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The Effects of Political Advertising Message and Candidate Gender on Likelihood to Vote for the Sponsoring Candidate

To examine the effects of political candidates' gender and advertising message, 160 undergraduates (90 women, 62 men, and 8 unreported) read 1 of 4 political ads and completed a questionnaire assessing the ad, perceptions of candidate personality, and likelihood of voting for the candidate. As hypothesized, a 2 (candidate gender: man or woman) X 2 (ad: comparative or negative) analysis of variance revealed that participants were more likely to vote for a candidate who used comparative advertising. However, contrary to our hypotheses, neither the effect of gender nor the gender by ad interaction was significant. Our findings suggest that politicians should carefully choose the advertising message for their campaigns because it can have a significant impact on a voter's choice.
male candidates to female candidates because they feel that women are not capable of handling certain issues. Further, voters tend to perceive female candidates as more liberal than male candidates, regardless of the candidate’s political affiliation (Koch, 2000). In addition, people tend to associate different personality traits with male candidates than with female candidates. Males are seen as competitive, insensitive, aggressive, tough, and forceful; females are seen as non-competitive, sensitive, passive, compassionate, and gentle (Huddy & Terkildsen, 1993; Kahn & Goldenberg, 1991; Rosenwasser & Dean, 1989). Because voters view female candidates and male candidates differently, gender biases can affect the electoral prospects of women candidates (Herrnson, Lay, & Stokes, 2003).

Limited research connecting a candidate’s gender with his or her political advertising message was available. However, Hitchon and Chang (1995) showed that the advertising message used by female candidates had more of an effect in terms of issue recall: neutral (i.e., comparative) ads produced the highest recall, followed by positive ads and then negative ads. There was no difference in issue recall by advertising message for the male candidates’ ads. The study also demonstrated that male candidates who attacked female candidates received higher total recall scores (which included both issue and identity recall as well as other factors, such as physical appearance) than female candidates; further, the participants expressed more negativity in response to these attacks. These results indicate that candidate gender influences how people react to political advertising messages. Our experiment was aimed at expanding on these results to see if individuals were more likely to vote for a candidate of a certain gender using a particular advertising message.

Purpose

The goal of this experiment was to find out how the political advertising message (i.e., comparative or negative) used in a printed campaign ad and the gender of the candidate affect an individual’s likelihood to vote for that candidate. Much of the previous research used televised political ads, but we chose to use printed advertising so that the participants could not see the candidate about whom they were reading. This controlled for judgments about the candidate’s physical appearance. The candidate’s gender was made known through the wording of the advertisement, and the participant’s likelihood to vote for the candidate was determined on a 4-point scale (1 = Strongly Agree, 4 = Strongly Disagree).

Hypotheses

1. Individuals will be more likely to vote for a candidate using comparative advertising than a candidate using negative advertising.
2. Individuals will be more likely to vote for a male candidate than a female candidate.
3. Likelihood to vote for the sponsoring candidate will be highest for a male candidate using comparative advertising and lowest for a female candidate using negative advertising.

Method

Participants

The participants for our study were 160 students enrolled in psychology courses at a small, private university in the mid-south. The majority of the participants were White (58.1%) and between the ages of 18 and 20 (66.4%). There were 62 men and 90 women (8 participants did not report their gender). The students participated in the experiment to fulfill a course requirement or to receive extra credit. The participants were treated in accordance with the “Ethical Principles of Psychologists and Code of Conduct” (American Psychological Association, 1992).

Materials

The materials included four fictional, political advertisements (see Appendix). The advertisements were in flyer form. The “candidate” was running for reelection to a position in the Jackson City Council in North Dakota. The researchers used North Dakota in the ads to avoid biases that might arise if the participants were familiar with the state. The flyers covered the four conditions: (a) male candidate, comparative advertisement; (b) female candidate, comparative advertisement; (c) male candidate, negative advertisement; and (d) female candidate, negative advertisement. Participants responded to questions about the candidate’s personality (e.g., honesty, capability), about their opinion of the candidate and the opposing candidate (e.g., low opinion, support), about the advertisement (e.g., usefulness, emotional appeal), and about their likelihood to vote for the candidate. Participants responded to 11 statements using a 4-point Likert scale ranging from 1 (Strongly Agree) to 4 (Strongly Disagree, see Table 1). Participants also provided demographic information including age, gender, ethnicity, class rank, and political affiliation.

Procedure

Participants completed the experiment during their class periods. The researchers gave one of the advertisements to each participant. The ads were num-
bered (1, 2, 3, or 4) according to the condition that each one represented. Participants were given 2 minutes to read and evaluate the advertisement. After 2 minutes, the researchers passed out the opinion and demographics questionnaire. The participants recorded their ad number in a space on the questionnaire so that the researchers would be able to separate the questionnaires into the respective conditions. Then the researchers collected the ads so that the participants would not be able to review them while filling out the questionnaire. The participants were given 10 minutes to complete the questionnaire. After the partic-

### TABLE 1

**Opinion of Candidate Questionnaire**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Strongly Agree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. White is an honest candidate.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>2. White is a capable candidate.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>3. White’s campaign tactics are fair.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>4. White’s advertisement lowered my opinion of the opponent.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>5. White’s advertisement lowered my opinion of White.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>6. White’s advertisement provided useful information.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>7. White’s advertisement appealed to me emotionally.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>8. White’s advertisement made me angry.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>9. The advertisement earned my support for White.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>10. I think that White is a good person.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>11. I would vote for White.</td>
<td>SD</td>
<td>D</td>
<td>A</td>
<td>SA</td>
</tr>
</tbody>
</table>

### TABLE 2

**Effect of Advertising Message on Candidate Ratings**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>MSE</th>
<th>df</th>
<th>F</th>
<th>p</th>
<th>( \eta^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personality:</strong> Whether the candidate was…</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honest</td>
<td>0.32</td>
<td>1, 155</td>
<td>50.69</td>
<td>.01</td>
<td>.25</td>
</tr>
<tr>
<td>Capable</td>
<td>0.38</td>
<td>1, 155</td>
<td>91.99</td>
<td>.01</td>
<td>.37</td>
</tr>
<tr>
<td>Fair</td>
<td>0.61</td>
<td>1, 156</td>
<td>30.72</td>
<td>.01</td>
<td>.17</td>
</tr>
<tr>
<td>A good person</td>
<td>0.34</td>
<td>1, 154</td>
<td>58.12</td>
<td>.01</td>
<td>.27</td>
</tr>
<tr>
<td><strong>Opinion and support:</strong> Whether the voter…</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formed a low opinion of the opponent</td>
<td>0.58</td>
<td>1, 156</td>
<td>0.03</td>
<td>.87</td>
<td>.00</td>
</tr>
<tr>
<td>Formed a low opinion of the sponsoring candidate</td>
<td>0.52</td>
<td>1, 156</td>
<td>75.43</td>
<td>.01</td>
<td>.33</td>
</tr>
<tr>
<td>Felt support for the sponsoring candidate</td>
<td>0.41</td>
<td>1, 156</td>
<td>45.24</td>
<td>.01</td>
<td>.23</td>
</tr>
<tr>
<td><strong>Advertisement:</strong> Whether the advertisement…</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was useful</td>
<td>0.43</td>
<td>1, 156</td>
<td>55.76</td>
<td>.01</td>
<td>.26</td>
</tr>
<tr>
<td>Had emotional appeal</td>
<td>0.37</td>
<td>1, 156</td>
<td>0.35</td>
<td>.55</td>
<td>.00</td>
</tr>
<tr>
<td>Inspired anger</td>
<td>0.54</td>
<td>1, 156</td>
<td>9.98</td>
<td>.01</td>
<td>.06</td>
</tr>
</tbody>
</table>
Participants completed the questionnaire, the researchers debriefed them by explaining the purpose of the study and providing the researchers’ contact information.

The researchers divided the questionnaire responses into four categories in order to compare the effects of advertising message in different areas. The first category (ratings of the candidate) included honesty, capability, fairness, and whether or not the candidate was a good person. The second category (ratings of opinion and support) included whether the ad lowered one’s opinion of the opponent, whether it lowered one’s opinion of the sponsoring candidate, and whether it earned one’s support for the sponsoring candidate. The third category (ratings of the ad) included its usefulness, emotional appeal, and whether it made one angry. The fourth category was likelihood to vote for the sponsoring candidate.

**Results**

The first hypothesis was that individuals would be more likely to vote for a candidate using comparative advertising than for a candidate using negative advertising. A 2 X 2 (gender of candidate by advertising message) analysis of variance (ANOVA) for likelihood to vote for the sponsoring candidate revealed that individuals were significantly more likely to vote for a candidate using comparative advertising ($M = 2.54, SD = .63$) than a candidate using negative advertising ($M = 3.28, SD = .60$). $F(1, 155) = 54.61, p < .01$, $MSE = 0.38$, $\eta^2 = .26$. The researchers also tested the participants’ ratings of the candidate’s personality, opinion and support for the candidate, and the advertisement. ANOVA results are outlined in Table 2. Advertising message had a significant effect on all but two characteristics (lowered opinion of the opponent and emotional appeal of the advertisement). Means and standard deviations for the ratings can be found in Table 3.

The second hypothesis was that individuals would be more likely to vote for a male candidate than for a female candidate. The researchers found no significant effect of the candidate’s gender on the likelihood to vote for that candidate, $F(1, 155) = 2.62, p = .11$, $MSE = 0.38$, $\eta^2 = .02$. Participants were just as likely to vote for a male candidate ($M = 3.01, SD = .75$) as for a female candidate ($M = 2.79, SD = .67$).

The third hypothesis was that likelihood to vote for the sponsoring candidate would be highest for a male candidate using comparative advertising and lowest for a female candidate using negative advertising. The researchers found no interaction effect of the candidate’s gender and advertising message on the likelihood to vote for that candidate, $F(1, 155) = 0.18, p = .67$, $MSE = 0.38$, $\eta^2 = .00$.

| TABLE 3 | Descriptive Statistics for Candidate Ratings as a Function of Advertising Message |
|------------------------- |--------------------------------- |--------------------------------- |
| Characteristic          | Comparative Adv | Negative Adv |
|                         | $M$  | $SD$  | $n$ | $M$  | $SD$  | $n$ |
| Personality: Whether the candidate was… |
| Honest                  | 2.23 | .48   | 82  | 2.87 | .64   | 77  |
| Capable                 | 1.98 | .52   | 82  | 2.91 | .69   | 77  |
| Fair                    | 2.54 | .77   | 82  | 3.23 | .79   | 78  |
| A good person           | 2.35 | .53   | 81  | 3.06 | .64   | 77  |
| Opinion and support: Whether the voter… |
| Formed a low opinion of the opponent | 2.60 | .72   | 82  | 2.63 | .81   | 78  |
| Formed a low opinion of the sponsoring candidate | 2.77 | .69   | 82  | 1.76 | .76   | 78  |
| Felt support for the sponsoring candidate | 2.68 | .61   | 82  | 3.37 | .67   | 78  |
| Advertisement: Whether the advertisement… |
| Was useful              | 2.33 | .57   | 82  | 3.12 | .74   | 78  |
| Had emotional appeal    | 3.15 | .61   | 82  | 3.21 | .59   | 78  |
| Inspired anger          | 2.96 | .60   | 82  | 2.59 | .84   | 78  |

Note. A lower score indicated greater agreement.
The effect sizes for significant results were low; therefore, differences in ratings of the candidates are due to additional factors. Although we did not hypothesize about the age and gender of participants, these two factors could account for some of the variation in candidate ratings. An analysis to determine if female participants were more likely than male participants to vote for a female candidate indicated that there was no gender difference in voting for male or female candidates, $F(1, 147) = 0.00, p = .99, \text{MSE} = 0.50, \eta^2 = .00$. However, analyses to determine if participant age was a factor in candidate gender perception revealed that, although there was no age difference in voting for a male candidate, there was a trend by which participants ages 21 and over were less likely to vote for a female candidate than participants who were under 21 years old, $F(1, 147) = 3.60, p = .06, \text{MSE} = 0.49, \eta^2 = .02$. For participants who were under 21, there was no difference in voting for male and female candidates. Therefore, it appears that the age of voters, more than their gender, influences whether they are more likely to vote for a male or female candidate.

**Discussion**

Our results indicate that it is important for a political candidate to consider what advertising message to use in his or her campaign. In our experiment, negative advertising resulted in less favorable ratings of the candidate’s personality than comparative advertising. Individuals viewed the fictional candidate as less honest, capable, and fair when he or she used negative advertising. Additionally, more people saw the candidate as a good person when he or she used comparative advertising. Negative advertising failed to lower the participants’ opinions of the opponent as compared to comparative advertising; however, it did lower their opinions of the sponsoring candidate. Negative advertising inspired more anger than comparative advertising, which may have contributed to the backlash effect as described by Sonner (1998). Finally, individuals were more likely to vote for candidates using comparative advertising than candidates using negative advertising. Therefore, as previous research has shown, comparative advertising seems to be more effective and beneficial than negative advertising.

Our results show that a candidate’s gender is not a significant factor influencing an individual’s likelihood to vote for that candidate on the local level. According to this study, individuals are just as likely to vote for a male candidate as a female candidate. In addition, a candidate’s gender has no effect on how an individual perceives the candidate’s advertising message; that is, evaluations of comparative and negative advertisements are constant whether the candidate is male or female. This result might be due to the fact that we did not intentionally include the gender of the opponent as a factor. Advertisements could be evaluated more negatively if the candidate is attacking a person of the opposite gender, especially if a man is attacking a woman, as described by Hitchon and Chang (1995).

There were several limitations to our study. First of all, the sample was taken from a small university and consisted entirely of psychology students. The participants were predominantly women, White, and young, so the sample was not representative of the general population. Further, the advertising used in this experiment only included printed ads. These ads were designed by the researchers and did not necessarily look professional (i.e., the ads were printed in black-and-white on regular computer paper). In addition, the candidate’s name was White; therefore, some participants may have perceived the advertisements as racially biased. Further, the ads mention that the candidate’s opponent is a draft dodger, which indicates that the opponent is a man since women are not currently eligible for the draft. Therefore, the gender of the opponent may have played a role even though it was not evaluated. Finally, our study investigated a low-level, local political position rather than a state or national position. Candidate gender could play a larger role in more prominent elections.

Future research could examine how different types of media can be used to portray the political ads (i.e., radio or television ads). A picture or video of the candidate could also be included to measure the effects of candidate appearance on the likelihood of individuals to vote for that candidate. Further research could expand on our study by adding the gender of the opponent as a factor to see if doing so will affect people’s perception of a candidate using either comparative or negative advertising. Additionally, sample size should be increased and more balanced by gender to facilitate the analysis of impressions and likelihood to vote by participant gender. Finally, participants should be asked whether they are registered to vote and if they vote in local elections, as these factors may influence how they evaluate political advertisements.

Politicians running for office need to know how to maximize support from voters. The use of negative advertising has grown steadily in recent years (Benoit, 1999), but our research has strengthened the argument that mudslinging is simply not as effective as comparative advertising, at least on the local level (Meirick, 2002; Sonner, 1998; Matthews & Dietz-Uhler, 1998; Budesheim, et. al, 1996). Perhaps in the near future, the arena of political campaigning will become a much less hostile place.
References


COMPARATIVE MALE AD

Re-elect Councilman White!  
Jackson, ND City Council

✔ Councilman White graduated summa cum laude from Yale University, while his opponent graduated from the University of Virginia.

✔ Councilman White served in the North Dakota National Guard. His opponent avoided military service.

✔ Councilman White was born and raised in Jackson and knows its needs and values. His opponent grew up in a big city and does not understand the needs and values of a small town.

✔ Councilman White supported a bill that would improve state funding for public schools by re-appropriating useless government funds. His opponent opposed this bill.

✔ If re-elected, Councilman White will continue to work to lower taxes and unemployment.

“You can’t go wrong with White!!”

NEGATIVE MALE AD

Re-elect Councilman White!  
Jackson, ND City Council

✔ Councilman White’s opponent went to a mediocre college and has no specialized education.

✔ His opponent is a draft-dodger who avoided military service and would turn tail and run in the country’s time of need.

✔ His opponent is a hotshot city slicker and does not understand the needs and values of a simple, rural town.

✔ His opponent opposed a bill that would improve state funding for public schools by re-appropriating useless government funds, which obviously shows a lack of concern for the youth of Jackson.

✔ Councilman White’s opponent has a track record of increasing taxes and unemployment and, if re-elected, will undoubtedly continue to do so.

“You can’t go wrong with White!!”

COMPARATIVE FEMALE AD

Re-elect Councilwoman White!  
Jackson, ND City Council

✔ Councilwoman White graduated summa cum laude from Yale University, while her opponent graduated from the University of Virginia.

✔ Councilwoman White served in the North Dakota National Guard. Her opponent avoided military service.

✔ Councilwoman White was born and raised in Jackson and knows its needs and values. Her opponent grew up in a big city and does not understand the needs and values of a small town.

✔ Councilwoman White supported a bill that would improve state funding for public schools by re-appropriating useless government funds. Her opponent opposed this bill.

✔ If re-elected, Councilwoman White will continue to work to lower taxes and unemployment.

“You can’t go wrong with White!!”

NEGATIVE FEMALE AD

Re-elect Councilwoman White!  
Jackson, ND City Council

✔ Councilwoman White’s opponent went to a mediocre college and has no specialized education.

✔ Her opponent is a draft-dodger who avoided military service and would turn tail and run in the country’s time of need.

✔ Her opponent is a hotshot city slicker and does not understand the needs and values of a simple, rural town.

✔ Her opponent opposed a bill that would improve state funding for public schools by re-appropriating useless government funds, which obviously shows a lack of concern for the youth of Jackson.

✔ Councilwoman White’s opponent has a track record of increasing taxes and unemployment and, if re-elected, will undoubtedly continue to do so.

“You can’t go wrong with White!!”
Often the responsibilities of work and family interfere with one another, causing conflict to arise in one or both domains. This discord felt in the home domain is known as work-family conflict and can be defined as the extent to which people experience pressures within their work role that are incompatible with pressures from their family role (e.g., not having time to cook dinner because of a work deadline that requires extra hours; Grant-Vallone & Donaldson, 2001). In contrast, family-work conflict is encountered in the work domain and can be defined as the extent to which people experience pressures within their family role that are incompatible with pressures from their work role (e.g., missing an important business meeting to take children to the doctor).

An abundance of studies have been conducted on the negative effects of the incompatibility of work and family including health problems (Frone, Russell, & Cooper, 1997), lowered job satisfaction (Adams, King, & King, 1996; Boles, Wood, & Johnson, 2003), and lowered well-being (Grant-Vallone & Donaldson, 2001). In a longitudinal study of the relationship of work and family conflict and health outcomes, Frone et al. found that family-work conflict was associated with poor physical health and high levels of depression, and work-family conflict was associated with high levels of alcohol consumption. Similarly, Grant-Vallone & Donaldson (2001) discovered that employees who reported high levels of work-family conflict reported lower levels of well-being than employees who reported low levels of work-family conflict both at the time of the initial data collection as well as six months later.

The established undesirability of work-family and family-work conflict has led researchers (e.g., Fox & Dwyer, 1999; Greenhaus & Beutell, 1985; Parasuraman & Simmers, 2001) to attempt to determine which family- and work-related stressors are associated with work-family conflict. Identifying these variables is essential, as it is the first step in the process of reducing the levels of work-family conflict that individuals experience.

This study examined 2 stressors of work and family roles, hours worked and the division of household labor, and their effect on the work-family and family-work conflict experienced by employed marital partners in the United States. Results indicate men worked more hours and experienced more work-family conflict than women; however, number of hours worked impacted the degree of work-family conflict experienced for both genders. The amount of hours worked also was a significant indicator of employed women’s satisfaction with the division of household labor. Individuals in dual-income couples reporting equal divisions of household labor experienced less family-work conflict than individuals reporting unequal divisions.
is a positive relationship between work-family conflict and the number of hours worked per week, including overtime. However, because these reviewed studies took place more than 20 years ago, their applicability to today’s changing workforce is somewhat limited. Since 1985, more women are working outside the home, not only in traditionally female professions, but also in professions that break gender-role stereotypes. Current research is needed to address these workforce developments to determine whether they do indeed affect the degree of work-family conflict experienced, especially in women.

Recently, Rijswijk, Bekker, Rutte, and Croon (2004) explored the issue of work and family conflict in women and found that working part-time is associated with lower levels of work-family conflict, but not family-work conflict. These authors proposed that working part-time increases women’s control over their work, thereby reducing the interference experienced within their family roles, and that the lack of relationship between hours worked and family-work conflict is due to uncontrollable home circumstances such as sick children. However, because this study was conducted in the Netherlands, its generalizability to women in other countries is questionable due to varying work norms. In particular, working four days a week is considered full-time employment status in the Netherlands whereas the work week for full-time employees in the United States is generally five days. Also, women within Rijswijk et al. ’s sample who worked full-time were more likely to be employed in managerial positions than women who worked part-time, adding the possibility that the type of employment is a confounding variable to the assessment of work-family conflict.

Previous research has shown that women are more involved than men in their family roles and spend more time engaged in home activities (Parasuraman & Simmers, 2001). In their 1998 study, Almeida, Maggs, and Galambos found that women were recurrently more involved, and spent more time performing household tasks than did their male partners. Although women’s overall involvement in household chores decreased as their work hours increased, husbands did not necessarily take on more household responsibilities. The authors proposed that instead, some chores were either abandoned or completed by children. It is possible that the omission of household duties causes guilt in women and leads to higher levels of work-family conflict.

If dual-career couples must sacrifice their performance of household chores, another alternative to leaving them undone is to hire outside help to complete one or more tasks. The delegation of household work to an outside source can ease couples’ anxiety about balancing work and family responsibilities, therefore reducing the amount of family-work conflict experienced. Duxbury and Higgins (1991) suggested that outside assistance in household tasks could have lessened the degree of family conflict experienced by women in their sample of dual-career couples to levels similar to those experienced by men. In another study, Fox and Dwyer (1999) found that a lack of spousal help and a lack of childcare were significantly related to family-work conflict in their sample of female nurses. As an explanation for these results, the researchers proposed that persons who are able to hire household and childcare assistance can avoid worrying about household responsibilities during work hours.

The purpose of this present study was to examine the impact of the division of household labor and the number of hours worked on work and family conflict, as well as to determine whether the relationships between these variables differ for men and women. First, we hypothesized that individuals in dual-income couples who work full-time or more than full-time would report more work-family conflict than those who work part-time, with women experiencing more work-family conflict than men. Second, it was expected that women who work part-time would be more satisfied with the division of household labor than women who work full-time or more than full-time. Similarly, it was proposed that individuals in dual-income couples who reported more equal divisions of household labor would experience less family-work conflict than individuals in dual-income couples who report unequal divisions. Finally, we hypothesized that individuals in dual-income couples who hire outside help in one or more of the following tasks (e.g., grocery shopping, preparing meals, doing laundry, cleaning house, paying bills, taking care of car maintenance, and/or performing minor household repairs) would experience less family-work conflict than individuals in dual-income couples who do not utilize outside help.

Method

Participants

Participants were 125 men and 125 women of dual-income couples. Men spent more time working per week than did women, 51 hours and 42 hours, respectively. Of all female participants, 48.0% worked full-time, 37.4% worked over full-time, 14.6% worked part-time. In contrast, 32.4% of the men worked full-time, 64.0% worked over full-time, and 3.6% worked part-time. The sample was mostly White (85.2%), followed by 11.2% Black, and 2% Hispanic participants, with 1.6% identifying themselves as other. Men (M = 47.20, SD = 9.91) were slightly older than women (M = 45.64, SD = 9.27), and couples had an average
of 1.68 children. Family income varied from $20,000 to over $150,000, with a median range between $100,000 and $124,999. The majority of participants had received at least some undergraduate education.

Materials

Demographics. Each spouse in the dual-income couple received a separate but identical questionnaire. All participants were asked to report demographics including gender, age, date married, ethnic identification, number of children, education, and family income. They also reported the average number of hours worked per week including overtime. The questionnaires contained 26 items assessing three variables: division of housework, fairness of the division of labor in the household, and work-family/family-work conflict.

Division of housework. Using the scale developed by Grote and Clark (2001), participants were asked questions concerning seven household tasks: grocery shopping, preparing meals, doing the laundry, cleaning the house, paying the bills, taking care of the car maintenance, and performing minor household repairs. The participants were asked to identify which person (i.e., themselves, their partner, or someone from outside the home) primarily performs the task. They also could indicate that the task was not completed. For the purpose of this study, only the number of tasks completed by outside help was assessed. The authors of the current study also added an additional question, “How satisfied are you with the current division of housework,” to assess their overall satisfaction with the division of housework. Participants could respond very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied.

Fairness of the division of labor in the household. Participants evaluated the fairness of the division of labor in the household using a 2-question measure developed by Grote and Clark (2001). For the first question, the respondents were asked to rate how fair they thought the division of labor was for each of the seven tasks on the division of housework scale. A 5-point Likert scale was used ranging from 1 (not fair) to 5 (very fair). The second question asked, “Considering the overall amount of household tasks you and your partner do, to what extent do you think your total share is fair?” Participants responded on a 5-point Likert scale ranging from 1 (not fair) to 5 (very fair). These questions resulted in a total score with a maximum score of 40. Grote and Clark found alpha coefficients ranging from .70 to .72 for their female participants and .67 to .75 for their male participants. The current authors found alpha coefficients of .85 for female participants and .86 for male participants.

Work-family conflict and family-work conflict. The five-item Work-Family Conflict Scale and five-item Family-Work Conflict Scale developed by Netemeyer, Boles, and McMurrian (1996) were used. An example item from the Work-Family Conflict Scale includes “Things I want to do at home do not get done because of the demands of my job.” An example item from the Family-Work Conflict Scale is “Family-related strain interferes with my ability to perform job-related duties.” A Likert scale was used ranging from 1 to 5, strongly disagree to strongly agree, with higher scores indicating greater work-family and family-work conflict. The Work-Family Conflict and Family-Work Conflict scales were scored separately, with possible scores on each scale ranging from 0 to 50. Netemeyer et al. reported alpha coefficients of .88–.89 and .83–.89 for the Work-Family and Family-Work Conflict scales, respectively, and provided evidence for the construct validity of their scales by showing negative correlations between work-family conflict and family-work conflict and organizational commitment and job satisfaction. They also found positive correlations between work-family conflict and family-work conflict and job tension, role conflict, role ambiguity, intention-to-leave an organization, and search-for-another-job. The current authors found alpha coefficients of .92 for the Work-Family Conflict Scale and .89 for the Family-Work Conflict Scale.

Procedure

Researchers distributed 355 questionnaires to dual-income couples using the snowball sampling technique. Participants were instructed to fill out the questionnaires independently and not to discuss their responses with their spouses. The responses were anonymous and each couple chose a code word that was used to match spouses with one another. In the cases where the code word failed to identify paired spouses, the wedding date was used instead. Of the dual-income couples approached, 143 pairs of completed questionnaires were returned by mail, yielding a 40% response rate. The authors of this study eliminated 14 respondents who lived outside of the U.S., as well as 22 respondents who did not answer a majority of questions. An additional 23 dual-income questionnaires were received that did not have a match and therefore were not used in this study. This resulted in a final sample of 250 dual-income participants.

Results

To determine whether part-time, full-time, or over-full-time employment status affected the level of work-family conflict experienced by individuals in dual-income couples, a one-way analysis of variance
work and family conflict and hours worked

(ANOVA) was utilized. Results showed that employment status had a statistically significant impact on work-family conflict $F(2, 229) = 22.532, p = .01$. The Scheffe post hoc analysis indicated that the significant difference ($p = .05$) occurred between the over full-time ($M = 15.19$) and part-time groups ($M = 9.27$), and the over full-time and full-time groups ($M = 11.62$). An independent samples $t$ test revealed that men and women differed in the degree of work-family conflict experienced $t(123) = 2.113, p = .036$. Men ($M = 13.87, SD = 5.12$) reported higher levels of work-family conflict than did women ($M = 12.46, SD = 5.32$).

An independent ANOVA revealed that women who worked part-time, full-time, and over full-time differ significantly in their reports of satisfaction with the division of household labor, $F(2, 121) = 3.29, p = .041$. The Scheffe post hoc analysis did not indicate significant differences between groups; however, difference between the part-time ($M = 3.53$) and full-time ($M = 3.03$) groups approached significance ($p = .073$). Part-time was categorized as working between 1 and 29 hours, full-time was between 30 and 45 hours, and over full-time was 46 hours or more. Time spent working at home was included in the total number of hours worked per week for all three groups.

An independent samples $t$ test showed that individuals in dual-income couples who reported equal divisions of household labor experienced less family-work conflict than individuals in dual-income couples who reported unequal divisions of household labor, $t(239) = 2.178, p = .030$.

An independent samples $t$ test was used to compare the degree of family-work conflict reported by individuals in dual-income couples who utilized outside help for one or more household task to those individuals in dual-income couples did not. The results did not show differences between the two groups, $t(243) = -1.191, p = .235$.

**Discussion**

The first hypothesis, that employment status (part-time, full-time, or more than full-time) would affect the degree of work-family conflict experienced by individuals in dual-income couples, was supported by the data. However, contrary to our expectations and to previous research (e.g., Cinnamon & Rich, 2002), men experienced more work-family conflict than did women. One possible explanation for this finding is that on average the women in our sample worked significantly fewer hours per week than their male partners, which could result in less opportunity for work to interfere with family. Also, it is conceivable that the men in this sample placed a higher importance on their family roles than men have traditionally done and therefore experienced more distress when their work interfered with their family. Future research on this topic should assess whether men and women with differing role priorities (e.g., work, home, or both) report differing levels of work-family and family-work conflict, while controlling for the number of hours spent working each week.

The second hypothesis, that women who work full-time or more than full-time would be less satisfied with the division of household labor than women who work part-time, also was supported. This result, coupled with the previously mentioned finding that part-time employment status is associated with the lowest levels of work-family conflict, provides compelling evidence for the benefits of working less than thirty hours per week. Surprisingly, however, women who worked over full-time were more satisfied with the division of household labor than women who worked full-time. Perhaps women who work more than forty-five hours per week are less concerned with household chores, and rather than causing themselves to become stressed about these home responsibilities, they and their spouses simply acknowledge that some tasks may not be completed. Future research should address this possibility.

The hypothesis that individuals in dual-income couples reporting equal divisions of household labor would experience less family-work conflict than individuals reporting unequal divisions was supported by the data. It is important to note that the scale used to measure the division of household labor did not evaluate the actual amount of housework done by each partner, but instead assessed the degree to which individuals believed the division of household labor was fair. Future research should examine whether individuals’ perceptions of the amount of housework being performed by their spouses is an accurate reflection of the spouses’ actual contribution to household chores. Also, as noted by Chadwick, Albrecht, and Kunz (1976), it is the disparity between spouses’ ideas of family roles that causes conflict in the home, with the greatest conflict occurring when there are differences in expectations of spousal help in housework and actual spousal performance of these tasks. If family role expectations are discussed and agreed upon in the beginning of the marriage, the division of household labor may be less likely to cause conflict.

Finally, the hypothesis that couples who hire outside help for household tasks would experience less family-work conflict than couples who do not utilize outside help did not find support in the data. One possible explanation for this is that participants were asked about assistance from outside resources only on specific home tasks, not on childcare. The authors...
of this study surmise that couples experience more family-work conflict as a result of concern for their children rather than for housework, so had outside help for childcare been assessed, the results may have been different. Also, the sample size of couples who did not utilize outside help was twice that of the couples who did, which is a possible explanation of the nonsignificant results. Future research should address the issue of whether childcare or housework is the main source of anxiety surrounding family-work conflict, and also should explore whether help with childcare reduces the amount of family-work conflict experienced.

This study has some limitations, mainly in regards to the sample. First, because the median family income was so high, this sample is not representative of the general population, calling into question the generalizability of the results to groups with low socioeconomic status. In addition, there was little racial variability, and efforts are being made to reduce the homogeneity of the sample for future research. Also, even though participants were instructed not to discuss the questionnaire with their spouses, there is no guarantee that they did not do so. Participants who did converse with their spouses about the questionnaire might not have been completely honest in their responses.

Despite these mentioned limitations, this study remains as an important contribution to the general knowledge of work-family conflict, family-work conflict, hours worked, and the division of household labor. Several factors thought to be related to work-family and family-work conflict were assessed, with results indicating that hours worked impacts work-family conflict as well as satisfaction with the division of household labor, and that equality of the division of household labor affects the degree of family-work conflict experienced. Future research should be conducted to determine whether these findings can be replicated using other samples.

References

The loss of a child has been described as one of the most traumatic events a parent will ever endure (Schwab, 1990). Parents may have to cope with the death of a child due to accidents, suicides, chronic illnesses, and homicides. As some researchers have found (Murphy, Johnson, Wu, Fan, & Lohan, 2003; Wickie & Marwit, 2000), different causes of death may be associated with differences in parental adjustment and coping patterns. For example, Murphy et al. found that parents whose child was murdered experienced more post-traumatic stress disorder (PTSD) symptoms after the death than parents whose child died by suicide. One particular type of loss that has received very little research attention is the loss experienced when a child is missing. A type of loss that has received some research attention is bereavement associated with homicide. Prior research has examined how parents of murdered children adjust and cope with their loss. According to the Federal Bureau of Investigation’s Uniform Crime Reports (2001), of all victims of murder reported in 2000, 3,247 were younger than 22 years old with 1,300 under 18. These statistics illustrate the importance of understanding and researching parental bereavement. In addition to the prevalence of homicide, the nature of the crime is another reason to focus on parental bereavement associated with homicide.

According to Rinear (1988), homicide differs from most criminal behaviors in specific and important ways. When an individual is a victim of murder, the surviving family members are forced to handle the legal aspects of the crime; in most other crimes, the victim is typically responsible for handling the legal issues. Therefore, the parents of murdered children not only have to deal with the loss of their child, but they also may have to focus their attention on the legal aspects of the murder. Indeed, Peach and Klass (1987) found that until parents have dealt with the legal issues, they may have difficulty resolving their grief. Further, the nature of murder is violent and tends to create interest for the general public (Rynearson, 1984), and this may result in the parents’ bereavement being publicly displayed. Thus, parents of murdered children not only have to adjust and cope with their loss, but they

**Adjustment and Coping Differences Between Parents of Missing and Murdered Children**

This study explored whether parents of murdered children and parents of missing children, presumed deceased, differed in their coping strategies and adjustment. Participants (21 parents of murdered children and 18 parents of missing children, presumed deceased) completed the Hogan Grief Reaction Checklist and 2 subscales of the Coping Strategy Indicator. A series of t tests indicated no significant differences between the 2 groups of parents. When the data were reanalyzed limiting the sample to parents whose children disappeared or was murdered within the past 5 years, it was found that parents of murdered children were seeking significantly more support than parents of missing children.

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also have to deal with public attention. Indeed, according to Dannemiller (2002), responses from the public are often the most difficult issues these particular parents faced. This further complicates what a parent is forced to endure.

Prior researchers (Amick-McMullan, Kilpatrick, Veronen, & Smith, 1989; Rynearson, 1984; Rynearson & McCreery, 1993) have examined how family members of homicide victims adjust to their tragedy. Clinical findings indicate numerous sequelae for the bereaved relative of a homicide victim including reoccurring and uncontrollable visions of the murder, detailed and persistent nightmares of the murder, fear, anger directed toward the murderer, avoidance of violence, and an increase in self-protection (Rynearson). Similarly, Burgess (1975) found that survivors became more sensitive to the possibility of crime occurring and dealt with that awareness by adding additional protection. Illustrating the severity of the symptoms associated with this type of bereavement, Rynearson and McCreery found that the majority of the participants were prescribed medication to treat sequelae (e.g., anxiety, insomnia, depression).

For parents of murdered children, the sequelae are similar to that experienced by other bereaved relatives. Specifically, symptoms of post-traumatic stress disorder have been consistent findings for parents of murdered children (Murphy et al., 2003; Rynearson, 1988). Murphy et al. (2003) reported that parents of murdered children showed higher levels of PTSD compared to parents who were bereaved by suicide. Similarly, Rynear’s study found that parents bereaved by homicide experienced symptoms of PTSD (e.g., persistent and invasive memories of the murder, repetitive nightmares of the murder, and problems with memory). Additionally, these particular parents developed fears for themselves and other family members (Peach & Klass, 1987; Rynear). Other sequelae found for parents of murdered children include anger, a desire for revenge, and the inability to trust people (Peach & Klass). Indeed, Wickie and Marwit’s (2000) findings suggest that compared to parents whose child died by accident, parents of murdered children hold more negative views in regards to the benevolence of the world.

In addition to the previously stated sequelae, bereaved parents also experience a tremendous sense of grief (Schwab, 1990) and guilt (Miles & Demi, 1986; Murphy et al., 1999) pertaining to the tragedy involving their child. Indeed, guilt is one of the most deeply felt emotions experienced by a bereaved parent, regardless of the cause of death (Miles & Demi). Personal relationships also may suffer as the result of the death of a child. Peach and Klass (1987) found that the death of a child is a taboo topic and alienates the parents of a murdered child from their normal support systems. Indeed, this strain on an individual’s support system may extend to the marital relationship (Parkes, 1995; Schwab, 1990). For example, Murphy et al. (2003), referring to parents of children who experienced a violent death (i.e., homicide, suicide or accident), reported that “all parents reported deterioration in their marital satisfaction over time” (p. 57).

Although there is some literature available on parents of murdered children, there is little research on parents of missing children. Parents of missing children, however, represent a substantial population. Sedlak, Finkelhor, Hammer, and Schultz (2000) estimated that in 1999 the number of children missing from caretakers was 1,315,600. During that year, it was estimated that there were 58,200 nonfamily (e.g., friends, acquaintances, and strangers) abductions (Finkelhor, Hammer, & Sedlak, 2002). Of these 58,200 nonfamily kidnappings, there were an estimated 115 stereotypical kidnappings. A stereotypical kidnapping was defined as a “nonfamily abduction perpetrated by a slight acquaintance or stranger in which a child is detained overnight, transported at least 50 miles, held for ransom or abducted with intent to keep child permanently, or killed” (Finkelhor et al., p. 2). Forty percent of these particular kidnappings resulted in the child being murdered, and 4% of the time the child was not found.

Parents of missing children may be bereaved individuals, especially when the abduction is by a nonrelative. These parents may experience a loss similar to parents of murdered children, and they also may have to endure public scrutiny and extensive contact with the criminal justice system. When a child is missing, however, the loss is surrounded with much ambiguity (Fravel & Boss, 1992). At the most basic level, for example, the parents do not even know if their child is alive. As Fravel and Boss noted, this ambiguity makes coping with the loss a more difficult adjustment to accomplish and may require a balance between “hope and acceptance” (p. 144). According to Boss (1999), ambiguous loss can result in personal and family problems because the bereaved cannot experience the normal coping and grieving processes. In comparing the adjustment associated with a missing child and the stages experienced during bereavement, Lloyd and Zogg (1986) note that parents of missing children clearly experience the stages of denial, anger, guilt, and depression; yet the final stage, acceptance, is not experienced until the outcome of the child is determined. Thus, as Fravel and Boss noted, unlike parents who know the outcome of their child’s tragedy, parents of missing children cannot grieve, mourn, or
find closure. Both parents of murdered children and parents of missing children, presumed deceased, however, may survive this trauma if they learn to cope with what happened.

Coping strategies are designed to assist individuals in resolving problems, relieving mental agony, and decreasing the occurrence of future problems (Aldwin & Revenson, 1987). Effective coping strategies can aid a bereaved parent in his or her loss. When a parent experiences the death of a child, however, the mourning process is complicated (Rando, 1992). When individuals experience complicated mourning, they tend to employ two coping strategies. In addition to denying the pain, they also may “hold onto, and avoid relinquishing, the lost loved one” (Rando, p. 45), thus complicating the mourning process. There is not enough information, however, to understand how parents of missing children cope with their unique loss. For example, although parents of missing children, presumed deceased, also experience a loss, it is not known if they would employ similar strategies to parents of murdered children.

The need to understand coping of bereaved individuals is illustrated by Lehman, Ellard, and Wortman’s (1986) study. Lehman et al. explored thebereaved’s perception of helpfulness; participants were individuals who had lost a spouse or a child in a motor vehicle accident. Contact with similar others and people expressing concern were rated as the most (13% and 12%, respectively) helpful acts. Friends, family, or therapists encouraging a quick recovery and giving advice were rated the most unhelpful (22% and 21%, respectively) acts. Prior research (Schwab, 1990) has found that bereaved parents are critical of professionals, believing that professionals tend to lack understanding of the grief bereaved parents experience. According to these parents, these professionals do not seem to understand the duration it takes to mourn the loss of a child (Schwab). It is crucial for researchers to examine parents of missing and murdered children so professionals can more sensitively assist in these parents’ bereavement.

Although there has been some research on bereaved parents, it is limited. Researchers are reluctant to explore bereavement, in part, because the topic is sensitive in nature. Previous research, however, has shown that participation in bereavement research can be beneficial (Cook & Bosley, 1995). The entire sample of Cook and Bosley’s study reported that participating in bereavement research gave them an opportunity to share their feelings. Cook and Bosley also found that the participants felt as if they could help other bereaved individuals by participating in bereavement research.

Parents of murdered children and parents of missing children experience some similar emotions, and both experience a profound loss. For parents of missing children who are presumed dead, this loss is without confirmation. Without the confirmation of death, it is difficult for these parents to accept the loss. The purpose of this study was to examine the coping and adjustment differences between parents of murdered children and parents of missing children, presumed deceased. It was hypothesized that parents of missing children and parents of murdered children would differ significantly regarding their adjustment to the loss of their child and the coping strategies they employ. Specifically, it was hypothesized that parents of missing children would be affected more negatively in their adjustment and coping due to the ambiguity surrounding their loss.

**Method**

**Participants**

Participants in this study were 21 parents of murdered children (3 fathers, 18 mothers) and 18 parents of missing children (5 fathers, 13 mothers), presumed deceased. Among the 21 parents of murdered children, there were two married couples; there was one married couple among the 18 parents of missing children. All of the parents were contacted through nationwide support groups that assist parents whose child is missing or deceased. There was no compensation provided for participation. For inclusion in this study, the target child (i.e., the child who was missing or murdered) must have been younger than 22 years old at the time of death or disappearance. Additionally, for inclusion, the parents of the missing children must have believed that their child was deceased. For both groups, the death or disappearance had to have occurred at least 6 months ago or longer. The mean age of parents of missing children was 51.2 (SD = 8.3) years and was not significantly different from the mean age of parents of murdered children, 50.2 (SD = 5.4) years, t(28.2) = 0.41, p = .69.

**Materials**

**Demographic Measure.** This sheet elicited information about the participants including age, gender, race, marital status, number of children, education, and also included a number of questions regarding the child who is either deceased or currently missing.

**Hogan Grief Reaction Checklist (HGRC).** The HGRC (Hogan, Greenfield, & Schmidt, 2001) is a 61-item measure with six subscales. These include Despair, Panic Behavior, Personal Growth, Blame and Anger, Detachment, and Disorganization. Participants record their responses on a 5-point Likert scale, with the end-
points being does not describe me at all and describes me very well. Hogan et al. reported that the alpha coefficients for the HGRC subscales ranged from .79 for Blame and Anger to .90 for Panic Behavior. The internal consistency for the entire instrument was .90. The test-retest reliability correlation coefficients ranged .56 for Blame and Anger to .85 for Disorganization.

The HGRC was modified slightly for the purpose of this study. Specifically, the HGRC questions that dealt directly with the death of a loved one were altered to include the disappearance of a child (e.g., “I agonize over his or her death” was changed to “I agonize over his/her death or disappearance”). The instructions also were modified to include the disappearance of a child.

Coping Strategy Indicator (CSI). The CSI (Amirkhan, 1990) is a 33-item instrument with three subscales: Seeking Support, Problem Solving, and Avoidance. Participants record their responses along a 3-point scale (i.e., a lot to not at all). This instrument treats coping as situation-specific; respondents recall a recent problem and then report how they coped with it. In this study, the participants specifically were asked how they coped with the death or disappearance of their child. According to Amirkhan’s findings, the CSI has both good internal and test-retest reliability as well as evidence of convergent and discriminant validity. The CSI was modified for the purpose of this study. The Problem Solving subscale items were deleted from the questionnaire because they did not pertain to parents of murdered children. Only the Seeking Support and Avoidance subscales were analyzed for this study; this made the CSI a 22-item measure.

Procedure
In addition to an informed consent form, parents were given the questionnaire, which included demographic questions, the HGRC, and the CSI. The participants also were given a contact information sheet, which included the researchers’ information, and telephone numbers for local mental health agencies.

Based on the preference of the support group, two slightly different methods were used to obtain completed questionnaires. For most of the organizations, the support group leaders mailed the consent form, questionnaire, cover letter from agency, and contact sheet to the participants. The participants then mailed the completed consent form and questionnaire back to the researchers. For other organizations, the group leader gave the members envelopes that contained the consent form, the questionnaire, and the contact sheet. Participants completed the questionnaire on their own time and mailed the consent form and questionnaire directly back to the researchers.

Results

Descriptive Data
When analyzing the results of this study, the parents were divided into two groups, parents of missing children and parents of murdered children. There was no significant difference in the number of children the parents of missing children had ($M = 2.33, SD = 1.14$), and the number of children the parents of murdered children had ($M = 2.33, SD = 0.91$), $t(32.5) = .00, p = 1.00$. As can be seen in Table 1, for both groups of parents, the majority were Caucasian, married, and had a college education. Due to the low frequency on several of the descriptive variables, these variables were collapsed in order to compare across groups. Using chi-square analysis, no statistically significant difference emerged for marital status (i.e., married versus not married), $\chi^2 (1, N = 39) = 0.51, p = .48$, or for education (i.e., high school versus beyond high school), $\chi^2 (1, N = 39) = 0.20, p = .65$.

Additionally, the two groups were compared on information regarding the target child. The time since the disappearance or murder was not statistically significantly different between the two groups of parents, $t(27.4) = -.02, p = .98$. The mean length of time

<table>
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<table>
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<tbody>
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<td>0</td>
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<table>
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<th>Education</th>
<th>Missing Group</th>
<th>Murdered Group</th>
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<td>19</td>
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<tr>
<td>Trade School</td>
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</tr>
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<td>11</td>
</tr>
<tr>
<td>Graduate Degree</td>
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for the parents of missing children group was 55.2 (SD = 85.6) months, and for the parents of murdered children group it was 55.7 (SD = 52.8) months. The age of the child who was missing or murdered also was not significantly different between the two groups, t(34.3) = 0.54, p = .59. For parents of missing children, the mean age of their child at the time of the disappearance was 18.1 (SD = 2.4) years; ages ranged from 11 to 21 years. For parents of murdered children, the mean age of the child at the time the child was murdered was 17.5 (SD = 3.7) years; ages ranged from 4 to 21 years. In the parents of missing children group, there were 10 boys and 8 girls who were missing. None of the parents knew who was responsible for the disappearance of their child. In the parents of murdered children group, 16 of the children were boys, while only 5 were girls. For parents of murdered children, of those who answered the question (20/21), the majority (94%) reported that they knew who was responsible for the murder of their child. Given the design of the study, it is not known if the responsible party was arrested and punished.

Hypothesis Testing
The two groups of parents were compared on two different measures, the HGRC and the CSI. As seen in Table 2, the two groups of parents did not differ significantly on these scales. In further examining the data, however, length of time since the murder or disappearance was significantly correlated with the Blame and Anger subscale, r(n = 38) = -.33, p = .04. There also was a trend for the length of time since the disappearance or murder of the child to correlate with the Panic Behavior, r(n = 38) = -.30, p = .07; and the Seeking Support, r(n = 39) = -.30, p = .07, subscales.

In light of these findings, the data were reanalyzed limiting the sample to those parents whose child disappeared or was murdered within the past 5 years. When this was done, a difference between the two sets of parents emerged on the Seeking Support subscale, t(26) = -2.73, p = .01. Parents of murdered children had higher scores on support seeking (M = 28.46, SD = 4.31) than parents of missing children (M = 23.60, SD = 5.10).

Discussion
Because a significant number of parents are forced to deal with the tragic loss of their child, it is important to examine the nature of their bereavement. Further, in order to understand and assist these parents, it is important to examine factors, such as the cause of the child’s death, that may impact parental adjustment. Although some research has compared parental loss due to accidents, suicides, and homicides (Murphy et al., 1999; Murphy et al., 2003), research has not compared the adjustment and coping differences between parents of missing children and parents of murdered children. Both groups of parents experience a loss, but one critical difference between the groups is that for parents of murdered children,

<table>
<thead>
<tr>
<th>TABLE 2</th>
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<tr>
<td>Differences Between Parents on Adjustment and Coping</td>
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<table>
<thead>
<tr>
<th>Measures</th>
<th>Missing Group</th>
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<tr>
<td>HGRC</td>
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<tr>
<td>Despair</td>
<td>36.61</td>
<td>36.10</td>
<td>0.13 (36.9)</td>
</tr>
<tr>
<td>Panic Behavior</td>
<td>32.44</td>
<td>33.45</td>
<td>0.26 (35.5)</td>
</tr>
<tr>
<td>Personal Growth</td>
<td>34.94</td>
<td>37.00</td>
<td>0.62 (36.9)</td>
</tr>
<tr>
<td>Blame and Anger</td>
<td>18.22</td>
<td>16.45</td>
<td>0.72 (29.2)</td>
</tr>
<tr>
<td>Detachment</td>
<td>19.11</td>
<td>17.52</td>
<td>0.61 (33.2)</td>
</tr>
<tr>
<td>Disorganization</td>
<td>18.94</td>
<td>20.50</td>
<td>0.61 (32.7)</td>
</tr>
<tr>
<td>CSI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeking Support</td>
<td>23.72</td>
<td>26.90</td>
<td>1.85 (36.4)</td>
</tr>
<tr>
<td>Avoidance</td>
<td>22.33</td>
<td>21.23</td>
<td>0.85 (36.9)</td>
</tr>
</tbody>
</table>

Note. HGRC = Hogan Grief Reaction Checklist, CSI = Coping Strategy Indicator. *p < .05. For parents of missing children N ranged from 17 to 18. For parents of murdered children N ranged from 20 to 21.
the loss is final. In contrast, for parents of missing children, the loss is surrounded with ambiguity, and these parents do not experience the finality of their tragedy. This study was designed to examine whether the differences between these two groups of parents influenced their adjustment and coping strategies.

Contrary to what was hypothesized in this study, no overall significant differences emerged between the two groups of parents on the HGRC or the CSI. Both groups experience a significant loss, and these particular parents appear to be similarly adjusted and to be using similar coping strategies to deal with their loss. Because other factors may have influenced the results, however, caution needs to be exercised when reviewing these results. For example, for both groups of parents, an average of approximately 4½ years had elapsed since the death or disappearance of their child. Previous research (e.g., Murphy et al., 2003; Wickie & Marwit, 2000) suggests that the elapsed time since the loss may impact parental bereavement. It is possible, then, that the two groups of parents in the current study may have initially varied in their adjustment and their use of coping strategies, but as time progressed, their adjustment and coping strategies became similar. Indeed, when the data were reanalyzed to only include parents whose child was murdered or disappeared within the past 5 years or less, a significance difference emerged on the Seeking Support subscale.

Parents of murdered children were seeking significantly more support than parents of missing children, when length of time was limited to 5 years or less. Several explanations for this finding are possible. The support seeking behavior of parents of murdered children may be an acknowledgment of their loss. For parents of missing children, the loss is surrounded with ambiguity, and these parents may not be fully accepting their loss. Although for inclusion in this study all the parents indicated that they believed their child was deceased, parents of missing children may be holding onto the hope that their child will return. Further, because these particular parents do not have a definitive answer to the status of their child, they may not know the type of support they need. Additionally, because of the ambiguity of their loss, parents of missing children may not have found previous social support helpful, and so they have stopped seeking it.

Although not a focus of the study, one of its interesting findings was the relationship between elapsed time since the loss and adjustment. When both groups of parents were combined, greater elapsed time since the loss was associated with less anger and blame. Similarly, there were trends for greater elapsed time to be associated with less panic behavior and less support seeking. These findings are consistent with other studies (e.g., Hogan et al., 2001; Murphy et al., 1999; Wickie & Marwit, 2000) that have found that bereavement changes with time. For example, mental distress (Murphy et al., 1999) and intensity of the grief (Wickie & Marwit) has been found to decrease with time. Thus, this study joins others (e.g., Murphy et al., 1999; Wickie & Marwit) in illustrating the need for longitudinal research in this field.

In addition to its small sample size and cross-sectional design, several other limitations of the current study need to be considered. For example, for ethical considerations, all participants in this study were members of support groups, which limits the generalizability of the study. It is not known whether similar findings would have emerged if parents not in a support group had participated. An additional limitation is the heterogeneous nature of the sample regarding the contextual variables surrounding the loss. For example, there was wide variation in the age of the child at the time of his or her murder or disappearance. Some children were as young as 4 years old, whereas other children were as old as 21 years of age. Additionally, parents completed the questionnaire at different intervals since the murder or disappearance. For example, some children disappeared 10 months ago whereas others have been missing for over 31 years. Because of these and other limitations, the findings of the current study should be viewed as exploratory in nature.

The results of this study indicate the need for greater research in the area of parental bereavement. In addition to employing larger sample sizes and longitudinal research designs, future research needs to further explore contextual variables (e.g., gender and age of child, elapsed time since incident) that may play a significant role in the parents’ adjustment and coping. Additionally, inclusion of a wider variety of coping styles and adjustment measures may be helpful in further delineating the bereavement of these parents. Finally, interviews with the parents would provide valuable qualitative data. Indeed, several parents suggested that interviews be conducted, believing that an interview would be more sensitive to the circumstances of the parents and that more valuable results would be obtained.

Missing and murdered children are an unfortunate reality for many parents. Despite this, there has been relatively little empirical research focusing on the parents of murdered children and even less focusing on parents of missing children. Research, however, is needed to have a greater understanding of these parents in order to more appropriately assist these parents. As Amick-McMullan et al. (1989) noted
in a study of relatives of homicide victims, there is a “profound need for appropriate clinical intervention” (p. 32) with this population. Also highlighting the importance of intervention, Dannemiller (2002) noted that the response of professionals play a critical role in the adjustment of parents of murdered children. With more research providing a clearer understanding of their bereavement, therapists may be better able to adequately assist these parents to cope with their loss.

References
Students who adopt an active role in their own learning are considered self-regulated learners. Self-regulated learning requires students to actively monitor and adjust their behavior, motivation, and cognition (Pintrich, 1995). Self-regulation of behavior is using available resources to construct an optimal learning environment. Self-regulation of motivation is perceiving oneself as capable, successful, and self-sufficient; and self-regulation of cognition is the use of appropriate cognitive strategies to enhance performance (Pintrich; Zimmerman, 1986). Self-regulation typically occurs cyclically. A student begins the cycle by using preexisting knowledge to set a goal and develop a strategy to obtain that goal. The student will then implement that strategy, use feedback to evaluate the effectiveness of the strategy, and make necessary adjustments to it throughout the process. After reaching the goal, a final assessment of the overall effectiveness of the implemented strategy will be used to restart the cycle as another goal is set (Dembo & Eaton, 2000; Zimmerman, 1990, 1998). This continuous cycle of active participation in one’s own learning is a source of many academic advantages.

One advantage of self-regulated learning is exceptional academic performance, and this is evident throughout the educational psychology literature. Pintrich and DeGroot (1990) found that cognitive strategy use and self-regulation were positively correlated with high levels of classroom performance. Students’ perceived efficacy for self-regulated learning was positively correlated with their perceived efficacy for academic achievement, which in turn was positively correlated with actual course grades (Zimmerman, Bandura, & Martinez-Pons, 1992). Self-regulated learning is not only directly correlated with academic achievement; it is also correlated with other indirect indicators of achievement, such as status as an advanced student. Previous research has shown that gifted students and students on advanced achievement tracts use self-regulated learning strategies significantly more than regular students and students of other (lower) achievement tracts (Zimmerman & Martinez-Pons, 1986, 1990).

Because self-regulated learning is advantageous, how a student acquires the capacity to self-regulate when learning becomes an important question. Previous research has shown that modeling is an influential way to introduce self-regulated learning strate-
gies to students (Pintrich, 1995; Schunk & Zimmerman, 1997; Zimmerman, 2001). Another way to introduce self-regulated learning to students is through student lead, interactive education, because when the process becomes public, students are given the opportunity to learn self-regulated learning strategies from each other (Paris & Newman, 1990; Schunk & Zimmerman; Zimmerman, 1998). In addition, newly acquired self-regulated learning skills need to be practiced, and one opportunity for practice is homework (Pintrich; Zimmerman, 1998). Finally, positive feedback, such as higher grades, or positive comments from instructors and parents, also reinforces self-regulatory behavior (Schunk & Zimmerman; Zimmerman, 2001).

Thus, school and home environments are critical to the development of self-regulated learning. Schools should have models of self-regulated learning; these models could be instructors and/or peers (Pintrich, 1995; Schunk & Zimmerman, 1997; Zimmerman, 2001). Instructors should also provide students with opportunities that allow practice of self-regulated learning (Pintrich; Zimmerman, 1998). Additionally, whether at home or at school, an environment that is conducive to self-regulated learning should have minimal distractions (Zimmerman, 2001). Finally, self-regulated learning develops in homes that have parental support for the students' academic achievement (Zimmerman, 1998). Supportive parents assist their children in making time for learning, eliminate distractions in the home, monitor progress, and reinforce successes. Therefore, the ideal environment for the development of self-regulated learning should have models that are familiar and close to the students, an abundance of homework, no distractions from learning, and parental support for the students' academic achievement.

One critical issue for self-regulated learning is whether one can determine where an ideal environment for its development exists. It appears that size of the learning environment is relevant to the development of self-regulated learning. There are smaller student to teacher ratios in smaller schools. Furthermore, there are fewer student-created distractions from learning in small schools than in large schools, and more models per student. Opportunities for modeling in small schools are further improved by their structure. According to Raywid small schools are not in need of as much organization as large schools, allowing them to be structured more communally. A communal environment is flexible, casual, and lacks strict formal organization (Lee & Smith, 1995). According to Lee and Loeb (2000) and Raywid (1998), a communal structure results in more intimate and personal relationships between students and teachers. In addition to fewer distractions and enhanced opportunities for modeling, small schools also have greater parental involvement in their students' learning (Gardner, Ritblatt, & Beatty, 2000). Consequently, small schools may possess an advantage over large schools pertaining to the development of self-regulated learning.

The most common form of secondary school is a public school, and the literature suggests that small public schools would have an advantage over large public schools regarding the development of self-regulated learning. In addition, other forms of secondary schooling may have similar advantages to the small public schools in the development of self-regulated learning. Most parochial schools, which are usually comparable in size to small public schools, should also have fewer student-initiated distractions, more models per student, and a less formal organization. According to Sergiovanni (1995) parochial schools have an advantage over public schools because it is easy to operate a less formal, communal organization with parents who feel a personal commitment to the school through faith. Most parents choose to send their children to parochial schools because they want faith to be part of the children's education. Sergiovanni states that this religious connection increases parental commitment to the school and to the education of the children.

Another option for secondary schooling would be to educate children at home. A home environment for schooling usually provides a very low student to teacher ratio, because there is usually one parent instructing the children of one household. This ratio provides even fewer students per model and diminishes the possible distractions of a classroom environment. Home schooling also shows an obvious parental investment in the education of the children. So, in addition to having similar advantages to small public schools, parochial schools and home schooling also appear to have greater parental involvement than do public schools, which suggests that parochial and home schooling may provide the most ideal environment for the development of self-regulated learning.

Although ample research exists regarding the effects of self-regulated learning on academic achievement, there is a dearth of research regarding the ideal environment for the development of self-regulated learning in secondary schools. Therefore, the purpose of this study was to examine the relationship between secondary school environment and student perceived self-regulated learning. Based on the advantages found in small schools, this study hypothesized that college students who attended small secondary schools would report greater self-efficacy for self-reg-
ulated learning than those who attended large secondary schools. Based on the greater parental involvement apparent in parochial and home schools, this study also hypothesized that college students who attended parochial or home schools would report greater self-efficacy for self-regulated learning than those who attended small public schools.

**Method**

**Participants**

One hundred twenty-five individuals volunteered to participate in the study. Most of the participants were students enrolled in introductory psychology courses at a small Midwestern university and fulfilled a course requirement by participating in the study. Other participants who attended parochial or home schools were recruited outside of introductory psychology courses. The data from nine participants were excluded because the students attended more than one high school during their secondary education and the schools varied in size. The participants were treated in accordance with the “Ethical Principles of Psychologists and Code of Conduct” (American Psychological Association, 2002).

**Materials**

The participants completed a demographic survey, which was created by the experimenter, to obtain information about their college status and secondary school experiences. The demographic survey included items that addressed the size and type of both the junior and senior high schools the students attended as well as whether or not they took any honors, advanced placement, or other types of advanced courses during junior or senior high school. The participants were assigned to one of five groups, based on their responses to the demographic survey. They were categorized according to those who had attended public high schools (n = 83), parochial high schools (n = 23), or home schools (n = 10). The group of participants that had attended public high schools was further categorized by school size using enrollment information from the Kansas State High School Athletic Association (2003). Large (n = 38), medium (n = 24), and small (n = 21) public high schools, respectively, had enrollments ranging from 1,543 to 508, 507 to 132, and 131 to 20 students among their sophomore, junior, and senior classes. The participants also completed a Self-Efficacy for Self-Regulated Learning Scale (Gredler & Garavalia, 2000), which is a 31-item scale with 5-point Likert-type response options used to measure self-reported self-regulatory behaviors of the participants. The Self-Efficacy for Self-Regulated Learning Scale contains five factors: General Organization and Planning, External Regulation, Typical Study Strategies, Environmental Restructuring, and Recall (Gredler & Garavalia). According to Gredler and Garavalia, coefficients alpha for the five factors were 0.87, 0.68, 0.74, 0.74, and 0.73, respectively.

**Procedure**

Participants were run in groups of 30 or fewer, in less than 30 min. The experimenter administered the demographic survey and the Self-Efficacy for Self-Regulated Learning Scale. The participants were debriefed and thanked for their participation.

**Results**

The self-efficacy for self-regulated learning scores were calculated for each participant. Mean scores as a function of high school environment are illustrated in Figure 1. The data from participants who attended medium size public high schools were not included in the analysis because school sizes varied from nearly large to nearly small, and were not uniformly distinct from the other categories. The data from participants who attended parochial schools were also not included in the analysis because the parochial schools varied in size and were, therefore, too variable to categorize as one group. Mean scores (and standard deviations) for participants who attended home, small public, and large public schools were 122.08 (9.32), 117.19 (11.11), and 111.79 (14.00), respectively.

A one factor between groups design analysis of variance was calculated. There was a significant main effect for high school environment, $F(2, 68) = 3.48, p = 0.04$. Tukey post hoc tests ($p < 0.05$) found that par-
participants who attended home schools had higher self-efficacy for self-regulated learning scores than did those who attended large public schools.

A second analysis was conducted to investigate the hypothesis regarding private versus public education. Data from participants who attended parochial and home schools combined were compared to the data from participants who attended public schools. Mean self-efficacy for self-regulated learning scores (and standard deviations) for participants who were privately and publicly educated were 117.73 (15.55) and 113.43 (12.63), respectively. Though privately educated students had higher self-efficacy for self-regulated learning scores, an independent t-test showed no significant difference between privately and publicly educated students, \( t(1, 121) = 2.60, p = 0.11 \).

### Discussion

The hypothesis, that college students who attended home schools would report greater self-efficacy for self-regulated learning than those who attended public schools, was supported. These data suggest that the home school environment, the idealized personal environment, with enhanced opportunities for modeling due to smaller student to teacher ratios, fewer distractions, and flexible organization, benefits the development of self-regulated learning. Additionally, the parental investment in home schooling may also contribute to what these data suggest to be the best environment for the development of self-regulated learning. However, the hypothesis, that college students who attended small public schools would report greater self-efficacy for self-regulated learning than those who attended large public schools, was not supported; although the mean scores were in the expected direction. Future research testing a larger group of college students who attended small public schools may obtain significant results.

The hypothesis, that students who attended parochial schools would report greater self-efficacy than those who attended public schools, was not directly assessed because the number of students who attended parochial schools was far less than the number of students who attended public schools. However, to examine the difference in self-efficacy for self-regulated learning between privately and publicly educated students, the data from students who attended parochial schools was combined with the students who attended home schools and compared to the data from students who attended public schools. Although there was not a significant difference in self-efficacy for self-regulated learning between privately and publicly educated students, like small schools, the results were in the expected direction and approached significance.

The lack of significant results could be attributed to the difference between the group sizes; there were a large number of publicly educated students and a small number of privately educated students. In addition, a number of the private schools had large student populations and could be confounded by school size.

Future research regarding private versus public school environments should draw more participants from parochial and home schools and subcategorize parochial schools according to size. Another limitation to this study is that all of the participants pursued higher education, and this may have provided a sample of students who are naturally very self-regulated. Future research should include a comparison group of participants who did not pursue higher education. Additionally, the findings of this study are limited to schools in Kansas. Future research should include schools from various geographic locations so that the results may be generalized to more schools.

This study is at least a first step in demonstrating that smaller, more personal school environments create an advantage. This advantage seems to be partially due to size, as both small public schools and home schools have fewer students, which results in more models per student, and fewer student initiated distractions. Additionally, previous research has shown that the less structured, more flexible school organization, which is present in small schools and even more present in home schools, results in enhanced relationships between students and teachers (Lee & Loeb, 2000; Raywid, 1998). Thus, smaller secondary school environments seem to lead to enhanced modeling of self-regulated learning, which in turn should lead to the acquisition of self-regulated learning skills. And because previous research has shown that one of the benefits of self-regulated learning is better academic performance, the enhanced modeling present in smaller secondary schools should lead to improved academic performance (Zimmerman & Martinez-Pons, 1986, 1990).

The implications for this research, and future research similar to it, are broad. Education is critical for the successful future of our society and because self-regulated learning is advantageous, it can enhance the quality of education in our schools. There is a current political focus on education in the United States with the No Child Left Behind Act. In order to continue to receive government funding, teachers must improve standardized test scores; it is possible that in order to improve standardized test scores, teachers may begin to teach to the standardized tests. If teachers begin to teach to a specific test, students may not learn other important skills.
Additionally, there is a financial focus on education because of budget crunches nationally and at the state level, as well. These budget crunches could be driving high school consolidation or closure and consequential classroom enlargement. Although research suggests that small classrooms have advantages, in reality classrooms are continually growing farther away from this ideal small size. This research suggests that this classroom enlargement may be detrimental to the development of self-regulated learning and the overall quality of education in our society.

References


It is estimated that psychopaths are responsible for more than 50% of all serious crimes, which makes it imperative for researchers to investigate the nature and etiology of this disorder (Hare, 1993). Psychopathy is characterized by glibness or superficiality, egocentrism, lack of remorse or guilt, lack of empathy, deceitfulness or manipulativeness, and shallow affect (Cleckley, 1976; Hare, 1991). This constellation of traits is most often associated with an antisocial lifestyle (Hare, 1993). Many researchers have suggested that the psychopathic traits of lack of remorse or guilt, lack of empathy, manipulativeness, and shallow affect might be due to a cognitive deficit that inhibits the psychopath’s ability to regulate his or her behavior (see Patterson & Newman, 1993). The purpose of the current study is to examine the possible existence of this cognitive deficit in noninstitutionalized students with psychopathic traits.

According to a rather substantial body of literature, this cognitive deficit is evident in the psychopath’s general learning and information processing difficulties (Bechara, Damasio, & Damasio, 1994; Lykken, 1995; Patterson & Newman, 1993). In particular, psychopaths have demonstrated general insensitivity to punishment, while conversely demonstrating a hypersensitivity to reward (Patterson & Newman). Lykken suggested that the psychopath’s insensitivity to punishment was a result of a dimmed experience of anxiety or fear. According to Lykken’s low-fear hypothesis, psychopaths have difficulty experiencing the emotional components of fear, which results in the psychopath’s lack of motivation to avoid punishment in general. Other researchers have tried to explain the psychopath’s lack of response to punishment in physiological terms. For example, Bechara et al. noted that patients with ventromedial prefrontal damage had personality characteristics similar to that of psychopaths such as a lack of fear of punishment, lack of emotion, and a general lack of conscience. However, possible hypersensitivity to reward in the patients with ventromedial prefrontal damage was not investigated.

A more cognitive-based explanation of a psychopath’s lack of sensitivity to punishment and the presence of resultant antisocial behavior is Patterson and Newman’s (1993) response modulation hypothesis. According to Patterson and Newman, psychopaths have difficulty processing peripheral information when they are engaged in goal-directed behavior. Without

Attention to Environmental Context Cues and Response Modulation: A Measure of Psychopathy and Cognition in a University Setting

Because psychopaths have difficulty in passive avoidance learning, it has been suggested that they have cognitive impediments in response modulation when engaged in reward-driven behavior (Newman, Schmitt, & Voss, 1997). The experimenter assessed psychopathic traits in 90 undergraduate students using the Psychopathic Personality Inventory (Lilienfeld & Andrews, 1996) and compared the performance of the high psychopathy group with the low psychopathy group on a Stroop-like picture-word task (Gernsbacher & Faust, 1991) to examine possible response modulation deficits in noninstitutionalized students. Contrary to the prediction, students with more psychopathic traits performed just as well as students with less psychopathic traits on the Picture-Word Task. The author discusses future research suggestions and possible cognitive differences between institutionalized (unsuccessful) and noninstitutionalized (successful) psychopaths.

Faculty supervisor: Mathew Huss, Creighton University
RESPONSE MODULATION  □ Travers

this peripheral information (e.g., noticing punishment cues or changes in their own emotional states), psychopaths have difficulty evaluating the goal-directed behavior in which they are partaking (Patterson & Newman). Patterson and Newman suggested that this inability to process peripheral information leads to a lack of passive avoidance learning in psychopaths, or in other words, a lack of behavior change in order to avoid punishment. Newman and his colleagues have examined multiple aspects of this prospective cognitive deficit in psychopaths. In one notable study, Newman, Patterson, and Kosson (1987) tested psychopaths and nonpsychopaths on the Wisconsin Card Sorting Task (WCST), a computerized card game in which participants earn money by sorting cards and adapting to changing sorting rules. Looking at response times, Newman and his colleagues found that low-anxious psychopaths paused less after sorting rules were changed than low-anxious nonpsychopaths. These results suggest that when engaged in reward-driven behavior, psychopaths had a more difficult time taking a break to evaluate their behavior, which resulted in an inability to make the necessary behavioral adjustments.

Another study by Newman, et al. (1997) assessed psychopaths and nonpsychopaths on the Picture-Word task (PW; Gernsbacher & Faust, 1991). Originally used to distinguish less-skilled comprehenders from more-skilled comprehenders in a college setting, the PW is a Stroop-like task that presents a word superimposed onto a picture (Gernsbacher & Faust). Before each trial, the participant is instructed to focus attention on either the word or the picture and then decide if it is related to a following picture or word (Gernsbacher & Faust). With this task, Newman et al. found that in the reward-driven trials, low-anxious nonpsychopaths experienced interference from the to-be-ignored stimulus, but low-anxious psychopaths did not. These results suggest that psychopaths suppressed secondary stimuli better than nonpsychopaths when engaged in reward-driven behavior.

In assessing the cognitive deficits of psychopaths, Newman and his colleagues also have investigated the role of anxiety on the expression of psychopathy (Newman & Brinkley, 1997; Newman, MacCoon, Vaughn, & Sadeh, 2005). A substantial amount of research has found differences between primary (low-anxious) and secondary (high-anxious) psychopaths (see Newman & Brinkley). For example, primary psychopaths seem to have relative optimism, high energy, and little negative affect in general (Arnett, 1997), compared to secondary psychopaths whose antisocial behavior seems to be more of a result of negative emotionality or neuroticism than of cognitive deficits (Newman & Brinkley). Primary psychopathy is often characterized as true psychopathy because the reduced anxiety is characteristic of the description of psychopaths. Measures such as the Welsh Anxiety Scale (WAS; Welsh, 1956) and Taylor’s Manifest Anxiety Measure (TMAS; Taylor, 1953) have been the most common measures for assessing the anxiety levels of psychopaths (Newman et al., 2005). Primary psychopaths are less sensitive to punishment and less apt to engage in passive avoidance learning (Newman & Kosson, 1986; Newman, Patterson, Howland, & Nichols, 1990; Patterson & Newman, 1993). At this time, however, it is essential to mention that in all of the studies by Newman and his colleagues mentioned thus far, only male prison populations were examined. Therefore, it is still unclear whether these cognitive deficits apply to nonincarcerated or female psychopaths.

The Psychopathy Checklist Revised (PCL-R), currently the most widely used and most reliable measure of psychopathy, bases a diagnosis of psychopathy on both the individual personal traits (e.g., glibness or deceitfulness) and an antisocial lifestyle (Hare, 1991). It is, however, essential to note that with 50% of a PCL-R score being determined by antisocial behavior, individuals who have no criminal record cannot be diagnosed as psychopaths although they might appear to have psychopathic traits (Lilienfeld, 1998). Subsequently, Lilienfeld and Andrews (1996) created the Psychopathic Personality Inventory (PPI). The PPI is a self-report measure constructed to focus on the personality traits related to psychopathy, instead of the antisocial or behavioral manifestations (Lilienfeld). With this measure, it is hoped that those expressing psychopathic traits might be identified and studied to see if they share the same affective and cognitive deficits as criminal psychopaths.

The present study seeks to uncover possible cognitive deficits in those who exhibit psychopathic traits in a university setting. Although some might be skeptical about finding psychopathy in a sample of college students, Hare (1993) suggested that psychopaths comprise 1% of the general population, with many psychopaths who either refrain from criminal activity or remain undetected by the legal system. Psychopathic traits also have been noted to stay rather consistent from adolescence into adulthood, which would suggest that psychopathy could be measured in a college sample (Hare). Lilienfeld (1998) has suggested that psychopathy should be measured as a continuous variable instead of a taxon, which would allow us to examine those with psychopathic traits, who are not necessarily full-scale psychopaths but express psychopathic traits. Examining those with psychopathic traits instead of those with full-scale psychopathy might
yield more than a 1% incidence rate of psychopathy in the general population. Furthermore, treating psychopathy as a continuous variable might be more empirically and mathematically sound. For example, a study by Marcus, John, and Edens (2004) used PPI archival data from inmates analyzed by three taxometric procedures (mean above minus below a cut, maximum eigen value, and latent mode factor for analysis) to support Lilienfeld’s suggestion that psychopathy is more accurately assessed as a continuous variable rather than a taxon. Furthermore, Edens, Marcus, Lilienfeld, & Poythress (2006) used taxometric and maximum covariance (MAXCOV) analyses to assess the taxometric structure of the PCL-R, and they found that the graphs of the PCL-R scores did not suggest an underlying taxon. Accordingly, measuring subclinical psychopathy or psychopathy on a continuum is in keeping with the available literature. Available evidence suggests that there is not only a definitive difference between the taxonomic distinctions of psychopath and nonpsychopath, but that psychopathic qualities appear on a continuum.

Several studies have examined subclinical psychopathy in college student samples. For example, DeGue and DiLillo (2004) used the PPI (Lilienfeld & Andrews, 1996) to assess psychopathic traits in college students, and their results indicated that psychopathy was a stronger predictor of sexual coercion and misconduct than childhood abuse. Also, Levenson, Kiehl, and Fitzpatrick (1995) used a self-report measure to examine the psychopathic traits of 487 college participants and found disinhibition, and primary and secondary psychopathy to be highly predictive of antisocial behavior in college students. Finally, Salekin, Trobst, and Krioukova (2001) assessed psychopathy in 326 undergraduate students. They found that approximately 5% of their sample had psychopathic traits and that psychopathy was related to other behavioral outcomes. They also found that as in forensic samples, more men than women demonstrated psychopathic traits. These studies concluded that psychopathy can be measured in university populations and that research on psychopathy in noncriminal, university populations has found similar results to the research conducted in criminal populations.

Furthermore, the PW itself was originally used to distinguish less skilled from more skilled comprehenders in a college sample (Gernsbacher & Faust, 1991). Howland, Kosson, Patterson, and Newman (1993) also found poor passive avoidance learning in college students, who scored low on the Socialization Scale (Gough, 1960), which was similar to that of incarcerated psychopaths in a cued reaction time test using right-hand responses. This study indicated that if cognitive deficits of low-socialized college students paralleled those of incarcerated psychopaths, the cognitive deficits of psychopathic college students also might be found to parallel those of incarcerated psychopaths, which is the focus of the current study. As a result, both the PPI and the cognitive Picture Word task have been used previously in independent college samples and have found significant differences between groups of students with different comprehension and passive-avoidance skills within these college samples.

Consequently, it is hypothesized that due to a response modulation deficit, college students who show more psychopathic traits will exhibit faster response times on the PW (Gernsbacher & Faust, 1991) task than those who exhibit fewer psychopathic traits. It is also hypothesized that the anxiety of the participant, as measured by the TMAS (Taylor, 1953), will moderate the relationship between the PPI and PW task, with lower anxious psychopaths exhibiting the fastest PW task response times. Furthermore, I will assess whether the PW scores differ between men and women because Newman and his colleagues have found cognitive deficits only in incarcerated male psychopaths thus far. However, there is not enough literature on the subject to predict whether male and female PW scores will differ and in which direction these possible differences might exist.

Method

Participants

Ninety-two students from introductory psychology classes at a mid-sized, Midwestern, Jesuit university participated in this study. Fifty-six women and 36 men completed the PW (Gernsbacher & Faust, 1991), the PPI (Lilienfeld & Andrews, 1996), and the TMAS (Taylor, 1953). The average age of the participants was 18.7 years. The sample was 80.5% Caucasian, 10.3% Asian, 2.3% Latino, 1.1% African American, and 1.1% Indian. “Other” ethnicity was indicated in the remaining 4.6% of the sample.

Materials

Picture-Word Task. The PW task used in this study was a modified Gernsbacher and Faust (1991) task that was adopted by Newman et al. (1997) to illustrate the lack of attention to peripheral cues that psychopaths exhibit compared to nonpsychopaths. In this task, participants had to decide whether two stimuli were related or unrelated. To accomplish this purpose, a common word was superimposed onto a picture. A “P,” flashed 1000 ms prior to the presentation of the picture-word stimulus, instructed the participant to pay attention to only the picture, while a “W” instructed the participant to pay attention to only the word. The
picture-word stimulus was presented for 700 ms. One hundred ms after the picture-word stimulus, either a word or a picture was presented on the screen for 2000 ms or until the participant responded. Participants’ responses were timed, and their accuracy in determining whether the stimuli were related was measured. For each correct response, the participant received a “correct” message, and for each incorrect response, the participant received a “wrong” message.

Twenty to 25 students were assessed in a computer lab at a time. After typing in their participant ID and trial number into the program, the participants completed 23 practice trials before the actual task began. The task consisted of 80 trials (40 picture trials and 40 word trials) and took approximately 20 minutes to complete. The participants were randomly assigned to two different groups in the PW task (Gernsbacher & Faust, 1991). Each group had the same practice and first trial, but the second trial differed between the two groups in the order of the stimuli and in the timing between the picture-word stimulus and the either-word-or-picture stimulus. Specifically, the second trial of the second condition had 50 ms instead of 100 ms between the presentation of the picture-word stimulus and the either-word-or-picture stimulus. The final dependent value for both groups was the latency of each participant’s response time, which was measured as the time between when the stimulus was presented and when the participant pushed a key to indicate a response.

Psychopathic Personality Inventory (Lilienfeld & Andrews, 1996). The PPI is a self-report measure of psychopathy designed to assess psychopathic traits in nonoffender populations. The PPI consists of 187 questions that require the participant to indicate whether the item is false (coded as “0”), mostly false (coded as “1”), mostly true (coded as “2”), or true (coded as “3”). The PPI is divided into eight subscales, including Machiavellian Egocentricity, Social Potency, Coldheartedness, Carefree Nonplanfulness, Fearlessness, Blame Externalization, Impulsive Nonconformity, and Stress Immunity. Each of these eight subscales have been demonstrated to have internal consistency between .70 and .89 and test-retest reliability between .82 and .94 (Lilienfeld & Andrews). The Machiavellian Egocentricity subscale examines the prevalence of cruel and narcissistic attitudes. For example, one statement on the Machiavellian Egocentricity subscale says, “I always look out for my own interests before worrying about those of the other guy.” The Social Potency subscale examines the degree to which one can influence and manipulate other people. An example of a Social Potency item on the PPI is “Even when others are upset with me, I can usually win them over with my charm.” The Coldheartedness subscale investigates lack of remorse, lack of empathy, and lack of affect. A reverse-coded example of a statement from the Coldheartedness subscale is “I am so moved by certain experiences (e.g., watching a beautiful sunset, listening to a favorite piece of music) that I feel emotions that are beyond words.” The Carefree Nonplanfulness subscale measures the level of indifference that one has when planning future actions. For example, “I generally prefer to act first and think later” is one of the Carefree Nonplanfulness items. The Fearlessness subscale examines the degree of risk-taking and lack of anxiety when participating in risky activities. An example of this item is “When I’m in a frightening situation, I can ‘turn off’ my fear almost at will.” The Blame Externalization subscale assesses how often the person blames others for personal shortcomings or misdeeds. An example of this subscale is “I’ve been the victim of a lot of bad luck in my life.” The Impulsive Nonconformity subscale examines an indifference to socially accepted values. As an example of this subscale, the PPI includes the statement, “I’ve never really cared much about society’s so-called ‘values of right and wrong.’” Finally, the Stress Immunity subscale measures flat affect in response to anxiety-triggering situations. An example statement for this subscale is, “Looking down from a high place gives me ‘the jitters.’” When scored, a higher PPI score means more of a trait, whereas a lower PPI score means less of a trait. As the PPI measures psychopathy as a continuum instead of as a taxon, there is no cut score established.

Taylor Manifest Anxiety Scale (Taylor, 1953). The TMAS consists of 28 statements and requires participants to report the relevance of the statement (mostly false = 1 and mostly true = 2) in their own lives. Statements include such things as “I blush as often and at others” and “I work under a great deal of strain.” A higher score suggests a higher level of anxiety. Having a test-retest correlation of .82 with 5 months between testing and .81 with between 9 and 17 months between testing, the TMAS has been proven reliable when used in cognitive research to assess negative affect and to assure that the cognitive differences found are due to psychopathy and not confounded by negative affect (Taylor).

Procedure

The participants completed the PW task, the PPI, the TMAS, and the demographic questionnaire online in a computer lab. The participants showed identification, signed in, and chose their own participant ID numbers. The experimenter then gave the partici-
Participants were divided into three groups (e.g., high, medium, and low psychopathic trait groups) according to the PPI scores. The effect of the PPI group and sex of the participant on response times in the PW task were analyzed using an ANCOVA. The TMAS scores, measuring anxiety, were used as a covariate.

Results

Before the hypotheses were directly examined, an independent samples t test was conducted to ascertain that the PW (Gernsbacher & Faust, 1991) interference times (the average time of the interference tasks subtracted by the average time of the unrelated tasks) were not due to the different conditions in the PW task. The first condition \((M = 907.70, SD = 327.05)\) versus the second condition \((M = 1006.12, SD = 403.35)\) did not differ significantly in their response times, \(t(88) = 1.28, p = .21\). Therefore, the order of the stimuli and the timing differences did not affect the response times. As a result, data were collapsed across PW conditions for all further analyses.

To test the hypothesis that higher PPI (Lilienfeld & Andrews, 1996) scores would correlate with less interference in the PW task, the participants were first split into three equal groups according to their PPI scores: high PPI scores \((362.00-459.82)\), mid PPI scores \((328.00-361.42)\), and low PPI scores \((248.00-327.01)\)*. Each group had 29 participants. The mean and standard deviation of the PPI also were similar to the construction sample of the PPI (Lilienfeld & Andrews, 1996). A between-subjects 3 (PPI: high, medium, and low) \(\times\) 2 (sex: man vs woman) ANCOVA was then conducted to assess the effect of the PPI score and the sex of the participant on the response time of the PW task. The TMAS score was used as a covariate in the ANCOVA. Not supporting our hypotheses, the high PPI scoring group \((M = 961.45, SD = 312.66)\) did not have significantly reduced response times on the PW task than the low PPI scoring group \((M = 995.62, SD = 278.13)\), \(F(2, 86) = .456, p = .64\); and TMAS scores acted as a significant covariate for the results, \(F(1, 86) = .01, p = .93\). Furthermore, female participants \((M = 999.40, SD = 357.47)\) did not have significantly different response times on the PW task than male participants \((M = 889.88, SD = 379.30)\), \(F(1, 86) = 2.928, p = .16\). Finally, there was not a significant interaction between PPI groups and the sex of the participant on the PW response times, \(F(2, 86) = .055, p = .95\).

Discussion

It was hypothesized that university students with more psychopathic traits would have lower PW (Gernsbacher & Faust, 1991) interference times than students with less psychopathic traits, as was found in

* The data was also analyzed looking at standard deviations +/-1, and the results were identical. Subsequently, we chose to split the PPI data using the median split, as this was in keeping with the previous literature.
prior studies using a male prison population (Newman et al., 1997). However, our results failed to reveal significant differences between those who scored high on the PPI and those who scored low on the PPI. Moreover, contrary to our hypotheses, the levels of anxiety of the participant, as assessed by the TMAS, also had no significant effect on the interference times of the participants. Furthermore, the sex of the participant did not affect the interference times of the participants on the PW task, which is important to note because Newman et al.’s sample did not include women.

Our findings of no significant differences between those with high psychopathic traits and those with low psychopathic traits on the PW (Gernsbacher & Faust, 1991) does not necessarily suggest that the results of Newman et al. (1997) need to be revised or questioned. The two investigations were conducted on completely different populations. Furthermore, there were some limitations to the current study. First, unlike Newman et al.’s study, there were no rewards offered for each correct response in the PW. Nevertheless, the researcher’s attempt to play upon the participants’ competitive instincts to engage the participants in reward-driven behavior did appear at least moderately effective. For example, multiple participants asked to see their results compared to their peers in the study. However, it is possible that the intangible competitive glory promised to the participants was not as motivating as receiving small monetary rewards for each correct answer. Moreover, some participants might have interpreted the competitive challenge offered by the investigator as more of a threat of losing than an opportunity to win, which might have diminished some participants’ motivation to do well on the task (Gray, 1987).

Newman et al. (1997) also used different measures to assess psychopathy and anxiety. For example, Newman et al. used the PCL-R instead of the PPI. Although Poythress, Edens, and Lilienfeld (1998) found the PPI scores and the PCL-R scores of 50 incarcerated young offenders to be positively correlated (r = .54), more research should be conducted to confirm the relationship between the PCL-R and the PPI. Until more research is conducted in this area, researchers should be cautious when trying to compare the results of a study using the PCL-R with the results of a different study using the PPI. Furthermore, in this study, the TMAS was used to examine anxiety, whereas Newman et al. used the WAS to examine anxiety. Watson and Clark (1984) found a strong correlation between the TMAS and the WAS (r = .85). Nevertheless, Kaliappan, Rajalakshmi, & Sarada Menon (1982) suggested that the TMAS might be confounded with state anxiety. Therefore, if the circumstances of the experiment were found to be exceedingly anxiety-producing for individual participants, this might have affected their TMAS scores, which might have limited the correlation between the TMAS and the WAS. A further limitation was the relatively small sample size used in this study, which could have resulted in a more restricted range of scores. Nonetheless, if psychopathy is truly best measured as a continuum, then differences should have been identifiable in the present study.

Many questions arise regarding the construct of psychopathy and the possible differences between institutionalized (unsuccessful) and noninstitutionalized (successful) psychopaths. Despite the current scarcity of research on this topic, some notable differences have been found between successful and unsuccessful psychopaths that indicate stark contrasts between the two types of psychopathy (Ishikawa, Raine, & Lencz, 2001; Raine, Ishikawa, & Arce, 2004; Yang, Raine, & Lencz, 2005). Ishikawa et al. found that successful psychopaths (as measured by a high score on the PCL-R but a lack of a criminal record) actually performed some cognitive tasks better than both the unsuccessful psychopaths and the control group. Specifically, the successful psychopaths showed the best general memory and the best executive functioning of the three groups (Ishikawa et al.). Furthermore, on the WCST, successful psychopaths solved more categories and made fewer errors than both the unsuccessful psychopaths and the control group (Ishikawa et al.). These results indicate that successful psychopaths might not suffer from the same cognitive deficits as unsuccessful psychopaths and might actually perform better than the general population in such cognitive tasks. The fact that the successful psychopaths outperformed even the nonpsychopathic control group in these cognitive tasks suggests that increased intelligence might be one of the factors that prevents successful psychopaths from being institutionalized.

Furthermore, MRI’s have revealed physiological differences between successful and unsuccessful psychopaths. Yang et al. (2005) found that even though unsuccessful psychopaths had a 22.3% less prefrontal gray matter than controls, successful psychopaths did not display this lack of gray matter. Furthermore, because animal studies have demonstrated a link between hippocampal asymmetry and disinhibition (Gorenstein & Newman, 1980), it has been suggested that a psychopath’s hypersensitivity to reward and lack of passive avoidance learning could be due to an abnormally asymmetrical hippocampus. Raine et al. (2004) found that unsuccessful psychopaths had asymmetrical hippocampuses, and they found that successful
psychopaths did not have hippocampal asymmetry, which might suggest that successful psychopaths are capable of learning from punishment and of paying attention to peripheral clues even when involved in reward-driven behavior (Raine et al.).

The behavioral, physiological, and cognitive differences between successful and unsuccessful psychopaths suggest further support for psychopathy being divided into (at least) the two subtypes of successful and unsuccessful psychopathy. Future research based on Newman et al.’s (1997) response modulation hypothesis should focus on whether or not successful and unsuccessful psychopaths differ in their ability to use peripheral cues to guide their behavior. A matched-subject design in which institutionalized populations would be matched with noninstitutionalized populations according to their PPI scores would be best able to decipher whether there are differences between successful and unsuccessful psychopaths in response modulation. Trials on the WCST and the PW task could be used to determine the possible cognitive differences between the successful and unsuccessful psychopaths. After the trials, it could then be determined whether the between-group differences (successful vs. unsuccessful psychopaths) would be greater than the within-group differences (more psychopathic traits vs. fewer psychopathic traits).

Understanding the possible cognitive differences between successful and unsuccessful psychopaths is crucial to our efforts to understand both the construct and etiology of psychopathy. If psychopathy and its subsequent cognitive deficits are an inborn trait as Hare (1991) suggests, what abilities or experiences allow successful psychopaths to overcome these traits? Could it be that the cognitive deficits of psychopathy are analogous to a plump body type that is genetically inherited but overcome by a strict diet and extensive exercise? Or are the cognitive deficits of psychopathy simply not part of the disorder for the successful psychopath? It is important for researchers to examine if and how response modulation deficits can be overcome in order to design useful treatment options for psychopaths (Wallace & Newman, 2004). Furthermore, understanding whether successful psychopaths do not commit crimes, like the unsuccessful psychopath, or simply do not get caught are essential to our understanding of the underlying constructs of both of these types of psychopathy. Specifically, in designing treatment options we should examine closely the possible differences between successful and unsuccessful psychopaths in order to make sure that we are treating the symptoms of psychopathy that will limit the antisocial activity of the individual psychopath. For example, if we find a way to eliminate the cognitive deficits of unsuccessful psychopaths, we should be careful to make sure that we are not simply turning unsuccessful psychopaths into successful psychopaths, who are possibly better at concealing their illegal activity.

Furthermore, other research demonstrates that the cognitive deficits found by Newman and his colleagues (1997) do not necessarily apply to all psychopaths. For example, Vitale and Newman (2001) compared incarcerated female psychopaths and incarcerated female nonpsychopaths and found that unlike their male counterparts, the two groups did not differ in their scores on the WCST. Vitale and Newman’s study indicates that it is a possibility that female psychopaths might not have the same cognitive deficits as male psychopaths. The current results did not indicate cognitive deficits in men or women high in psychopathic traits. Furthermore, it appeared that the African-American psychopaths in Newman et al.’s study also did not seem to suffer from the same cognitive deficits of the PW task. Therefore, it is necessary for future research to examine whether these possible cognitive deficits can be generalized to populations such as women, African-American, and nonincarcerated psychopaths.

In essence, Newman et al. (1997) found that psychopaths were unable to partake in response modulation because of certain cognitive deficits that impeded passive avoidance learning. Nevertheless, future research should examine whether or not a lack of response modulation is applicable to all psychopathic individuals or only to unsuccessful or incarcerated psychopaths. Even though the goal of gaining a better understanding of the differentiation between successful and unsuccessful psychopaths was outside of the scope of the current research, it is hoped that a better understanding of the construct of psychopathy and better ways to treat psychopathy might be achieved in order to curb the rate of criminal activities perpetrated by psychopathic individuals.

References
RESPONSE MODULATION  □  Travers

of Experimental Psychology: Learning, Memory, & Cognition, 17, 245-262.
Many college students may find long-distance relationships (LDRs) to be more common than those in the general population because their lives are in a state of transition. Whether a couple must separate because of college, a new career, or some other reason, the desire to remain in the relationship is pivotal in choosing to begin an LDR. In the past, partners may have dissolved the relationship, believing its survival to be impossible. However, LDRs may be viewed differently now, possibly due to the ready availability of methods by which two people can stay in touch. Even people who live on the other side of the world are able to connect in a matter of seconds. As the number of Internet users continues to grow, the availability and speed of e-mailing and instant messaging has introduced convenient means of communicating to those who are far apart. Similarly, the variety of cellular phone plans has made expensive long-distance phone calls a mere memory. As the world grows more connected by technology, it is possible that the number of Americans in LDRs will increase as more international career and education opportunities present themselves. We may find that LDRs become even more common, so further investigation of experiences in LDRs is important.

Rohlfing (1995) pointed out important concerns in studying LDRs. Of special note is the problem of defining long-distance because individual perceptions of distance are subjective and prone to variation. Past studies reviewed by Rohlfing categorized participants in various ways, utilizing factors such as geographical distance, frequency of visits, and reasons for separation. Persons in LDRs experienced both advantages (e.g., fewer distractions from jobs or schoolwork) and disadvantages (e.g., travel expenses).

Research on Long-Distance Relationships
Several past studies focused solely on participants who were in LDRs and factors relevant to such relationships. For example, researchers explored satisfaction...
faction in conjunction with variables such as maintenance of relationships during separation, the effect of changing gender roles, and termination strategies employed in LDRs (Bercaw, 2002; Carpenter & Knox, 1986; Patt, 2003; Wilmot, Carbaugh, & Baxter, 1985). Other studies have found that satisfaction with the relationship predicted relationship stability for both men and women (Schwebel, Dunn, Moss, & Renner, 1992) and positive relationship beliefs (e.g., optimism about future of the relationship) were predictive of positive relationship outcomes (Helgeson, 1994). However, positive relationship beliefs were also linked to lower levels of adjustment to separation and breakup, and results suggested that positive relationship beliefs were associated with both adaptive functioning and maladaptive functioning for those in LDRs.

Knoxx, Zusman, Daniels, and Brantley (2002) studied the experiences of students in LDRs and reported descriptive statistics that were of interest. Of special note is the similarity between the percentages of students who reported that being apart worsened their relationships (20%) and of students who reported that being apart improved their relationships (18%). However, about 22% of the sample reported relationship dissolution, which seems to highlight the difficulties of maintaining LDRs. Only 9% of the sample reported “no effect,” and other responses indicated a mixed effect. Benefits for couples in LDRs came to light in Jesswein’s (1984) study of married couples. Being physically apart was linked to improved communication and an increase in the couple’s emotional bond. Additionally, the women grew to be more independent and confident, though this development was not always supported by the husband. The separation also led couples to redefine their relationships and their reasons for remaining together, forcing them to resolve existing differences in needs and values. Interestingly, physical separation was tied to improved communication, greater emotional bond, and more respect for the individuality of each spouse.

Comparing Local and Long-Distance Relationships

Multiple studies compared both local relationships (LRs) and LDRs on variables such as communication, relationship quality, and relationship outcomes. For example, Stafford and Reske (1990) explored communication and idealization in couples who were in relationships of either type. Results indicated a tendency for long-distance partners to idealize each other, due to the restricted communication that is characteristic of LDRs. Individuals are able to present themselves more favorably when communicating only intermittently, and when day-to-day interaction is lacking, their partners maintain an impression that may not be completely accurate. LDR couples therefore remained in their relationships longer than did LR couples, and as a possible negative point, the researchers suggested that LDR couples may stay in their relationships longer than they would have had they remained a local couple. Satisfaction in LDR couples was positively correlated with the presence of restricted communication, which encompassed face-to-face, telephone, and written channels. Stephen (1986) reported differences in the content of communication between partners in LRs and LDRs. Persons in LDRs tended to discuss the maintenance of their relationships as well as other relationship issues during the time they had to communicate, whereas couples who were in LRs often had conversations that were not greatly relevant to their relationship. The further study of communication in LRs and LDRs is vital in understanding the differences between the two, especially with the current boom of improved communication methods.

Until recently, much of the research on communication differences between local and long-distance couples was performed before the widespread use of Internet and cellular phones. Aylor and Dainton (2002) reported that in-person contact is critical to maintaining an LDR, though use of the Internet as a communication tool was found to be a strong positive predictor of trust for individuals with lack of in-person contact. LDR couples who had periodic in-person or telephone contact with each other experienced higher levels of satisfaction than did LDR couples who had infrequent in-person or telephone contact. In general, however, there was no difference in satisfaction between LDRs and LRs.

Le and Aqnew (2001) focused specifically on predictors of need fulfillment (e.g., meeting intimacy, trust, satisfaction, and commitment needs) and emotional experience in a daily-record study of college students. Findings indicated greater need fulfillment was associated with more positive emotion, and this link was stronger for those in LRs on some days (but on average, non-significant). Also, less need fulfillment was associated with more negative emotion on some days, and this link was stronger (and marginally significant on average) for those in LRs. One type of need fulfillment that did not differ between LDRs and LRs related to intimacy needs (i.e., those that could be met without the physical presence of the partner). These findings suggest that those in LRs and LDRs do not differ greatly in need fulfillment and that intimacy does not necessarily suffer in long-distance relationships.

Considerable past research comparing LDRs and LRs has generally not found differences in relation-
ship outcomes, such as satisfaction or stability. However, most of those studies examined in-group differences rather than differences between LDRs and LRs as predictors of outcomes. For example, Van Horn et al. (1997) compared college students in LRs versus LDRs and found that whereas they did not differ on intimacy, self-disclosure, affection, enhancement of worth, instrumental help, nurturance, and partner’s perspective-taking, those in LDRs reported a few disadvantages, such as less self-disclosure, less companionship, and uncertainty about relationship endurance. Overall, the best predictor of stability (i.e., how long the relationship lasted) across both kinds of relationships was relationship satisfaction.

A comparison by Guldnor and Swensen (1995) revealed no differences between LDR participants and LR participants in self-reported levels of satisfaction, intimacy, dyadic trust, and degree of relationship progress, suggesting that simply being in an LDR is not necessarily a risk factor for lower relationship quality. Dellmann-Jenkins, Bernard-Paolucci, and Rushing (1994) compared relationship quality between local and long-distance couples. Results indicated no mean differences in levels of intimacy between the two types of relationships. Conversely, Johnson (1984) found that those in LDRs perceived themselves as being less satisfied overall. They were more likely to deal with relationship difficulties passively, especially while they were apart from their partners. However, individuality, time away, having space, and not having to compromise were cited as primary reasons for the satisfaction of those in LDRs.

As distance presents inherent challenges to a relationship, Holt and Stone (1988) explored coping strategies and outcomes among students involved in LRs and LDRs. The most effective coping strategies for those in LDRs involved the quality of verbal communication and seeing the partner more frequently. Those who were able to visit with their partners more often had levels of satisfaction similar to those in local relationships (LRs). Overall, the participants did not indicate that anything was lacking in their relationships and reported that their relationships were satisfying and intimate.

The Current Study

Past research has yielded diverse findings, as shown above, with relatively few reporting differences between those in local and long-distance relationships. Only a few of the studies examined differences in variables, such as need fulfillment, that predict outcomes in the two types of relationships (e.g., Le & Agnew, 2001). The aim of the current study is to identify predictors of closeness that may or may not distinguish between LRs and LDRs by examining variables that are particularly relevant to LDRs, such as communication, social support, and coping. Although other studies have explored variables such as coping and communication in LDRs, most have been limited to examining differences in the average levels of those variables in both types of relationships. The few that examined predictors of relationship quality outcomes dealt only with longevity and relationship beliefs. This study examined differences and similarities between LRs and LDRs and whether the above variables predict overall closeness differently, depending on the type of relationship.

The key criterion of the current study was the construct of closeness, which was examined as a function of several other features in both LRs and LDRs. Other variables included attitudes toward LDRs and perceptions of social support as a function of relationship type. The attitudes of the participants may differ, depending on the type of relationship they have experienced, and these attitudes may relate to closeness differently in relationships. Additionally, one’s attitudes are not formed solely from one’s own perceptions. The support of one’s family, friends, and partner are also expected to play a role in relationship stability, and the current study will examine this in greater depth. The goals of this study, then, are two-fold. First, we wished to explore differences between LRs and LDRs regarding factors that have been shown to predict outcomes in close relationships. Second, we wished to examine whether these variables predict closeness differently in LRs and LDRs.

Method

Participants

At the start of the study, 211 heterosexual participants who were at least 18 years of age and in dating (unmarried) romantic relationships for a minimum of 1 month were recruited from psychology classes at the University of Houston. Six of the participants provided incomplete information and were removed from the sample. Of the remaining 205 participants (167 women, 38 men), 60 were in LDRs. Participants’ ages ranged from 18 to 43 with a mean of 21.4 years ($SD = 4$). Reported relationship duration ranged from 1 month to 7 years, with an average of approximately 20.4 months ($SD = 17.1$).

The LR sample contained 25 men and 120 women and consisted mostly of juniors (34%) and seniors (25%), with freshmen, sophomores, and postgraduate students in the minority. Race was reported as follows: 35% Caucasian, 16% African-American, 26% Hispanic, 23% Asian, and the few remaining students were of mixed heritage or simply marked “other.” The mean
distance apart for local couples was 24 miles ($SD = 79$). Twenty participants cohabited with their partners and therefore responded "0 miles" when asked for their distance apart.

In comparison, the LDR participant pool contained 13 men and 47 women and was largely composed of freshmen (34%), followed by juniors (28%). Sophomores, seniors, and postgraduate students formed 19%, 15%, and 4% of the sample, respectively. Race was reported as follows: 35% Caucasian, 27% African-American, 13% Hispanic, 20% Asian, and 5% mixed heritage or "other." The mean distance was 843 miles ($SD = 1,316$), and participants reported seeing their partners an average of once per month. Interestingly, in the LDR sample, only 32% of the participants had ever been in a long-distance relationship in the past, whereas 57% of the LR sample had been in a distant relationship at least once.

**Procedure**

Participants were recruited from undergraduate psychology classes in exchange for extra credit in their courses. Those agreeing to participate completed survey packets in which measures were assembled in a Latin-square design.

Per the recommendation of Dellmann-Jenkins et al. (1994), a long-distance relationship was defined by the perception of the respondent in an effort to look beyond the actual number of miles separating partners, as individual perceptions of what constitutes an LDR can vary. Hypothetically, regardless of the actual geographic distance, perceived distance would likely affect the participants' perspectives of their relationships. Also, a self-reported measure of physical distance apart was included as a more objective parameter.

**Measures**

Attitudes toward long-distance relationships. A scale was developed that consisted of 20 items, each expressing a positive or negative opinion of LDRs. Participants rated items such as "Long-distance relationships are old-fashioned" and "Long-distance relationships bring partners closer together" on a scale of 1 (disagree completely) to 7 (agree completely) based on the extent to which these statements matched their own beliefs. A principal components factor analysis, followed by a promax rotation, was conducted on the 20 items and revealed three factors. One factor included nine items such as "Long-distance relationships do not work out" and was labeled "Negative Feelings" because all items reflected a negative perception of LDRs. The second factor included six items like "Long-distance relationships allow partners more free time," receiving the designation of "Positive Feelings." Finally, the third factor consisted of five items such as "Long-distance relationships are high-maintenance" and was therefore labeled "Costs." Items that loaded on each factor were averaged. Internal reliabilities (Cronbach's alpha) for Negative Feelings, Positive Feelings, and Costs were .78, .69, and .63, respectively.

**Communication channels.** Participants were asked to imagine themselves in each of twelve scenarios. The scenarios varied in the extent to which the event depicted was major versus minor (e.g., shopping for a new car vs. seeing a mutual friend at the store) and whether the event was positive or negative (e.g., gaining acceptance into a coveted program vs. losing an important file for a presentation). Each event consisted of a brief description followed by five ways of communicating that event to their romantic partner including (a) in person, (b) by telephone, (c) by written letter, (d) by e-mail, or (e) chatroom, instant messaging, or text messaging (i.e., synchronous electronic communication). Participants rated each communication channel from 1 (not likely at all) to 7 (very likely) according to how likely they would be to use each form of communication to convey that news. For example, one scenario read "I got a top score on a major test or paper" which was then followed by the five communication channels, each of which received a score from 1 to 7. Mean scores were computed across the 12 scenarios for each communication channel, yielding five composite scores. Cronbach's alphas for the communication of news in person, by phone, by letter, by e-mail, or through synchronous electronic communication were .94, .86, .93, .95, and .96, respectively.

**Coping strategies (COPE).** A coping inventory consisting of 76 statements (Carver, Scheier, & Weintraub, 1989) was modified so that participants responded with the conditional "When my partner and I are apart" in mind. The original COPE featured 11 subscales, including active coping (e.g., "I take direct action to get around the problem"), mental disengagement (e.g., "I daydream about things other than this"), restraint coping (e.g., “I hold off doing anything about it until the situation permits”), denial (“I act as though it hasn't even happened”), and acceptance (“I learn to live with it”). The version used in the current study incorporated seven new subscales and a revision of the "mental disengagement" subscale, created by Zuckerman and Gagne (2003). Examples of the new scales include self-blame (“I blame myself”), expressing emotion (“I let my emotions show”), and repair of emotion (“I try to be optimistic in spite of the situation”). Participants were asked to rate the items on a scale of 1 (I don't do this at all) to 4 (I do this a lot).
Given the large number of subscales, an exploratory (second-order) factor analysis, followed by oblique rotation (promax) was conducted on the 19 subscales of the revised COPE. A plot of the eigenvalues suggested three factors with the Positive/Active factor primarily tapping attempts to view the situation positively and do something about it. Specifically, Positive/Active factor was comprised of the subscales of positive reinterpretation and growth, understanding of emotion, repair of emotion, planning, and active coping. The second factor, Support-Seeking/Expression, encompassed support-seeking strategies and emotional expression, as indicated by the subscales of seeking support for emotional reasons, seeking support for instrumental reasons, focus on and venting of emotion, expression of emotion, turning to religion, suppression of competing activities, and acceptance (reverse-scored). Finally, the third factor of Avoidance consisted primarily of avoidance and denial as ways of coping, represented by the subscales of denial, behavioral disengagement, mental disengagement, restraint coping, and self-blame. The three factors were scored according to unit weighting. Internal reliabilities (Cronbach’s alpha) were .85, .80, and .73 for Positive/Active, Support-Seeking/Expression, and Avoidance, respectively.

**Inclusion of other in the self (IOS).** This single-item measure consists of seven paired circles (each pair representing the self and partner) overlapping to different degrees (Aron, Aron, Tudor, & Nelson, 1991; Aron & Aron, 1996). The first circles are set slightly apart from each other, and the next sets overlap gradually until the final set of circles overlap almost completely. When completing the survey, participants selected the set of circles that best described their relationship with their partners. This measure is found to be highly correlated with other well-validated measures of closeness. The IOS, despite being a single-item scale, has been shown to be reliable over time and to possess discriminant, convergent, and predictive validities comparable to other measures of closeness (Berscheid, Snyder, & Omoto, 1989; Sternberg, 1988).

**Social support, modified.** An existing measure of social support (Acitelli, 1996) was shortened in order to assess the amount of perceived support participants received from these specific categories: a romantic partner, friends, parents, other relatives, and people other than those already specified. Participants rated

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>Means Differences Between Relationship Outcome by LR and LDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS (closeness)</td>
<td>4.79 (1.52)</td>
</tr>
<tr>
<td>Communication - in person</td>
<td>6.00 (.97)</td>
</tr>
<tr>
<td>Communication - telephone</td>
<td>5.66 (.90)</td>
</tr>
<tr>
<td>Communication - written letter</td>
<td>1.33 (.74)</td>
</tr>
<tr>
<td>Communication - e-mail</td>
<td>1.84 (1.22)</td>
</tr>
<tr>
<td>Communication - IM, chat</td>
<td>1.93 (1.50)</td>
</tr>
<tr>
<td>Attitudes - negative</td>
<td>4.16 (.84)</td>
</tr>
<tr>
<td>Attitudes - positive</td>
<td>4.96 (.88)</td>
</tr>
<tr>
<td>Attitudes - disadvantages</td>
<td>5.61 (.79)</td>
</tr>
<tr>
<td>COPE - positive/active</td>
<td>2.57 (.55)</td>
</tr>
<tr>
<td>COPE - support-seeking/expression</td>
<td>2.32 (.51)</td>
</tr>
<tr>
<td>COPE - avoidance</td>
<td>1.93 (.39)</td>
</tr>
</tbody>
</table>

Note. $r = \sqrt{(F_1, \ldots)/(F_1, \ldots + df\text{error})}$ from Rosenthal and Rosnow (1991). Degrees of freedom varied from 189 to 201, depending on missing data. All available data were included in analyses. *p < .01.
the same eight statements under each of the above categories, depending on the extent to which they felt they received support from each group. For instance, items such as "Would make sure you were cared for if you were ill" and "Accepts you just the way you are" would each be rated five times—for the participant’s partner, friends, parents, other relatives, and other people. A 7-point scale was used, with 1 being Not at all and 7 being To a great extent. Cronbach’s alphas for this measure were .88, .90, .89, .90, and .90 for support from one’s partner, friends, parents, other relatives, and other people.

Results

To test whether there were significant mean differences between LRs and LDRs on the variables of interest, a series of one-way ANOVAs were conducted, with \( \alpha = .01 \) to correct for inflation. Table 1 provides means and standard deviations between relationship outcomes by LR and LDR, along with the F ratio and r (as a measure of effect size; Rosenthal & Rosnow, 1991). With regard to communication channels, participants in LRs were more likely to communicate in person compared to those in LDRs. Otherwise, those in LDRs were more likely to use e-mail and synchronous electronic communication (e.g., instant messaging and real-time chatting). Table 1 also shows mean levels of coping as a function of type of relationship. As shown, the three factors of the COPE yielded no significant mean differences.

Examination of participant attitudes toward LDRs found that those in LRs had somewhat more negative attitudes toward LDRs, whereas those in LDRs had significantly more positive attitudes toward LDRs. People in both types of relationships tended to acknowledge that disadvantages existed in LDRs. For example, a participant in an LDR might agree that “Long-distance relationships allow partners to focus on school or work” but also agree that “Long-distance relationships require compromise.” Aside from attitudinal and communication differences, no other significant mean differences were found between LRs and LDRs.

In order to test whether each of the exploratory variables predicted closeness differently, depending on the type of relationship, a series of hierarchical multiple regression analyses were conducted. Each analysis was conducted with closeness as the criterion. In step 1, the exploratory variable, along with relationship type, were entered into the equation as predictors, followed by their product of the exploratory variable and relationship type. Interactions were interpreted in step 2. A few variables, described below, had main effect associations.
partner, parents, other relatives, or positive attitudes toward LDRs.

Discussion

The current exploration uncovered several mean differences between LRs and LDRs in the two groups’ usage of communication channels and their attitudes toward LDRs. For instance, participants in LDRs exhibited more positive attitudes about LDRs, whereas those in LRs tended to view LDRs more negatively. It is possible that this is an example of false consensus, where people prefer or see advantages in whatever behavior they have chosen themselves. Both groups acknowledged the disadvantages that exist in LDRs. These results might reflect the respondents’ past experience with LDRs, given that 50% of the total sample had been in LDRs in the past. Fifty-seven percent of the respondents who were currently in LRs had been in at least one LDR in the past, so their negative attitudes may have resulted from an LDR coming to an end. This study did not account for the possibility of respondents’ LRs being a product of a former LDR, but if that were ever the case, perhaps the LR participants found their LDR so disadvantageous that they (or their partners) moved in order to turn the relationship into a local one. Additionally, participants in LRs may also have reported more negative attitudes toward LDRs because they harbored existing negativity toward LDRs and therefore never entered any.

Results revealed some degree of interaction with the type of relationship among factors such as social support, communication channels, and coping strategies. For example, communicating by telephone was associated with greater closeness for participants in LDRs, similar to the findings of Aylor and Dainton (2002). The interaction suggests that, for many partners in LDRs, communicating by telephone is the closest they can get to communicating in person. Though web cameras and Internet chat applications that allow actual voice conversations help simulate in-person communication, there remain people who may not have reliable access to the Internet but who are able to take advantage of the widespread availability of telephones and inexpensive (or free) long-distance phone plans. The other communication channels (e.g., written letter, e-mail, messaging) may not afford couples the immediacy they require for some conversations.

The marginal interaction between social support from friends and relationship type (included due to the exploratory nature of this study) was unexpected, as it revealed that LDR participants who received more social support from their friends were also less close to their partners. It may be that the participants relied less on their partners for support if it was already provided by their friends, and with this decreased degree of dependence, the partners felt less close. It could also be that the respondents’ partners did not provide a sufficient amount of support, causing the respondents to turn to their friends for support. The study also showed that more positive or active coping in LDR participants was associated with greater closeness in the relationship. It may seem counterintuitive that the exhibition of coping strategies would be linked to close LDRs, but the need for coping may simply be a result of the stressful nature of this type of relationship (Lydon, Pierce, & O’Regan, 1997; Maguire, 2002). On the other hand, if coping strategies manifest in an LR, problems may already exist in the relationship, and as a result, the partners may feel less close.

Though the procedures and participants for this study were carefully considered, they are not without limitations. There were considerably more female participants in the study, accounting for about 82% of the sample, possibly due to the large proportion of female psychology students at the University of Houston or that more women than men are interested in relationship studies. As a consequence, this may reduce the generalizability of the results.

It was difficult to recruit a larger percentage of students in LDRs. Participants were recruited at the start of the academic year with the expectation that more students would be in LDRs, especially if they had just started college or transferred from another school. However, only 29% of the sample consisted of students in LDRs.
In a few instances, some participants expressed confusion when answering the COPE measure, which was originally designed to measure coping responses to more severe or dramatic problems, such as disagreements; whereas in this study, the scale attempted to measure coping responses to being away from one’s partner. Some students felt that the items were too extreme for the scenario or were haunted by the 76-item scale and left all or part of it incomplete. This might have been remedied by administering the survey in a lab setting, where we could motivate participants and answer any questions.

Despite these limitations, the study also had several strengths. It was one of the few LDR studies to examine predictors of a relationship condition (closeness), and the sample was drawn from both LR and LDR populations. The study is somewhat unique in the way that "long-distance" is defined. As recommended by Dellman-Jenkins et al. (1994), we looked beyond the distance separating the couples and asked participants whether they perceived themselves to be in LDRs, as perceptions of an event can be more influential than the actual event. Respondents in both LRs and LDRs felt that partners had to be an average of 252 miles apart (SD = 882 and 621, respectively) before their relationship could be considered an LDR.

Future studies should assess LDR attitudes of people who are not in any relationship at the moment. It is possible that such a sample could offer a more objective viewpoint of LDRs. Also, an assessment of participants’ likelihood to enter another LDR if their current one dissolved or whether LR participants would consider entering an LDR in the future would be interesting, as it may indicate a shift in their attitudes toward LDRs. Both Holt and Stone (1988) and Aylor (2003) have suggested that researchers should be careful to differentiate between types of LDRs, as the population characteristics (e.g., whether relationship was always long-distance, length of time before relationship can become a local one) often vary and could affect results. Additional questions, such as “When was the last time you saw your partner?” might allow researchers to control for factors that could influence participant responses. The use of newer channels of communication, such as electronic mail (e-mail) and synchronous computer-mediated communication (e.g., instant messaging, real-time chat rooms, webcams, voice chatting), also merits further study. Future studies should also consider surveying participants’ partners and not relying solely on individual responses.

Though long-distance relationships have existed for many years, the detriments and delights that are associated with them are still understudied. Much of the past research has indicated that LRs and LDRs are not as different as we might think and that despite inherent challenges, LDRs may also have their advantages.

References


Knox, D., Zusman, M. E., Daniels, V., & Brantley, A. (2002). Absence can become a local one) often vary and could affect results. Additional questions, such as “When was the last time you saw your partner?” might allow researchers to control for factors that could influence participant responses. The use of newer channels of communication, such as electronic mail (e-mail) and synchronous computer-mediated communication (e.g., instant messaging, real-time chat rooms, webcams, voice chatting), also merits further study. Future studies should also consider surveying participants’ partners and not relying solely on individual responses.

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References


Physical distance and interpersonal characteristics in college students’ romantic relationships. Personal Relationships, 4, 25-34.

Communicative strategies used to terminate romantic relationships. Western Journal of Speech Communication, 49, 204-216.

The COPE revised: Proposing a 5-factor model of coping strategies. Journal of Research in Personality, 37, 169-204.
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