td>.59</td>
</tr>
<tr>
<td>Gender</td>
<td>-16.57</td>
<td>12951.80</td>
<td>.000</td>
<td>-</td>
<td>.30</td>
<td>.99</td>
</tr>
<tr>
<td>Depression</td>
<td>1.75</td>
<td>.87</td>
<td>5.76</td>
<td>[1.05, 1.40]</td>
<td>4.09</td>
<td>.04</td>
</tr>
</tbody>
</table>

*Note: Logistic regression analysis controlling for demographic variables with depression as the main independent variable and the number of suicide attempts (dichotomized) in the past 30 days as the dependent variable. CI = confidence interval for odds ratio (OR).*

**Discussion**

As predicted, we found that patients with DID or DDNOS who suffer from more severe depression also tended to self-harm and attempt suicide more often. This finding is consistent with a similar relationship between clinical depression, self-harm, and suicide attempts in the general population (APA, 2000; Skegg, 2005). This suggests the possibility that targeting the symptoms of depression in patients with DID or DDNOS may reduce the number of times they self-harm or attempt suicide. Future research can explore this possibility.

The prediction that patients with more severe initial depression would show decreased improvement compared to less severely depressed patients was only partially supported. Depression severity had varied effects depending on the outcome. More severe initial depression was related to decreased improvement in the number of impulsive actions committed by patients. In contrast, several other outcome measures showed that greater improvement occurred in the most depressed patients. In this sample, more severe depression was associated with a greater reduction in suicide attempts as well as greater involvement in social activities over 30 months of treatment. There were also statistically nonsignificant trends for more severely depressed patients to display greater reductions in alcohol use and dangerous behaviors.

Although statistically significant, depression severity accounted for a relatively small portion of the variance in treatment outcome. For example, initial depression severity accounted for 3.9% ($R^2 = .039$) of the variance in change in impulsive actions and 5.3% ($R^2 = .053$) of the variance in change in social activity involvement. Other comorbid disorders, individual patient differences, differences in treatment, and many
other variables likely accounted for additional treatment outcome variance, although these factors were not examined.

One possible explanation for why more severely depressed patients improved more over time than less severely depressed patients is that nonspecific treatment factors, such as the therapeutic alliance and the passage of time, may have been sufficient to obtain an effect in patients with less severe depression, whereas the full effect of intensive, longer treatment (i.e., therapy and medication) may be needed to produce an improvement in the most severely depressed of the dissociative patients (Driessen et al., 2010). This explanation is in line with findings regarding antidepressant medication, where researchers have found that, at low levels of depression, drug treatment is only slightly more efficacious than a placebo. However, the more severe the depression becomes, the greater the advantage of the medication over a placebo (Fournier et al., 2010).

There were a number of design issues in the Brand, Classen, Lanius et al. (2009; Brand et al., 2012) study that limit the interpretation and generalizability of the results. Recruitment methods may have introduced bias. Many of the participating therapists were members of the ISSTD who had completed a dissociative disorder psychotherapy training program or were recruited through listservs for mental health professionals. Overall, the therapists may have been more highly motivated, well-trained, and experienced in treating dissociative disorders than typical outpatient therapists, and therefore potentially not representative of therapists treating patients with DID. Additionally, the patients were selected by their therapists for this study, so the patient participants may have been healthier or more motivated than is typical. Further, the lack of a control group limits the possible interpretations that can be made of the results. It is possible that the changes would have occurred in the patients without treatment, or that other variables may be partially responsible for the changes.

In spite of these limitations, the results from this study are informative and useful in the overall goal of expanding the knowledge base about treating DID/DDNOS, because there were very few exclusion criteria compared to other treatment outcome studies. A randomized treatment outcome study of DID patients in treatment compared to a DID control group would provide a more rigorous test of depression severity’s effect on treatment outcome. Additionally, future studies should attempt to recruit patients who are randomly selected from therapists’ caseloads. Future research should investigate the significance of other factors that may influence treatment outcome including...
other comorbid disorders, individual patient differences, and the differential effectiveness of the various forms of treatment.

This study found that the strong positive relationship between depression severity, self-harm, and suicide attempts that occurs in the general population is also present in severely dissociative patients. Patients with DID or DDNOS, who also suffered from severe depression, tended to display equal or greater improvement after 30 months of treatment when compared to less severely depressed patients. Severe depression was only associated with a worse outcome in the area of impulsive behaviors. This suggests that treatment may be at least as effective, or in some areas, even more effective, for severely depressed patients with DID or DDNOS than it is for less severely depressed DID/DDNOS patients.

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Effect of Depression in Dissociative Disorder Patients | Jeremy C. Engelberg and Bethany L. Brand


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The data used in this study was part of a larger study called the Treatment of Patients with Dissociative Disorders (TOP DD) study by Brand, Classen, Lanius et al., (2009) with consent of the authors. Funding for the TOP DD study came from an anonymous contribution made to Sheppard Pratt Health Systems’ Trauma Disorders Program and grants from the Constantinidas Family Foundation, Towson University, and the University of Western Ontario. Portions of these data were presented at the annual conference of the International Society for the Study of Trauma and Dissociation in Montreal, Canada, 2011; and at the Colonial Academic Alliance Undergraduate Research Conference at Hofstra University, New York, 2011.

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Effect of Family Configuration on Preadolescents’ Decision-Making Competence

Fan Yang
University of Iowa

ABSTRACT. Decision-making competence (DMC) is a construct above and beyond general intelligence which depicts people’s competency in making effective decisions (Parker & Fischhoff, 2005). The present study investigated the relationship between DMC scores and the family configuration of 10-year-old preadolescents \((N = 97)\). The family configuration factors of interest were birth order, family size, sibling spacing, and sibling sex composition, which should relate to individual differences in general intelligence, according to previous research. The final results suggested that only family size \((p = .02)\) and the sex of the closest sibling \((p = .04)\) were significant predictors of preadolescents’ decision-making abilities. Although some findings contradict those in general intelligence research, the key results align with the confluence model for intellectual growth (Zajonc & Markus, 1975). Implications for the current work and directions for future research were discussed to drive further progress on this research topic.

Intelligence as an important element of mental ability has been a major focus of developmental research for decades. As part of the nature/nurture debate, the influence of familial factors on human intellectual development is one of the most researched topics in the field. Researchers (Breland, 1974; Zajonc, 1976; Zajonc & Mullally, 1997) have found that family configuration factors such as birth order, family size, and sibling spacing are associated with human intelligence. The purpose of the present study is to find out how these family configuration factors affect the decision-making competence of preadolescents.

Birth Order and Intelligence
Previous studies suggested an interesting relationship between birth order and human intelligence. For example, Zajonc and Mullally (1997) found that children born first in families tend to have higher Scholastic Aptitude Test (SAT) scores than children born later into the family, even though older siblings were less linguistically competent than younger siblings before the age of 11±2 (Zajonc, 2001). Zajonc and Markus (1975) explained this finding using the confluence model of intellectual development.

According to the confluence model, the intellectual environment in which each child develops changes over time. The model quantifies intellectual environment by averaging the intellectual level of each family member. Within each family, the addition of younger siblings dilutes the intellectual level of early-born children because they are joined by siblings with lower intellectual levels. For example, if a first-born child becomes a sibling at the age of four, his or her own intellectual environment would dilute. However, when the younger sibling reaches the age of four, this later-born child would have a more mature 8-year-old sibling, which increases the level

Faculty mentor: Irwin P. Levin
Family Configuration and Preadolescents’ Decision-Making

Fan Yang

Family Size and Intelligence
Similarly, cross-cultural studies showed that intellectual level generally declines with family size. In a study by Brelend (1974) in the US, the scores of 800,000 participants on the National Merit Scholarship Qualification Test decreased with an increase in family size. Another study on 70,000 11-year-olds in Scotland found that children’s performance on the Stanford-Binet intelligence test declined significantly as family size increased (Zajonc, 1976). Based on the confluence model, larger family size is usually associated with a more diluted intellectual environment (Zajonc & Markus, 1975). Therefore, people from larger families tend to perform worse on intelligence tests.

Sibling Spacing and Intelligence
Despite the well-documented effects of birth order and family size on intelligence, the association can be mediated by the age intervals between siblings. For example, children with larger sibling age gaps scored four points higher on the Stanford-Binet than those who were spaced closer to their siblings (Zajonc, 1976). According to the confluence model, widely spaced siblings are more likely to be born into a more mature intellectual environment and enjoy the undiluted family resources for a longer period of time, which enables them to achieve faster intellectual growth despite their birth order and family size.

Sibling Sex Composition and Intelligence
Another variable that may have certain impact on human intelligence is the sibling sex composition. Researchers have suggested that the sex of the closest sibling influences children’s perception of parental treatment. For example, Kidwell (1981) found in a national sample of over 1,700 adolescent boys that they tended to perceive parental behaviors as more punitive when their closest siblings were girls. According to Kidwell, growing up witnessing the extra care and patience parents offered to female siblings biased males’ perceptions of their own relationship with their parents. Zajonc (1976) stated in his study of family configuration and intelligence that social interaction plays a significant role in the intellectual development of family members. Particularly, children’s interaction with their parents can affect their intellectual growth. Therefore, parent-child relationships as a form of social interactions within a family could have a certain impact on human intelligence.

Decision-Making Competence
Knowing that birth order, family size and sibling spacing relate with several facets of general intelligence, it is worth researching whether similar relations exist for other psychological constructs. Decision-making competence (DMC) as a newly operationalized construct is the focus of the present study.

Researchers recently identified DMC as a cognitive competency, distinct from general intelligence, that specifically captures people’s ability to make normatively correct decisions (Bruine de Bruin, Parker & Fischhoff, 2007; Parker & Fischhoff, 2005). In their research regarding DMC in adults, Parker and Fischhoff (2005) conducted factor analysis and found that DMC as a higher-order latent variable can effectively predict adults’ performance across seven decision-making tasks. Previous literature suggested that decision-making processes reflect four fundamental skills: assessing beliefs, assessing values, combining beliefs and values in order

Table 1

<table>
<thead>
<tr>
<th>The Seven DMC Component Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Consistency in risk perception</td>
</tr>
<tr>
<td>Recognizing social norms</td>
</tr>
<tr>
<td>Resistance to sunk costs</td>
</tr>
<tr>
<td>Resistance to framing</td>
</tr>
<tr>
<td>Applying decision rules</td>
</tr>
<tr>
<td>Path independence</td>
</tr>
<tr>
<td>Under/overconfidence</td>
</tr>
</tbody>
</table>

Note: BA=Belief Assessment; VA=Value Assessment; INT=Integration; MC=Metacognition. Adapted from “Assessment of decision-making competence in preadolescence” (Weller et al., 2012).
to identify choices, and having a meta-cognitive understanding of one’s abilities (Edwards, 1954; Raiffa, 1968). Parker and Fischhoff (2005) conceptualized belief assessment as the ability to judge the probability of events or statements being true, value assessment as insensitivity to irrelevant task features, integration as the ability to combine beliefs and values when making decisions, and metacognition as knowing the extent of one’s competence. Based on this conceptualization, Parker and Fischhoff specifically looked at seven tasks that spanned the four fundamental decision-making skills. These tasks are: consistency in risk perception, recognizing social norms, resistance to sunk costs, resistance to framing, applying decision rules, path independence, and under/overconfidence. Table 1 displays the performance measurement of each task with the corresponding skill sets.

Through this study, Parker and Fischhoff (2005) found that DMC served as a single factor that captured much of the variance in the seven tasks. Moreover, they tested the correlation between DMC and other measures of cognitive ability, which revealed a positive correlation between the two constructs. DMC also correlated negatively with real-world risk behaviors, which further validated the behavioral implication of this construct.

DMC in Preadolescents
Since both DMC and general intelligence play an important role in human cognitive activities, the present study investigated whether family configuration such as birth order, family size, sibling spacing, and sibling sex composition relates to DMC the same way as it relates to intelligence. The relation between family configuration and DMC is not a frequently researched topic. In addition, few researchers have focused specifically on the preadolescent population. Research has suggested that children and adults show different decision-making patterns because the weaker inhibitory control system in children limits their ability to regulate emotion-related physiological processes (Steinberg, 2007). The maturation of the inhibitory control system is associated with human capability of effortful control, which involves the ability to regulate emotion-related behaviors (Eisenberg, Fabes, Karbon, & Murphy, 1996). Given that many of the seven DMC measures investigate the ability to resist contextual information, a closer look at the preadolescent population can reveal further information about the relation between effortful control and DMC. Moreover, comparison between preadolescent and adult decision-making performance can provide a developmental perspective on the construct of DMC.

The most relevant research regarding preadolescents’ DMC is the study by Weller, Levin, Rose, and Bossard (2012), in which they developed an assessment of DMC in preadolescents (PA-DMC). The assessment consists of classic decision-making tasks derived from previous DMC measures for young adults (Y-DMC) and adults (A-DMC; Bruine de Bruin et al., 2007; Parker & Fischhoff, 2005). In order to adapt the seven DMC measures to preadolescents, Weller et al. (2012) created task scenarios more familiar to children. They also left out two tasks, recognizing social norms and path independence, so that the assessment is more efficient and avoids participant fatigue. In this specific inventory, resistance to framing examines how preadolescents’ responses to the same decision scenario are influenced by the frame of the question, under/overconfidence assesses preadolescents’ abilities to evaluate their own knowledge accurately, applying decision rules involves cases in which participants are asked to choose between multiple options based on five key attributes, and consistency in risk perception examines preadolescents’ ability to follow probability rules. Sample questions of each category are listed in the Appendix. Table 2 shows the scale range for each of the PA-DMC component measures.

According to Weller et al. (2012), the generally lower alpha coefficients were the result of the number of the items. Therefore, the internal reliability of PA-DMC is comparable to that of the A-DMC. Using confirmatory factor analysis, the researchers also validated that DMC is a higher-order latent variable that explains the variance between the four

<table>
<thead>
<tr>
<th>Variable Name</th>
<th># of items</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Median</th>
<th>M</th>
<th>SD</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applying decision rules</td>
<td>6</td>
<td>0.00</td>
<td>6.00</td>
<td>4.00</td>
<td>4.20</td>
<td>1.26</td>
<td>0.50</td>
</tr>
<tr>
<td>Resistance to framing</td>
<td>6</td>
<td>-3.33</td>
<td>.00</td>
<td>-1.33</td>
<td>-1.35</td>
<td>0.67</td>
<td>0.41</td>
</tr>
<tr>
<td>Consistency in risk perception</td>
<td>6</td>
<td>2.00</td>
<td>6.00</td>
<td>6.00</td>
<td>5.42</td>
<td>0.95</td>
<td>0.53</td>
</tr>
<tr>
<td>Under/overconfidence</td>
<td>18</td>
<td>.54</td>
<td>1.00</td>
<td>.86</td>
<td>.85</td>
<td>.11</td>
<td>.79</td>
</tr>
<tr>
<td>Sunk cost</td>
<td>3</td>
<td>4.00</td>
<td>18.00</td>
<td>9.00</td>
<td>9.72</td>
<td>3.17</td>
<td>.25</td>
</tr>
</tbody>
</table>

Table 2: Descriptive Statistics for DMC-Component Scales (n = 101)

Note: Adapted from “Assessment of decision-making competence in preadolescence” (Weller et al., 2011).
component measures. The significant association between DMC and the self-reported behaviors further supported the external validity of the PA-DMC assessment.

**Aims and Hypothesis**

If the confluence model of intellectual development proposed by Zajonc and Markus (1975) also applies to DMC, preadolescents in the current sample would show declined decision-making performance with their increase of birth order and family size. In addition, children with closely spaced siblings would perform worse than those with larger age gaps from their siblings. However, considering that participants in the current sample (10-year-olds) were within the crossover age range of 11±2 years as proposed by the confluence model, their overall intellectual environment may be enriched by their experience as surrogate parents (Zajonc, 2001). As a result, they may not display the negative influence of birth order and family size.

Another family configuration factor of interest was sibling sex composition. Previous research has not found consistent results regarding the direct relation between sibling sex composition and human intellectual development. However, if parental treatment constitutes an important element of social interactions in a family setting and affects children’s intellectual growth, similar impacts may affect preadolescents’ abilities to make effective decisions. In order to test this speculation, the current work also studied sibling sex composition and its relationship with preadolescents’ DMC.

**Methods**

**Participants**

Ninety-seven preadolescents were recruited from the child research participant pool at the University of Iowa Psychology Department to complete the written PA-DMC questionnaire. All participants were 10 years of age and from White, middle-class families. Ten participants were only children and two were twins. Tests for sibling structure effects only included the 87 children with siblings; 49 were girls and 38 were boys.

Child participants came to the lab under the company of the legal guardian who was registered in the participant pool. Both the children and their parent were given assent and informed consent forms at the beginning of the study. Through the assent, participants were assured that their responses would be kept confidential and inaccessible to their parents. In addition, the children were separated from their parents during the process. Each child was paid $15 for completing the questionnaire. The questionnaire took between 45 and 60 mins to complete.

**Measures**

The key criterion variable of interest was PA-DMC as measured by the PA-DMC battery (Weller et al., 2012). Because the five component measures of PA-DMC showed significant intercorrelations with one another in the previous research, the current work used the one factor DMC score to assess preadolescents’ decision-making performance. Higher scores refer to better decision-making skills. Table 3 shows the range of DMC in the current sample.

The major predictor variables were birth order, family size, sibling spacing, and the sex of the closest sibling. Birth order was determined by comparing participants’ date of birth with that of their siblings. Family size was determined by each participant’s total number of siblings. Sibling spacing was calculated by averaging the age intervals between each participant and his or her siblings. Finally, the researcher looked at the sex of each participant’s closest sibling. The closest siblings were defined as those with the smallest age gap from the participants. Among the six participants who had two equally closely spaced siblings, two participants had opposite sex siblings. The Excel formula automatically returned the sex of the sibling who was located at an earlier sequence in the file records. Participant demographic information is found in Table 4.

**Results**

The researcher used one-way ANOVA to examine the relation between birth order and DMC scores. According to the test results, birth order was a significant predictor of DMC in preadolescents, $F(4, 92) = 2.66$, $p = .04$. However, the direction of the relation between birth order and decision-making performance was not clear.

Second, family size was entered as a predictor for preadolescents’ decision-making performance. Family size correlated significantly with DMC scores, $r(97) = .23$, $p = .02$. Participants who had

<table>
<thead>
<tr>
<th>The Range of DMC Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Full sample</td>
</tr>
<tr>
<td>Children with siblings</td>
</tr>
</tbody>
</table>
a larger family size had higher DMC scores. The accuracy of predicting DMC scores improved by approximately 5.3% if the prediction was based on participants’ family size.

Next, sibling spacing was examined for its relation with DMC scores. According to the simple linear regression, spacing did not correlate significantly with DMC scores, $r(87) = .01$, $p = .89$. Therefore, spacing was not a valid predictor of DMC scores.

The sex of the closest sibling, another important dimension of sibling structure, was found to have a significant impact on preadolescents’ DMC scores. Participants whose closest siblings were boys scored lower on PA-DMC ($M = -.09$) while those whose closest siblings were girls scored higher on PA-DMC ($M = .22$). A one-way ANOVA demonstrated that these differences were statistically significant, $F(1, 85) = 4.47$, $p = .04$.

**Discussion**

The present study investigated whether family configuration factors related to preadolescents’ DMC similarly to how they relate to general intelligence. Particularly, birth order, family size, sibling spacing, and sex of the closest sibling were examined for their relation with the sampled preadolescents’ scores on the PA-DMC measure. Based on previous studies, the researcher hypothesized that birth order and family size would relate negatively with participants’ DMC scores, sibling spacing would relate positively with participants’ DMC scores, and the sex of the closest sibling would be related to DMC scores. However, the final results indicated that only family size and the sex of the closest sibling have significant and clear direction of relation with the sampled preadolescents’ DMC scores.

Contrary to the expected negative relation between preadolescents’ family size and decision-making performance, in the current sample, a significantly positive relationship between family size and DMC scores was found. Although this finding contradicts the general conclusion of the confluence model for intellectual development (Zajonc & Markus, 1975), the fact that the sampled preadolescents fell in the crossover age range of 11±2 may explain the current result. According to the confluence model, the intellectual levels of family members determine the intellectual environment within a family through interfamily communications. Preadolescents in larger families are expected to suffer from the diluted intellectual environment. However, after the age of 11±2, they may benefit from the enriched experience they obtain from acting as surrogate parents at home (Zajonc, 2001). This is particularly true for early-born children in the family. Among the 97 sampled preadolescents, 10 were only-children, 42 were first-borns, 19 were middle-borns, and 2 were last-borns. First-borns and middle-borns constitute the majority of the sample and are very likely to have experienced tutoring younger siblings at home. Moreover, as family size increases, first-borns and middle-borns may have more extensive tutoring experience with younger siblings and gain an intellectual advantage. Therefore, despite the increase of family size, participants in the present study were able to perform well on decision-making tasks.

The other interesting finding was that preadolescents whose closest siblings were boys tended to perform worse on decision-making tasks than those whose closest siblings were girls. Although few researchers have provided theoretical basis for this finding, studies on the relation between sibling sex composition and perceived parental styles may help explain this phenomenon. In a study about family structure and child rearing patterns, Elder

<table>
<thead>
<tr>
<th>Table 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant Demographics</td>
</tr>
<tr>
<td>Variable name</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Birth order</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>First-borns</td>
</tr>
<tr>
<td>Second-borns</td>
</tr>
<tr>
<td>Third-borns</td>
</tr>
<tr>
<td>Fourth-borns</td>
</tr>
<tr>
<td>Only children</td>
</tr>
<tr>
<td>Family size</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>1-child</td>
</tr>
<tr>
<td>2-children</td>
</tr>
<tr>
<td>3-children</td>
</tr>
<tr>
<td>4-children</td>
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<td>5-children</td>
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<td>Closest sibling sex</td>
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<tr>
<td>Total</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Sibling spacing</td>
</tr>
<tr>
<td>Range 0–10.67</td>
</tr>
</tbody>
</table>

* A value of zero comes from no distance between twins.
and Bowerman (1963) concluded that a family with predominantly male composition tends to perceive parental treatments as more punitive. Similarly, preadolescents whose closest siblings are boys may be more likely to experience punitive discipline than those whose closest siblings are girls. Such punitive parental style could generate a negative family environment that correlates negatively with children’s DMC scores (Parker & Fischhoff, 2005). In order to validate this speculation, future researchers may want to focus on individual difference in preadolescents’ perceived parental treatment and examine its impact on decision-making performance.

The current findings regarding birth order and sibling spacing provide directions for future research. The specific characteristics of middle-borns may explain the current birth order effects. Kidwell (1982) found in his study on self-esteem that middle-borns tended to feel inferior to their siblings, which motivated them to make greater efforts in several areas such as academics and sports. Whether middle-borns perform better at decision-making tasks than preadolescents of other birth orders is worth researching in the future. In addition, the lack of heterogeneity in the current sample may result in the nonsignificant sibling spacing effects. According to the confluence model (Zajonc & Markus, 1975), people with largely spaced siblings are expected to grow up in better intellectual environments than those with closely spaced siblings. However, sibling spacing in the current sample may not be dispersed enough to reveal such a difference. Future study with a more balanced sample may help researchers draw more meaningful conclusions.

Despite the significant findings and implications of the present work, the following improvements in methodology may lead to more meaningful results. First, a more random and representative sample can help future researchers exclude extraneous variables and examine more factors of interest. For example, a more diverse sample with a balanced number of participants in each family configuration category may reveal more interesting relations between family configuration and preadolescents’ DMC.

Second, although the present work viewed family configuration as a within-family factor, many uncontrollable between-family factors could affect the validity of the results. For example, according to Page and Grandon’s admixture theory (1979), interfamily differences, such as social economic status and the educational level of parents could influence family structure. Particularly, families with lower SES and lower parental IQs tend to have both larger families and give birth to children with lower intelligence. Therefore, SES as a between-family variable could be an alternative explanation for the negative relation of family size and intelligence. If future researchers could manipulate confounds such as parents’ SES, religious backgrounds, parental educational levels, region, and race, they can further validate the family configuration effects found in the present study.

Conclusions
The present study focused on the preadolescent population and studied the effects of family configuration on their DMC. Birth order, family size, sibling spacing, and sibling sex compositions were the major variables of interest. Although the confluence model of intellectual development suggests significant relations between birth order, family size, sibling spacing, and general intelligence, the current work only found significant associations between family size, sex of the closest sibling and preadolescents’ DMC. In the current sample of 10-year-olds, an increase of family size relates to higher DMC scores. Also, preadolescents whose closest siblings are boys perform worse on decision-making tasks than those whose closest siblings are girls.

The study results indicate that the confluence model of intellectual development may be applicable to development of DMC in preadolescents. Future studies on a more representative sample that apply more sophisticated measures would help researchers investigate more meaningful family configuration effects.

References


Appendix: Sample PA-DMC Questions

<table>
<thead>
<tr>
<th>Resistance to Framing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: Positive and negative frames of the same problem were separated across sessions.</td>
</tr>
<tr>
<td>Instructions: Each of the following problems presents a choice between two options or a scale rating 1 through 6. For each item, please circle the answer that best reflects your relative preference between the two options. There are no right or wrong answers on this survey.</td>
</tr>
<tr>
<td>In a recent survey at a local middle school, 35% of the students said that they had never cheated on a spelling test. Given the results, how much cheating happens at this school?</td>
</tr>
<tr>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Very little Very much</td>
</tr>
<tr>
<td>In a recent survey at a local middle school, 65% of the students said that they had cheated on a spelling test. Given the results, how much cheating happens at this school?</td>
</tr>
<tr>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Very little Very much</td>
</tr>
<tr>
<td>Suppose that there are two new methods for teaching an advanced math topic:</td>
</tr>
<tr>
<td>Method A: Of 100 students using this method, 50 will fail to get a better grade.</td>
</tr>
<tr>
<td>Method B: There is a 50% chance that all 100 students will fail to get a better grade and a 50% chance that none of the students will fail to get a better grade.</td>
</tr>
<tr>
<td>Which method would you recommend?</td>
</tr>
<tr>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Most likely to recommend A Most likely to recommend B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Underconfidence/Overconfidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructions: This survey has True/False questions.</td>
</tr>
<tr>
<td>For example, Iowa State's football team is the Cyclones.</td>
</tr>
<tr>
<td>We want you to do two things:</td>
</tr>
<tr>
<td>First, answer the question.</td>
</tr>
<tr>
<td>In this example, you might think &quot;Yes, the football team is the Cyclones, so the statement is TRUE,&quot; then you would circle True.</td>
</tr>
<tr>
<td>Iowa State's football team is the Cyclones.</td>
</tr>
<tr>
<td>This statement is [True/False].</td>
</tr>
<tr>
<td>Second, think about how sure you are of your answer.</td>
</tr>
<tr>
<td>Give a number from 50% to 100%. In other words, what is the percent chance that you are right? Circle one of the numbers on the scale.</td>
</tr>
<tr>
<td>50% 60% 70% 80% 90% 100%</td>
</tr>
<tr>
<td>Just guessing Absolutely sure</td>
</tr>
<tr>
<td>If your answer is a total guess, circle 50%. This means that there is a 50% chance that you are right and a 50% chance that you are wrong. If you are absolutely sure, circle 100%. If you aren't sure, then circle a number in between, to show how sure you are.</td>
</tr>
<tr>
<td>The Declaration of Independence was written in 1776.</td>
</tr>
<tr>
<td>This statement is [True/False].</td>
</tr>
<tr>
<td>50% 60% 70% 80% 90% 100%</td>
</tr>
<tr>
<td>Just guessing Absolutely sure</td>
</tr>
<tr>
<td>In order to go to St. Louis, you drive south.</td>
</tr>
<tr>
<td>This statement is [True/False].</td>
</tr>
<tr>
<td>50% 60% 70% 80% 90% 100%</td>
</tr>
<tr>
<td>Just guessing Absolutely sure</td>
</tr>
</tbody>
</table>


Author Note. Fan Yang, Department of Psychology, University of Iowa.

Fan Yang is now at Department of Psychology, New York University.

I would like to gratefully acknowledge Dr. Irwin Levin for his contribution to the current research. I would also like to thank Elaine Bossard for her help with data collection and manuscript preparation.

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### Appendix: Sample PA-DMC Questions

#### Applying Decision Rules

Instructions: When you decide to buy a new product it is usually a good idea to compare the features of the different brands that make that product. This allows you to decide what product would be best for you. The following questions will give you different situations about people deciding which video game system they want to buy.

1. **How easy it is to use**
2. **How good the graphics are**
3. **How good the sound is**
4. **Game selection and variety**
5. **Price**

<table>
<thead>
<tr>
<th>Video game system 1</th>
<th>Video game system 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$300</td>
<td>$300</td>
</tr>
</tbody>
</table>

Tom wants a video game system that is special in at least one way. For him, that means at least medium in how good the sound is or game selection and variety.

Which video game system will Tom choose? _________

#### Resistance to Sunk Cost

Instructions: Each of the following problems presents a choice between two options or a scale rating 1 through 6. For each item, please circle the answer that best reflects your relative preference between the two options. There are no right or wrong answers on this survey.

1. You and your mom have driven halfway to a new zoo in a neighboring city. Both of you have a slight headache. Your mom says it is too bad you are already halfway there, because you both would rather spend the time at home. Would you be more likely to drive on or turn back?

   1 2 3 4 5 6

   Most likely to drive on  Most likely to turn back

2. You and a friend are at a movie theater. Both you and your friend think the movie is getting boring. You’d hate to waste the money spent on the movie ticket, but you both feel that you would have more fun playing videogames at your friend’s house. Would you be more likely to stay or to leave?

   1 2 3 4 5 6

   Most likely to stay  Most likely to leave

---


---

### Consistency in Risk Perception

Instructions: Each of these questions asks for your best guess at the chance that something will happen to you in the future. You should use the “probability” scale that you see below. To answer each questions, please put a mark on the scale at one specific tick mark.

If you think something has no chance of happening to you, mark it as having a 0% chance. If you think that something is certain to happen to your, mark it as having a 100% chance.

1. What is the probability that you will go to the principal or have your parents called because of bad behavior at school during the next month?

   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

   0% 5% 15% 25% 35% 45% 55% 65% 75% 85% 95% 100% certainty

2. What is the probability that you will go to the principal or have your parents called because of bad behavior at school during the next 2 years?

   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

   0% 5% 15% 25% 35% 45% 55% 65% 75% 85% 95% 100% certainty
## PSI CHI AWARDS

Psi Chi sponsors a variety of award competitions each year. Listed below is a brief overview. For more information, please visit [www.psichi.org/Awards](http://www.psichi.org/Awards)

<table>
<thead>
<tr>
<th>Name of Award</th>
<th>Description of Award</th>
<th>Submission Deadline</th>
<th>Who Can Apply?</th>
<th>Award Amount/Prize</th>
</tr>
</thead>
</table>
| Bandura Graduate Research Award         | Awards the student submitting best overall empirical study; cosponsored by APS       | February 1          | Graduate                        | • Travel expense to APS  
|                                         |                                                                                       |                     |                                 | • Plaque  
|                                         |                                                                                       |                     |                                 | • 3yr APS membership                                                             |
| Cousins Chapter Award                   | Presented to one chapter that best achieves Psi Chi’s purpose                        | February 1          | Chapter                         | • One $3,500 award  
|                                         |                                                                                       |                     |                                 | • Travel to APA  
|                                         |                                                                                       |                     |                                 | • Plaque                                                                          |
| Newman Graduate Research Award          | Awards the student submitting best overall empirical study; cosponsored by APA       | February 1          | Graduate                        | • Travel expense to APA  
|                                         |                                                                                       |                     |                                 | • Plaque  
|                                         |                                                                                       |                     |                                 | • 3yr journal subscription                                                       |
| Kay Wilson Leadership Award             | Awards one chapter president who demonstrates excellence in the leadership of the local chapter | April 1             | Chapter President (chapter nomination) | • One $500 award  
|                                         |                                                                                       |                     |                                 | • Travel to APA  
|                                         |                                                                                       |                     |                                 | • Plaque                                                                          |
| Allyn & Bacon Psychology Awards         | Awards for the best overall empirical study submitted                               | May 1               | Undergraduate                   | • 1st place—$1,000  
|                                         |                                                                                       |                     |                                 | • 2nd place—$650  
|                                         |                                                                                       |                     |                                 | • 3rd place—$350                                                                |
| Guilford Undergraduate Research Awards  | Awards for the best overall research papers submitted                               | May 1               | Undergraduate                   | • 1st place—$1,000  
|                                         |                                                                                       |                     |                                 | • 2nd place—$650  
|                                         |                                                                                       |                     |                                 | • 3rd place—$350                                                                |
| Building Bonds Awards                   | Awards to recognize collaborative activity by a Psi Chi and Psi Beta chapter         | June 1              | Chapter                         | • $100 award  
|                                         |                                                                                       |                     |                                 | • Plaque                                                                          |
| Model Chapter Awards                    | All chapters meeting the five criteria will receive $100                             | June 30             | Chapters                        | • $100 each chapter                                                           |
| Diversity Article Awards                | Awards for best *Eye on Psi Chi* articles published by student authors on diversity issues | July 1              | Graduate  
|                                         |                                                                                       |                     | • Undergraduate                  | • Four $300 awards                                                             |
| Regional Research Awards                | Up to 78 awards presented for the best research papers submitted as Psi Chi posters for the regional conventions | Deadlines Vary, Fall/Winter | Graduate  
|                                         |                                                                                       |                     | • Undergraduate                  | • $300 each  
|                                         |                                                                                       |                     |                                 | (number varies)                                                                 |
| Denmark Faculty Advisor Award           | To one outstanding faculty advisor nominated by the chapter who best achieves Psi Chi’s purposes | December 1          | Faculty Advisor (chapter nomination) | • Travel expense to APA  
|                                         |                                                                                       |                     |                                 | • Plaque                                                                          |
| Kay Wilson Officer Team Leadership Award| Awards the best chapter officer team for exceptional leadership as a group          | December 1          | Chapter                         | • $2,000 award ($1,000 for chapter + $1,000 for officers)                      |
| Regional Chapter Awards                 | Presented to one chapter in each of the six regions that best achieve Psi Chi’s purpose | December 1          | Chapter                         | • Six $500 awards  
|                                         |                                                                                       |                     |                                 | • Plaque                                                                          |
| Regional Faculty Advisor Awards         | To six outstanding faculty advisors (one per region) who best achieve Psi Chi’s purpose | December 1          | Faculty Advisor (chapter nomination) | • Six $500 awards  
|                                         |                                                                                       |                     |                                 | • Plaque                                                                          |
| Society Annual Convention Research Awards| Up to 8 awards (4 grad, 4 undergrad) presented for the best research papers submitted for APA/APS conventions | December 1          | Graduate  
|                                         |                                                                                       |                     | • Undergraduate                  | • $500 graduate  
|                                         |                                                                                       |                     |                                 | (number varies)  
|                                         |                                                                                       |                     |                                 | • $300 undergraduate  
|                                         |                                                                                       |                     |                                 | (number varies)                                                                 |
RESEARCH AWARDS

Bandura Award | February 1

All psychology graduate students who are Psi Chi members and graduate student affiliates of the Association for Psychological Science (APS) are eligible to submit their research for the Albert Bandura Graduate Research Award. The winner receives the following: (1) travel expenses to attend the APS National Convention to receive the award, (2) a three-year membership in APS, including subscriptions to all APS journals, and (3) two engraved plaques, one for the winner and one for the winner’s psychology department as a permanent honor to the winner. This award is presented during the APS opening ceremony at the APS National Convention.

Newman Award | February 1

All psychology graduate students are eligible to submit their research for the Edwin B. Newman Graduate Research Award. The winner receives the following: (1) travel expenses to attend the APA/Psi Chi Society Convention to receive the award, (2) a three-year subscription to an APA journal of the winner’s choice, and (3) two engraved plaques, one for the winner and one for the winner’s psychology department as a permanent honor to the winner. This award is presented during the APA/APF Awards ceremony at the annual APA/Psi Chi Society Annual Convention in August.

Allyn & Bacon Awards | May 1

The Allyn & Bacon Psychology Awards, cosponsored by Allyn & Bacon Publishers, are open to all undergraduate Psi Chi members and are awarded to those who submit the best overall empirical research papers. The awards are $1,000 for first place, $650 for second place, and $350 for third place.

Guilford Awards | May 1

All Psi Chi undergraduate members are eligible to submit their research for the J. P. Guilford Undergraduate Research Awards. Cash awards are $1,000 for first place, $650 for second place, and $350 for third place.

Diversity Article Awards | July 1

Four awards of $300 each are available for the best Eye on Psi Chi articles published by student authors on diversity issues, including but not limited to ethnic minority, GLBT, gender, and physical disability. The submission cannot contain faculty primary authors or coauthors. Both graduate and undergraduate Psi Chi members are eligible for the award.

Regional Research Awards | Deadlines Vary (Fall/Winter)

All Psi Chi members (undergraduate and graduate) are eligible to submit their research for the Regional Research Awards. Up to 78 cash awards of $300 each are presented to students submitting the best research papers to Psi Chi sessions at regional conventions. Award monies are distributed at the conventions following the presentations. Deadlines for submissions vary according to region and sometimes from year to year; check the Psi Chi website for details.

Society Annual Convention Research Awards | December 1

All Psi Chi members (undergraduate and graduate) are eligible to submit their research for the Society Annual Convention Research Awards. Up to 8 awards (up to $300 undergraduate; $500 graduate) are presented to students submitting the best research papers for APA/APS conventions.

CHAPTER AND ADVISOR AWARDS

Cousins Chapter Award | February 1

The Ruth Hubbard Cousins Chapter Award is presented annually to the one chapter that best achieves Psi Chi’s purpose. The winning chapter receives (1) a check for $3,500, (2) travel expenses for one chapter officer to attend the APA/Psi Chi Society Annual Convention to receive the award, and (3) a plaque to display in the winning chapter’s department.

Kay Wilson Leadership Award | April 1

The Kay Wilson Leadership Award for Outstanding Chapter Presidents is presented annually to the one chapter president who demonstrates excellence in leadership of the local chapter. The winning Psi Chi chapter officer receives: (1) a $500 cash award, (2) travel expenses for the chapter president to attend and make a short presentation at the APA/Psi Chi Society Annual Convention to receive the award, and (3) an engraved plaque commemorating the award.

Building Bonds Awards | June 1

Building Bonds Awards of $100 each are presented annually to recognize collaborative activity by a Psi Chi and a Psi Beta chapter.

Model Chapter Awards | June 30

Model Chapter Awards of $100 each are presented annually to recognize and reward Psi Chi chapters that consistently maintain outstanding records of membership inductions, chapter correspondence, service projects, and other criteria associated with being an outstanding chapter. All chapters submitting evidence of meeting these criteria are designated as winners.

Denmark Faculty Advisor Award | December 1

The Florence L. Denmark Faculty Advisor Award is presented annually to the one Psi Chi faculty advisor who best achieves Psi Chi’s purpose. The award includes (1) travel expenses to attend the APA/Psi Chi Society Annual Convention to receive the award and (2) an engraved plaque. The award is intended to recognize Psi Chi faculty advisors for their outstanding service to the chapter and to Psi Chi.

Kay Wilson Officer Team Leadership Award | December 1

The Kay Wilson Officer Team Leadership Award is presented annually to the one Psi Chi officer team that demonstrates exceptional leadership as a group. The winning Psi Chi chapter and officers receive a $2,000 cash award ($1,000 for chapter and $1,000 for officers).

Regional Chapter Awards | December 1

The Regional Chapter Awards provide annual recognition for one chapter in each region that best achieves Psi Chi’s purpose. Each winning chapter receives a check for $500 and a plaque to display in the winning chapter’s department. The awards are intended to perpetuate the chapters, to identify chapters as role models for others, and to promote the purposes of Psi Chi.

Regional Faculty Advisor Awards | December 1

This award is presented annually to one Psi Chi faculty advisor from each region who best achieves Psi Chi’s purpose. The award is to recognize and reward actively involved chapter advisors. The winning faculty advisor from each region will receive $500 and a plaque.
# PSI CHI RESEARCH GRANTS

Psi Chi sponsors a variety of grants each year. Listed below is a brief overview. For more information, please visit [www.psichi.org/Awards/completelist_awards.aspx](http://www.psichi.org/Awards/completelist_awards.aspx)

<table>
<thead>
<tr>
<th>Name of Grant</th>
<th>Description of Grant</th>
<th>Submission Deadline</th>
<th>Who Can Apply?</th>
<th>Award Amount/Prize</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graduate Assistantship Grants</strong></td>
<td>Provides funding for teaching and research graduate assistantships during any academic semester</td>
<td>January 1</td>
<td>Graduate</td>
<td>Eight assistantships of $3,000</td>
</tr>
<tr>
<td><strong>Collaboration Grants</strong></td>
<td>Provides funds for a Psi Chi chapter and a Psi Beta chapter to collaborate on a shared activity</td>
<td>January 20 June 1</td>
<td>Chapter</td>
<td>Four $500 grants</td>
</tr>
<tr>
<td><strong>FBI NCAVC Internship Grants</strong></td>
<td>Provides living expenses for a 14-week unpaid FBI NCAVC internship to conduct research</td>
<td>February 1 June 1</td>
<td>Graduate Undergraduate</td>
<td>Two grants, up to $7,000 each</td>
</tr>
<tr>
<td><strong>APS Summer Research Grants</strong></td>
<td>Provides opportunities to conduct research during the summer with sponsors who are APS members</td>
<td>March 1</td>
<td>Undergraduate</td>
<td>Six $5,000 grants ($3,500 student + $1,500 sponsor)</td>
</tr>
<tr>
<td><strong>CUR Summer Research Grants</strong></td>
<td>Provides opportunities to conduct research during the summer with sponsors who are CUR members</td>
<td>March 1</td>
<td>Undergraduate</td>
<td>Two $5,000 grants ($3,500 student + $1,500 sponsor)</td>
</tr>
<tr>
<td><strong>SRCD Summer Research Grants</strong></td>
<td>Provides opportunities to conduct research during the summer with sponsors who are SDRC members</td>
<td>March 1</td>
<td>Undergraduate</td>
<td>Two $5,000 grants ($3,500 student + $1,500 sponsor)</td>
</tr>
<tr>
<td><strong>Summer Research Grants</strong></td>
<td>Provides opportunities to conduct research during the summer at recognized research institutions</td>
<td>March 1</td>
<td>Undergraduate</td>
<td>Fourteen $5,000 grants ($3,500 student + $1,500 sponsor)</td>
</tr>
<tr>
<td><strong>Faculty Advisor Research Grants</strong></td>
<td>Provides funding for the direct costs of a project to support faculty advisors’ empirical research</td>
<td>June 1</td>
<td>Faculty Advisor</td>
<td>Twelve grants, up to $2,000 each</td>
</tr>
<tr>
<td><strong>STP Assessment Resource Grants</strong></td>
<td>Supports projects to develop assessment tests, instruments, and processes for the APA Guidelines for the Undergraduate Psychology Major</td>
<td>June 1</td>
<td>Psi Chi Faculty Members</td>
<td>Three $2,000 grants</td>
</tr>
<tr>
<td><strong>APAGS/Psi Chi Junior Scientist Fellowships</strong></td>
<td>Provides funding for a 1st-year or 2nd-year graduate-level project</td>
<td>June 30</td>
<td>Psi Chi Members APAGS Members</td>
<td>Four fellowships, $1,000 each</td>
</tr>
<tr>
<td><strong>SuperLab Research Grants</strong></td>
<td>Two awards for conducting the best computer-based research</td>
<td>October 1</td>
<td>Graduate Undergraduate</td>
<td>SuperLab software Response pad</td>
</tr>
<tr>
<td><strong>Thelma Hunt Research Grants</strong></td>
<td>Enables members to complete empirical research on a question directly related to Psi Chi</td>
<td>October 1</td>
<td>Faculty Graduate Undergraduate</td>
<td>Two grants up to $3,000 each</td>
</tr>
<tr>
<td><strong>Undergraduate Psychology Research Conference Grants</strong></td>
<td>To support local/regional undergraduate psychology conferences. Total grant money available is $15,000</td>
<td>October 1</td>
<td>Sponsor(s) of local and regional conference</td>
<td>Up to $1,000 each (number varies)</td>
</tr>
<tr>
<td><strong>Regional Travel Grants</strong></td>
<td>Provides $3,000 per region to assist students with travel expenses to a regional convention</td>
<td>Deadlines Vary, Winter/Spring</td>
<td>Graduate Undergraduate</td>
<td>Up to $300 each (number varies)</td>
</tr>
<tr>
<td><strong>Graduate Research Grants</strong></td>
<td>To provide funds for graduate students to conduct a research project. Total grant money available is $20,000</td>
<td>November 1 February 1</td>
<td>Graduate</td>
<td>Up to $1,500 each (number varies)</td>
</tr>
<tr>
<td><strong>Mamie Phipps Clark Research Grants</strong></td>
<td>Enables members to conduct a research project focusing on ethnic minorities. Total grant money available is $10,000</td>
<td>November 1 February 1</td>
<td>Faculty Graduate Undergraduate</td>
<td>Up to $1,500 each (number varies)</td>
</tr>
<tr>
<td><strong>Undergraduate Research Grants</strong></td>
<td>Funding to defray the cost of conducting a research project. Total grant money available is $35,000</td>
<td>November 1 February 1</td>
<td>Undergraduate</td>
<td>Up to $1,500 each (number varies)</td>
</tr>
</tbody>
</table>
RESEARCH GRANTS

Graduate Assistantship Grants | January 1
This grant provides funding for four teaching and four research graduate assistantships during any academic semester. Each grant recipient will receive $3,000. Applicants must be a graduate student who has yet to graduate and a Psi Chi member to be eligible for the program.

Collaboration Grants | January 20 & June 1
All Psi Chi and Psi Beta chapters are eligible for these collaboration grants that provide funding for a Psi Chi chapter and a Psi Beta chapter to collaborate on a shared activity. Psi Chi will award four $500 grants.

FBI NCAVC Internship Grants | February 1 & June 1
All undergraduate and graduate Psi Chi members who are accepted as FBI NCAVC interns are eligible to apply for this internship grant. Two grants up to $7,000 will be awarded annually for the 14-week unpaid position that allows the intern to conduct research at the FBI NCAVC.

APS Summer Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these grants (research must be conducted while still an undergraduate, not after graduation). The purpose of the program is to allow students to conduct research during the summer with a faculty sponsor who is a member of APS. Psi Chi awards six $5,000 grants (a stipend of $3,500 to the student plus $1,500 to the faculty sponsor).

CUR Summer Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these grants (research must be conducted while still an undergraduate, not after graduation). The purpose of the program is to allow students to conduct research during the summer with a faculty sponsor who is a member of CUR. Psi Chi awards two $5,000 grants (a stipend of $3,500 to the student plus $1,500 to the faculty sponsor).

SRCD Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these grants (research must be conducted while still an undergraduate, not after graduation). The purpose of the program is to allow students to conduct research during the summer with a faculty sponsor who is a member of SRCD. Psi Chi awards two $5,000 grants (a stipend of $3,500 to the student plus $1,500 to the faculty sponsor).

Summer Research Grants | March 1
All undergraduate Psi Chi members are eligible to apply for these summer research grants (research must be conducted while still an undergraduate, not after graduation). The purpose of this program is to provide funds to members to conduct summer research at recognized research institutions. Psi Chi will award 14 grants of $5,000 (a stipend of $3,500 to the Psi Chi student plus $1,500 to the sponsoring faculty member at the research institution each year).

Faculty Advisor Research Grants | June 1
All current faculty advisors and coadvisors who have served an active Psi Chi chapter for at least one year are eligible to apply for these faculty advisor research grants. The purpose of this program is to provide funds for advisors to defray the direct costs of conducting a research project (no stipends included). Twelve grants of up to $2,000 are available annually.

STP Assessment Resource Grants | June 1
All Psi Chi faculty members are eligible for these grants, which support projects to develop assessment tests, instruments, and processes. Psi Chi will award three $2,000 grants.

APAGS Junior Scientist Fellowships | June 30
All Psi Chi and APAGS members entering their first or second year of graduate school are eligible for these fellowships that provide funding for direct costs of psychological science research projects. Applicants must be a member of both organizations at the time of submission to be eligible.

SuperLab Research Grants | Oct 1
All undergraduate and graduate Psi Chi members are eligible to apply for these research grants. Grant winners receive a copy of SuperLab experimental lab software and a response pad from Cedrus®.

Thelma Hunt Research Grants | Oct 1
All Psi Chi student and faculty members are eligible to apply for a Thelma Hunt Research Grant. Up to two grants of up to $3,000 each are presented annually to enable members to complete empirical research that addresses a question directly related to Psi Chi.

Undergraduate Psychology Research Conference Grants | Oct 1
The purpose of this program is to provide funds for local/regional undergraduate psychology research conferences. Funding is intended for conferences that will invite student research presenters from at least three schools in the area and will notify all Psi Chi chapters in the geographic area of the conference. The maximum grant for each conference is $1,000.

Regional Travel Grants | Deadlines Vary (Winter/Spring)
All graduate and undergraduate Psi Chi members are eligible for these regional travel grants that provide funding to assist students with travel expenses to a regional convention. Each grant offers up to $500 each; $3000 is available per region.

Graduate Research Grants | November 1 & February 1
The purpose of this program is to provide funds for graduate student members to defray the cost of conducting a research project. Applicants may request up to $1,500 for each project. A total of $20,000 has been allotted for this student grant program.

Mamie Phipps Clark Research Grant | November 1 & February 1
All Psi Chi members (faculty, graduate and undergraduate students) are eligible for the Mamie Phipps Clark Research Grant. Each grant offers up to $1,500 to defray the costs of conducting a research project focusing on ethnic minorities. Total funding available is $10,000 per year, and the program begins in 2012.

Undergraduate Research Grants | November 1 & February 1
The purpose of this program is to provide funds for undergraduate student members to defray the cost of conducting a research project. Applicants may request up to $1,500 for each project. A total of $30,000 has been allotted for this student grant program.
Psi Chi Journal of Undergraduate Research Broadens Its Scope

The Board of Directors recently made a significant change to the Psi Chi Journal of Undergraduate Research, Psi Chi’s peer-reviewed journal founded in 1995. This change will better serve all Psi Chi members, and increase submissions, readership, and the overall prestige of the Journal.

• The name has changed to Psi Chi Journal of Psychological Research now that Psi Chi accepts submissions from undergraduate first authors as well as graduate students and faculty Psi Chi members.

• Undergraduate work will not compete against the work of graduate students and faculty for a place in the Journal. Each piece will be reviewed based on education level.

• The Journal will continue to be peer-reviewed by doctoral-level psychology faculty and uphold the tradition of mentoring all Psi Chi authors through the review, revision, and publication processes.

We invite all Psi Chi undergraduates, graduate students, and faculty to submit their research to the new Psi Chi Journal of Psychological Research at http://www.psichi.org/pubs/journal/submissions.aspx.