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Gender, Internal Controls, and Academic Dishonesty: Investigating Mediating and Differential Effects

Chris L. Gibson, David Khey and Christopher J. Schreck

While research has found that males tend to commit more academically dishonest acts than females, we know little about what accounts for the gender differential or whether the same factors can explain academic dishonesty for males and females. This study assesses how internal controls, i.e., self-control, shame, embarrassment, and moral beliefs, account for the relationship between gender and cheating behavior. Using a sample of students from a southern university in the United States, this study explores three questions. First, do internal controls vary across males and females? Second, can internal controls account for gender differences in test cheating? Third, do internal controls differentially or similarly predict test cheating for males and females? Results show that (a) gender differences among several internal controls as well as cheating behavior, (b) internal controls reduce the gender gap but cannot completely explain why gender differences exist in cheating, and (c) two internal controls, self-control and moral beliefs, differentially predict male and female test cheating. We discuss limitations of our findings and how research can expand the investigation of gender differences and explanations for engaging in academically dishonest acts.

Introduction

Research investigating academic dishonesty has received a fair amount of empirical attention in criminology, psychology, and sociology forums (e.g., Bolin 2004; Cochran, Wood, Sellers, Wilkerson, & Chamlin 1998; Davis, Grover, Becker, & Butterfield 1992; McCabe, Treviño, & Butterfield 2001; Vowell & Chen 2004). Depending on the type of the institution (i.e., small private college versus large state university) and the presence of honor codes, estimates of cheating prevalence range from 9 to 95 percent, with more blatant types of academic cheating behaviors reportedly becoming more common (Davis, Grover, Becker, & McGregor 1992; McCabe & Treviño 1997; McCabe, Treviño, & Butterfield 1999). The

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apparent acceptance and widespread nature of cheating at some institutions (see McCabe et al. 1999) is especially paradoxical, given that most students define cheating as wrong (Davis, Grover, Becker, & McGregor 1992).

Several factors have been identified as correlates of academic dishonesty. For instance, students who cheat are more likely to be younger, male, and have lower grade point averages (Davis, Grover, Becker, & McGregor 1992; McCabe et al. 2001). Beyond demographic and school-related characteristics, one broad area of factors receiving recent empirical attention in the academic dishonesty literature are internal controls of students that may act as protective factors such as self-control (Bolin 2004; Cochran, Aleska, & Chamlin 2006; Cochran et al. 1998; Tibbetts & Myers 1999), shame (Tibbetts 1999), embarrassment, and morals (Bolin 2004; Cochran, Chamlin, Wood, & Sellers 1999). For instance, research has shown that students who have low self-control, less shame proneness, and less moral commitment are more likely to become academically dishonest (Bolin 2004; Cochran et al. 1998; Paternoster 1989; Tibbetts 1999; Tibbetts & Myers 1999), while those who have self-control, high internalized shame, and more moral beliefs are less likely. Although evidence is accumulating on the link between internal controls and academic dishonesty, it is less known how these factors differentially impact males' and females' likelihood of engaging in cheating behavior. Studies do show, however, that internal controls tend to vary substantially by gender group (Gibson, Wright, Swatt, & Beaver 2008; Tibbetts 1999). For instance, females, on average, are likely to have more internal control and perceived internal punishment for committing deviant acts than males (Gilligan 1982; Mears, Ploeger, & Warr 1998; Piquero, Gover, MacDonald, & Piquero 2005), but few attempts have been made to assess how these differences manifest in predicting academically dishonest acts (Tibbetts 1999).

This research examines how internal controls for males and females relate to their test cheating behaviors. The literature indicates that a focus on the impact of gender differences on academic dishonesty is important. Many studies also have linked internal controls to academic cheating, although there is limited research assessing differential effects of internal controls on academic dishonesty across males and females. Finally, we discuss what we anticipate when assessing differences in internal controls across gender and how internal controls may differentially impact the likelihood that male and female students engage academic cheating.

Gender and Academic Dishonesty

The literature does not show clear patterns with respect to gender differences in cheating behavior. McCabe, Treviño, and Butterfield's (1999) literature review pointed out that much of the research on gender concentrates on the rate differences of cheating behaviors between men and women without delving into the possible underlying causes for these differences. The majority

of studies on gender and academic dishonesty have cited higher rates among men, but many of these differences are slight while other researchers have reported no significant differences between genders (McCabe et al. 2001; Whitley 2001). Attitudes toward cheating, however, appear to be another matter. Whitley et al. (1999) found that significant, moderate differences exist in *attitudes* towards cheating between men and women. Yet they also found that differences in actual cheating *behavior* were far less divergent—with males retaining their higher prevalence in both circumstances (see, also, Tibbetts 1999).

While there is much research on gender differences in academic cheating, there remains the question of why these differences exist in the first place and whether male and female participation in cheating behaviors arise from a common origin. As we indicate below, internal sources of control may usefully account for levels of cheating as well as gender differences.

Internal Controls (or Lack of) and Academic Dishonesty

Internal controls—such as self-control, shame, embarrassment, and moral beliefs—have important effects on student cheating behavior. Low self-control, or the inability to consider the long-term negative consequences of one's actions, is one of the most common explanations of various forms of deviant and antisocial behavior (Gottfredson & Hirschi, 1990). Low self-control is a trait that reflects the inability to delay gratification, angry temperament, impulsivity, a preference of physical over mental activity, a preference for simple tasks, self-centeredness, and risk-taking. Gottfredson and Hirschi (1990) describe self-control as the factor common to all criminal behaviors as well as reckless, immoral, and even sinful behavior—what they termed "crime-analogous behavior."

Research appears to support Gottfredson and Hirschi's claims. Low-self control has been found to significantly predict intoxicated driving (Keane, Maxim, & Teevan 1993; Piquero & Tibbetts 1996), employee theft (Langton, Piquero, & Hollinger 2006), illicit sexual activities (Love 2006), and binge drinking by college sport fans and students (Gibson, Schreck, & Miller 2004; Higgins, Tewksbury, & Mustaine 2007), while also accounting for violent behavioral tendencies such as courtship aggression (Sellers 1999), physical violence, and psychological aggression (Avakame 1998). In fact, low self-control remains one of the most widely tested and confirmed correlates of deviant behavior (Pratt & Cullen, 2000).

The effect of low self-control on academic dishonesty, one specific form of deviance and/or analogous behaviors, has also been observed (Cochran et al. 1998, 2006; Tibbetts 1999; Tibbetts & Myers 1999; Vowell & Chen 2004). Individuals possessing low self-control tend to perceive deviant behavior as attractive because rule violations are often exciting and gratifying, whereas following the rules often entails unwelcome demands. For instance, those

lacking self-control can desire an A on an exam but yet not be willing to devote the time, concentration, and energy required to obtain that grade. Having low self-control also means that the student can easily set aside or not consider at all the consequences that might follow if the cheating is discovered. The opposite tends to be true of individuals with higher levels of self-control.

Other internal controls that might account for cheating include shame, embarrassment, and moral beliefs. These are general constructs identified within a rational choice framework as anticipated internal punishments (Grasmick & Bursik 1990; Nagin & Paternoster 1993; Tibbetts 1999). Used singularly and in tandem, these sources of control might help explain individuals' decisions and intentions to commit deviant acts (e.g., Blackwell 2000; Braithwaite, Ahmed, & Braithwaite 2006; Grasmick, Bursik, & Arneklev 1993; Stokkom 2002), yet we know less about their efficacy than we do for self-control (Pratt and Cullen 2000).

There is some evidence, however. Several studies have shown that higher moral beliefs can decrease the likelihood of engaging in deviant acts (Bishop 1984), especially academic dishonesty (Lanza-Kaduce & Klug 1986; Tibbetts 1997, 1998). Moral beliefs have also been investigated as a correlate of student test cheating for males and females seperately (Tibbetts 1999). Using scenario-based surveys adminstered to a sample of university students, Tibbetts (1999) found that moral beliefs matter more for females in their intention to commit an academically dishonest act when compare to men. Further, Bolin (2004) found that one's attitude toward academic dishonesty, as measured by one's moral evaluations of cheating, mediated the relationship between self-control and academic dishonesty as well as perceived opportunity and academic dishonesty.

Shame and embarrassment have a wider presence in psychology, namely in cognitive dissonance theory (Miller 2001; Whitley 2001). While some researchers have treated shame and embarrassment as essentially identical concepts (see Tangney et al. 1996), it may nevertheless be important, as Tangney and her colleagues (1996) point out, to treat them as distinct measures:

> [Theorists] have identified different patterns of attributions for negative events associated with shame and embarrassment. … [Shame] is tied to perceived deficiencies in one's *core* self, whereas embarrassment results from deficiencies in one's *presented* self. As a result, shame is associated with more global and enduring negative attributions about oneself, whereas embarrassment is tied to more transient, situational-specific failures and pratfalls. (1258; emphasis in original)

Researchers have also applied a public/private distinction between shame and embarrassment—embarrassment typically requires an audience to cause this emotional state, whereas shame can be a private emotion (Tangney et al. 1996). Extant research has explored how internal attributions of shame affect intentions to cheat, but less research has assessed how situational embarrassment influences cheating.

Gender, Internal Controls, and Cheating

While several studies show gender differences in crime and deviance, as well as academic dishonesty, only recently has research focused on gender-neutral versus gender-specific explanations for such outcomes (Chesney-Lind 1989; Daigle, Cullen, & Wright 2007; Gottfredson & Hirschi 1990; Gover, Perez, & Jennings 2008; Piquero & Sealock 2004; Piquero et al. 2005; Simpson 1989; Smith & Paternoster 1987; Tibbetts 1999; Tittle, Ward, & Grasmick 2003). Feminist criminologists have argued that theoretical models of deviance and crime must take into account gender differences and perhaps develop differential explanation for males and females (e.g., Chesney-Lind 1989). Other researchers and theorists have argued for frameworks that are more general and capable of explaining both male' and females' involvement in deviance and crime (e.g., Gottfredson and Hirschi 1990; Wilson & Herrnstein 1985). For instance, Gottfredson and Hirschi (1990) argue that while gender differences exists in levels of self-control due to differential socialization, self-control as a causal explanation can be used for understanding why both males and females engage in criminal and analogous behaviors.

Regarding academic dishonesty, many studies find that gender differences, albeit small to moderate, are present. Fewer studies, however, have assessed what factors may account for such differences and if different explanations for males and females are warranted (Tibbetts 1999). Internal controls represent one promising avenue for explaining these differences. Studies have shown that internal controls, e.g., self-control, shame, and moral beliefs, do vary by gender. For instance, males tend to have lower self-control (Burton, Cullen, Evans, Alarid, & Dunaway 1998; Gibson, Wright, Swatt, & Beaver 2008; LaGrange & Silverman 1999) and less anticipated shame for engaging in deviant acts (Tibbetts 1999) when compared to females. As noted earlier, some of these same internal controls have been shown to have explanatory power in accounting for variation in intentions to engage in academic dishonesty and actual behavior. For instance, using a rational choice framework, Tibbetts (1999) found that low self-control, lower moral beliefs, and anticipated shame significantly predicted intentions to cheat for both males and females. However, some of these effects on intentions to cheat varied by gender. For instance, females' intentions to cheat were more affected by low moral beliefs than were males' intentions.

We attempt to extend the work of Tibbetts (1999) by assessing self-reported cheating behavior, as opposed to intentions to cheat. Furthermore, we assess how similar internal controls such as moral beliefs, self-control, embarrassment, and shame proneness may contribute to our understanding of gender differences in cheating. We have three research questions. First, are females likely to have more internal control and engage in less cheating than males? Second, if differences do exist, can differences in internal control account for gender differences in test cheating? Third, can what we label as internal controls, i.e., self-control, shame proneness, embarrassment, and moral belief,

predict test cheating among males and females similarly, or are differential explanations warranted with respect to internal controls?

Methods

Data

Data for the current study were obtained from university students enrolled in several freshman level courses at a southern university in the United States. A survey was group administered, and students present on the day the survey was administered were asked to voluntarily complete an 11-page, self-report instrument designed to measure deviance and individual traits. They were told that their responses would be confidential.

The analysis sample consists of 224 students. The sample is 36 percent male and 64 percent female. Regarding race, 91 percent were White and 9 percent were non-White. Although freshmen level course were sampled, college classification of sampled students within classes consisted of approximately 52 percent freshmen, 20 percent sophomores, 19 percent juniors, and 9 percent seniors. The age range was 17–44, with the mean age being approximately 21. The sample closely reflected the demographic characteristics of the larger university with slightly more females in the study sample.

Dependent Variable

Academic Dishonesty

Academic dishonesty was measured using a self-report question regarding the prevalence of test cheating. The question asked students if they have cheated on a test within the last year. Responses were coded as 1 (yes) or 0 (no). Approximately 33 percent of students self-reported cheating on an exam in the past year, while 67 percent reported not cheating.

Independent Variables

Internal Controls

Four different internal controls were used in the current study: self-control, shame proneness, moral beliefs, and embarrassment. *Self-control* was measured using Grasmick, Tittle, Bursik, and Arneklev's (1993) 24-item attitudinal self-control scale. Several studies have found this scale to be both reliable and valid as a unidimensional measure of self-control, although some have been critical of its unidimensional properties (Piquero, MacIntosh, & Hickman 2000).

Reponses for each question ranged on a 4-point Likert scale from 1 (disagree strongly) to 4 (agree strongly). Larger value on this summated scale indicate a lower level of self-control (α = .83, *M* = 50.66, *SD* = 8.78, min = 26 and max = 75). Confirming other studies (Brownfield & Sorenson 1993; Nagin & Paternoster 1993), a principal-components factor analysis revealed that all scale items loaded on one factor, and the largest difference between eigenvalues was within one and two factors.

Shame Proneness was measured using a 35-item scale designed to indicate global evaluation of self, loss of self-esteem due to negative evaluation, failure to live up to personal standards or ideals, and internal attributions of blame. Tibbetts (1997) stated that the summated measure was designed to capture the unique impact of shame while excluding further influences. Responses to individual items ranged on a 5-point scale where higher scores higher levels of shame proneness (α = .90, *M* = 107.76, *SD* = 19.11, min = 67 and max =160).

Following Gibson, Schreck, and Miller (2004), *embarrassment* was measured using a 12-item scale. This measure was designed to assess situation specific embarrassment and not a global evaluation, which makes this measure somewhat different from our shame proneness measure. For instance, we asked students the degree of embarrassment they would experience if they encountered the following situations: falling down in public, speaking in public, walking in on a couple naked, and unintentionally interrupting class. Responses to questions range on a 4-point scale from 1 (disagree strongly) to 4 (agree strongly) (α = .82, *M* 29.13, *SD* = 6.45, min = 12 and max = 48). Higher scores on this summated scale indicate more feelings of embarrassment.

Moral beliefs were measured using a scale consisting of six items. Similar to Gibson and colleagues (2004), we asked students if they thought it was morally wrong to engage in the following acts: cheating on a test, using hard drugs, stealing something, damage property belonging to someone else, verbally threatening a person, and physically attacking a person. Responses range on a scale from 1 (disagree strongly) to 4 (agree strongly), with higher scores indicating more moral beliefs (α = .88, *M* = 20.68, *SD* = 3.89, min = 6 and max = 24).

Demographics and Controls

Several demographic and control variables were used that have been found in past research to relate to academic dishonesty. Gender was coded as 0 (male) or 1 (female). Age was measured as a continuous variables, Greek affiliation was measured by one self-report item which asked students if they were a member of a sorority or fraternity coded as 0 (no) or 1 (yes). Grade Point Average (GPA) is an ordinal measure coded as 1 (below 2.0), 2 (2.0–2.49), 3 (2.50–2.99), 4 (3.0–3.49), and 5 (3.5–4.0).

Analytic Strategy

Our analytic strategy unfolds in four stages. First, we estimate independent sample *t* tests to assess average differences in test cheating and internal controls across our male and female samples. Second, we estimate a series of logistic regression models following a stepwise procedure so that we can discern whether internal controls can account for gender differences in cheating. As such, we estimate a logistic regression to assess the baseline effect of gender on cheating while making adjustments for controls and demographics. We then estimate a model to assess the effects of internal controls (i.e., self-control, shame proneness, embarrassment, and moral beliefs) on cheating while excluding gender and controls. To complete this series of models, we estimate a logistic regression to assess the effects of gender (plus controls) and internal controls simultaneously to understand if internal controls can mediate the relationship between gender and cheating. Third, we estimate gender-specific logistic regression models to assess how internal controls can perhaps differentially impact test cheating for males and females, as some evidence, albeit limited, exists that suggests some internal controls are more important for females than males. Finally, given that logistic regression coefficients are not readily interpretable, we graph predicted probabilities for both males and females with respect to some of our covariates and cheating.

Results

Table 1 shows gender differences for test cheating and internal controls. Supportive of past research (Tibbetts 1999; Whitley 2001; Whitley et al. 1999), males and females differ with respect to several variables. First, males, on average, self-report a significantly higher prevalence of test cheating within the past year than females. While 45 percent of males report cheating, only 26 percent of our female sample report cheating. Second, males, on average, have significantly lower self-control than females. Specifically, a 4-point

Table 1 Independent samples t-tests assessing gender differences in academic dishonesty and internal controls

	Males	Females	
Variables	Mean	Mean	*t* value
Academic dishonesty	.45 (.06)	.26 (.03)	−3.00*
Self-control	53.82 (.93)	48.85 (.71)	−4.65*
Shame proneness	102.56 (1.88)	110.76 (1.65)	3.16*
Embarrassment	27.41 (.69)	30.10 (.53)	3.06*
Moral beliefs	20.10 (.40)	21.01 (.34)	1.69

*$p < .05$; standard errors are shown in parentheses.

difference in self-control between genders was observed. Third, females, on average, are more shame prone than males. Finally, females, on average, report significantly higher scores on the embarrassment scale than males, indicating that females are more easily embarrassed in specific situations than males are. Taken together, these differences support past research in that not only does cheating vary among males and females, but also gender differences exist with respect to internal controls.

Table 2 shows a series of stepwise logistic regression models. Model 1 shows that when making adjustments for controls, gender has a statically significant and positive effect on test cheating. That is, regardless of GPA, age, and Greek membership, females are significantly less likely to report cheating on tests within the past year than males. Age has a negative and significant effect on cheating, indicating that younger students are more likely to cheat than older students. Model 2 shows only the effects of internal control measures on test cheating. Two internal controls act as inhibitors of test cheating. Students possessing more self-control and who have higher moral beliefs are less likely to cheat than those with lower self-control and less morals. Finally, model 3 in table 2 shows a full model that includes gender, internal controls, and control variables. It is important to note that gender still has a statistically significant and positive effect on test cheating, even after simultaneously taking into account internal controls. Females are significantly less likely to report cheating on tests than males. Before making adjustments for internal controls, males had a .41 predicted probability of test cheating, while females had a .25 predicted probability. After taking into account internal controls into the model, the predicted probabilities of test cheating for males and females were marginally reduced. Specifically, males have a .38 predicted probability of cheating, whereas females have a .18 predicted probability.

Table 2 Logistic regression models predicting test cheating

	Model 1		Model 2		Model 3	
	b	*SE*	*b*	*SE*	*b*	*SE*
Constant	4.954	(1.928)*	−2.597	(1.692)	2.610	(2.668)
Gender	1.018	(0.314)*	-	-	1.013	(0.355)*
Age	−0.326	(0.095)*	-	-	−0.324	(0.101)*
Greek status	0.086	(0.459)	-	-	0.200	(0.490)
Grade point average	0.149	(0.167)	-	-	0.219	(0.178)
Self-control	-	-	0.052	(0.019)*	0.039	(0.021)
Embarrassment	-	-	−0.006	(0.026)	0.012	(0.029)
Shame proneness	-	-	0.011	(0.008)	0.015	(0.009)
Morals	-	-	−0.092	(0.040)*	−0.093	(0.043)*
	Pseudo-R^2 = 0.120 χ^2 = 34.19*		Pseudo-R^2 = 0.076 χ^2 = 21.38*		Pseudo-R^2 = 0.173 χ^2 = 48.84*	

*$p < .05$.

Table 3 Logistic regression models predicting test cheating for females

	Model 1		Model 2		Model 3	
	b	*SE*	*b*	*SE*	*b*	*SE*
Constant	3.616	(2.421)	−1.297	(2.229)	2.655	(3.510)
Age	−0.261	(0.118)*	-	-	−0.254	(0.124)*
Greek status	−0.304	(0.624)	-	-	−0.172	(0.660)
Grade point average	0.185	(0.210)	-	-	0.233	(0.229)
Self-control	-	-	0.021	(0.026)	0.026	(0.027)
Embarrassment	-	-	−0.018	(0.035)	−0.010	(0.037)
Shame proneness	-	-	0.017	(0.011)	0.014	(0.011)
Morals	-	-	−0.104	(0.049)*	−0.098	(0.052)*
	Pseudo-R^2 = 0.068 χ^2 = 11.15*		Pseudo-R^2 = 0.062 χ^2 = 10.05*		Pseudo-R^2 = 0.116 χ^2 = 18.71*	

*$p < .10$.

Tables 3 and 4 show gender-specific models assessing how internal controls differentially predict test cheating for males and females. Given the reduced sample size when we split our sample by gender, we decided to follow others by using a $p < .10$ level of significance (Ventura, Gibson, & Miller 2006). In sum, these results do show some differential effects of internal controls on test cheating. First, self-control has a positive and statistically significant effect on cheating for males but not for females. Males with lower self-control are more likely to report cheating on tests than males who have more self-control. Females with lower self-control, however, are no more likely than females with more self-control to significantly report cheating. Second, moral beliefs exhibit a statistically significant and positive effect on cheating for females but not for

Table 4 Logistic regression models predicting test cheating for males

	Model 1		Model 2		Model 3	
	b	*SE*	*b*	*SE*	*b*	*SE*
Constant	7.794	(3.170)*	−4.687	(2.759)	3.668	(4.302)
Age	−0.417	(0.157)*	-	-	−0.436	(0.175)*
Greek status	0.732	(0.784)	-	-	0.720	(0.846)
Grade point average	0.109	(0.283)	-	-	0.185	(0.307)
Self-control	-	-	0.074	(0.032)*	0.061	(0.034)*
Embarrassment	-	-	0.042	(0.044)	0.050	(0.050)
Shame proneness	-	-	0.014	(0.016)	0.015	(0.018)
Morals	-	-	−0.102	(0.073)	−0.100	(0.079)
	Pseudo-R^2 = 0.143 χ^2 = 15.96*		Pseudo-R^2 = 0.100 χ^2 = 11.19*		Pseudo-R^2 = 0.213 χ^2 = 23.82*	

*$p < .10$.

males. Moral beliefs act as a protective factor against engaging in test cheating for females. Specifically, females with more moral beliefs are less likely to report cheating on tests relative to those who have less moral beliefs. On the other hand, males with more moral beliefs are not significantly less likely than males with less moral beliefs to report cheating on tests.

Since logit coefficients are not intuitive when assessing effects of independent variables on binary dependent variables, we report predicted probabilities for the effects of moral beliefs and self-control on test cheating across males and females while holding other covariates constant. Figure 1 shows predicted probabilities of test cheating for males and females across a continuum of moral beliefs. It is important to note again that moral beliefs had a significant effect on females but not on males. As shown, females at every level of moral beliefs have a substantially lower probability of engaging in test cheating compared to males. For instance, at the lowest level of the moral-beliefs continuum, females have approximately a 50 percent chance of engaging in test cheating, whereas males have approximately an 80 percent chance of engaging in test cheating (although for males the effects of moral beliefs was not significant). On the other end of the moral beliefs distribution, it is shown that females with extremely high moral beliefs have approximately a 20 percent chance of test cheating whereas males have approximately a 30 percent chance of test

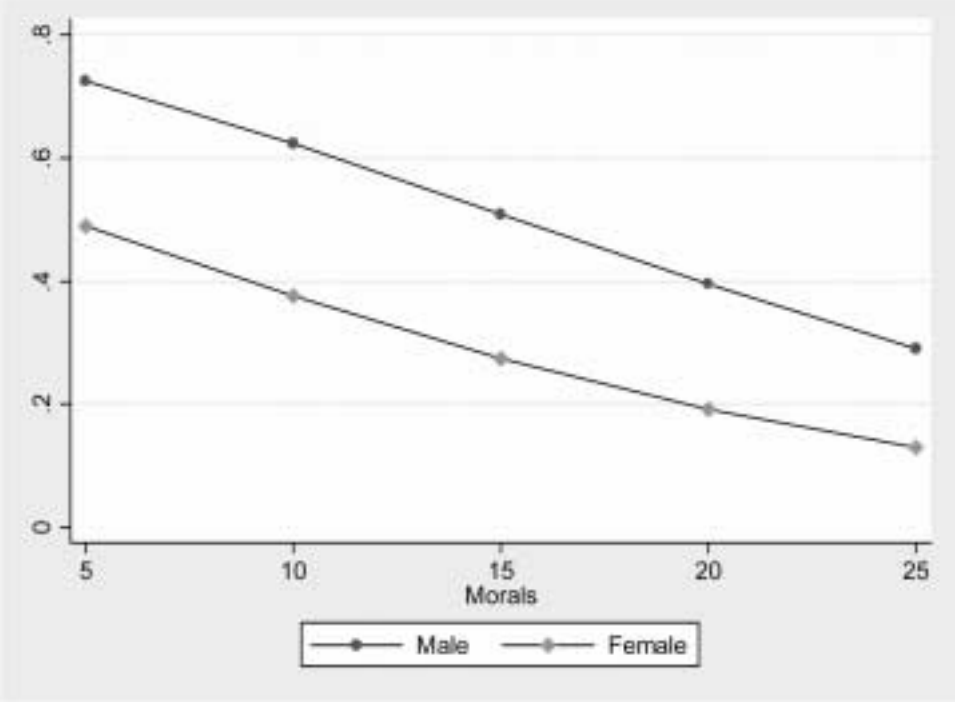

Figure 1 Predicted probabilities of self-reported test cheating by gender across low to high levels of moral beliefs.

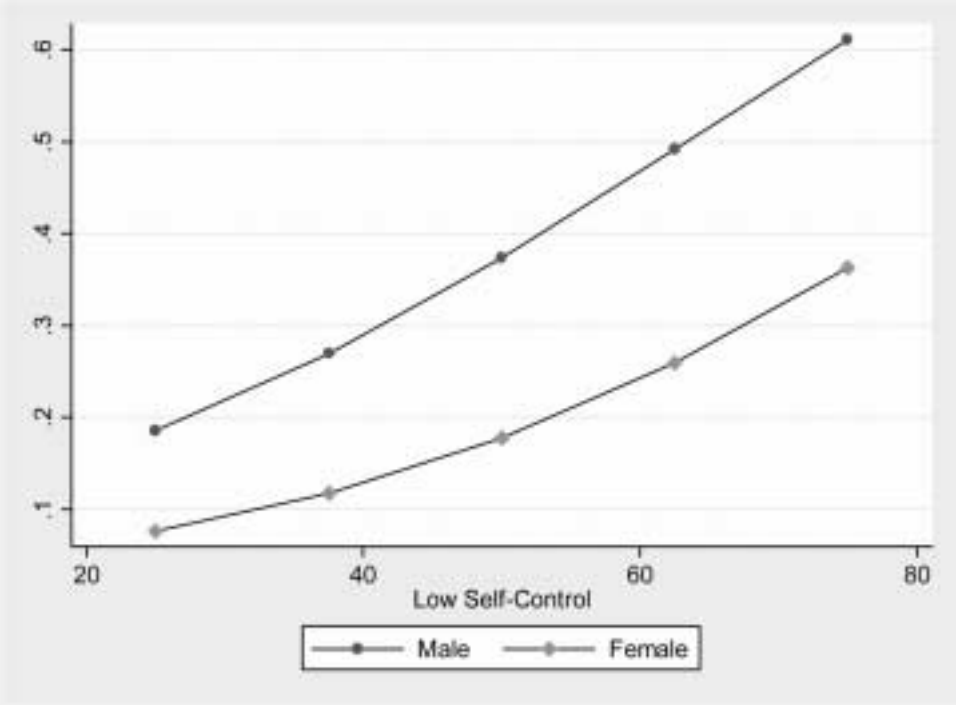

Figure 2 Predicted probabilities of self-reported test cheating by gender across levels of self-control.

cheating. These predicted probabilities are observed after holding all other covariates in our analysis constant.

Figure 2 shows a similar set of predicted probabilities, but here the predicted probabilities of test cheating are across a continuum of self-control for both males and females. It is important to note again that self-control had a significant effect for males but not for females. As shown, females at every level of self-control had a substantially lower probability of engaging in test cheating compared to males. For instance, at the highest level of self-control (lowest scale scores), females have less than a 10 percent chance of engaging in test cheating, whereas males have almost a 20 percent chance of engaging in test cheating (although the effect of self-control for females was not statistically significant). On the other end of the self-control distribution (students with the lowest self-control as indicated by the highest scale scores), it is shown that females with the lowest self-control have approximately a 35 percent chance of test cheating, whereas males have nearly double the chance of engaging in test cheating at above 60 percent.

Discussion

The current study's primary aim was to assess how internal controls may help understand the link between gender and academic dishonesty. We were

interested in three primary questions. First, do gender differences exist with respect to academic dishonesty? Specifically, we hypothesized that males would be more likely to report test cheating than females. This hypothesis was confirmed, even after making adjustments for several demographic characteristics and internal controls, i.e., self-control, shame proneness, embarrassment, and moral beliefs that have been shown to vary across gender and predict intentions to cheat and self-report cheating. Second, can internal controls explain the differences in test cheating among males and females? Our findings revealed that internal control measures could not explain the gender gap in test cheating, although internal level of internal control varied significantly across males and females. Importantly, gender differences remained, and only one of our internal control measures predicted the probability of test cheating. Students with stronger moral beliefs were less likely to engage in cheating compared to those with less moral beliefs. Furthermore, we found that gender accounted for the effect of self-control on test cheating. Our other internal control variables, shame and embarrassment, did not predict test cheating, although they both varied significantly across gender, indicating that females are more shame prone and experience more feelings of embarrassment under various situations. Third, do internal controls differentially or equally predict cheating for males and females? Very few studies have investigated this question (Tibbetts 1999) and the more general question of whether we need different explanations for males and females participation in deviance or whether we need gender-specific explanations. We did find differential effects of internal controls for males and females. It appears that moral beliefs matter more for females and that self-control matters more for males. This is somewhat consistent with Tibbetts's (1999) research which found that moral beliefs matter more in predicting females' intentions to cheat compared to males; however, he did not find differential effects for self-control on intentions to cheat across gender. Tibbetts (1999) found that both males and females who possess lower self-control had higher intentions of cheating.

Although we feel that our study adds to the understanding of how gender, internal controls, and academic dishonesty are linked, it is not without limitations. First, our findings are restricted to a sample of college students from one southern university collected approximately a decade ago. From this arises a concern of generalizability of our findings and a potential period effect. Future studies need to use more representative samples of college students collected in more recent years.

Second, our dependent variable was a binary outcome of whether students self-reported test cheating in the year prior to the survey. We acknowledge this limitation, but we also realize that other studies investigating gender, internal controls or internal punishment, and academic dishonesty have used vignettes which only assess intentions to cheat and not actual self-reported cheating as an outcome (Tibbetts & Myers 1999; Tibbetts 1998, 1999). As such, we feel that our investigation is insightful in a way that helps confirm aspects of other studies that have used different measures. Nonetheless, future studies exploring gender,

internal controls, and cheating should incorporate various methods of measuring academic dishonesty (Cochran et al. 2006; Tibbetts 1999).

Third, our survey instrument did not have measures of perceived external controls or sanctions such as chances of being caught by a professor when cheating, being detected by peers, or being brought in front of a student judicial board and dismissed from the university if caught. However, past studies on academic dishonesty have not found such perceptions to be related to intentions to cheat (Tibbetts 1999); therefore, these factors may not be as important. Nonetheless, these perceptions of external controls should be assessed in studies that measure cheating behavior.

Fourth, we were not able to contextualize our findings regarding gender, internal controls, and test cheating. Do gender differences in cheating vary across types of majors, types of universities, types of colleges, and types of cheating behaviors? These are interesting questions that in some instances would require nested data on individuals within colleges and universities utilizing qualitatively different types of academic cheating measures.

Some research has begun to address these contextualized ideas. For instance, women in particular have participated increasingly in what McCabe and Treviño (1997) describe as collaborative cheating—"the unpermitted collaboration among students on written assignments." Upon review, McCabe, Treviño, and Butterfield (1999) point out that:

> … the data suggest that within similar majors, gender differences are often very small. For example, women majoring in engineering, a major one might have considered male-dominated a few decades ago, talk about the need to compete by the "men's rules" to be successful in this major. Thus, generally higher levels of cheating were found among women in engineering compared to women in other majors, and women majoring in engineering reported cheating at rates comparable to men majoring in engineering. (228).

Despite limitations, the current study has put forth new findings that replicate and extend what is known regarding gender and academic dishonesty. More research, however, is needed to understand why gender differences regarding academic cheating exist and whether gender neutral explanations for male and female cheating behaviors are warranted. We have laid out a modest agenda for future research with the hopes that social scientists interested in these issues will begin to empirically address them.

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