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An Integrative Assessment of Self-Control, Deviant Friendships, and Fraudulent Behavior

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Abstract

Decades of research consistently support the link between poor self-control or deviant friendships with undesirable behavior. Rather than treating these theories as rival explanations, this study presents an assessment that explores a potential interconnection between self-control and social learning (differential association) in the prediction of deviant outcomes. Specifically, this investigation analyzes the mediating and moderating impact of deviant peer association upon the relationship between self-control and self-reported fraudulent behavior (academic dishonesty). Data gathered from an anonymous survey of undergraduate students ($n = 490$) generated findings that suggest deviant friendships mediate and moderate the association between self-control and fraudulent behavior. The implications of these findings are discussed.

Keywords Self-control theory · General theory of crime · Deviant peers · Differential association · Social learning

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Introduction

College cheating is a serious problem encountered by teachers and administrators across the world. The motivations for cheating and other types of fraudulent behavior in educational settings have been examined across many different disciplines. Scholars have concluded that dishonest behavior among students is influenced mainly by contextual factors and individual differences (Anderman et al., 2010; Day et al., 2011; Stogner et al., 2013), including personal levels of self-control (Cochran et al., 1998; Stogner et al., 2013; Tibbetts & Myers, 1999).

Few theories have garnered as much interest as Gottfredson and Hirschi's (1990) *General Theory of Crime* (GTC). The theory claims to explain *all* criminal behavior as the propensity to engage in deviant acts and is determined by individual levels of self-control (Hirschi & Gottfredson, 1993, 1994, 2000). A core tenet of GTC is that self-control is established very early in life, remains stable in adulthood, and is determined mainly by the influence of parents and guardians (Akers, 1990, 1991; Britt & Gottfredson, 2003; Gibson et al., 2010; Gottfredson & Hirschi, 1990; Hirschi, 2004).

The *General Theory of Crime* has received much criticism for its bold claim (Higgins et al., 2008; Hirschi & Gottfredson, 2000, 2008; Magen & Gross, 2010; Piquero, 2009). Notwithstanding the criticism, a large body of empirical tests provides moderate to strong support for the relationship between self-control and deviance (*see* de Ridder et al., 2012; Pratt & Cullen, 2000; Vazsonyi et al., 2017). The central thesis of this study is that self-control theory does not adequately highlight the critical role of peers and the impact of these friendships on an individual's crime (analogous) behaviors such as college cheating. According to Akers (2008), while the theory may not directly address the role of social learning, traditionally conceptualized as differential association, there might be an interconnected relationship between self-control and social learning. There is a molding via the socialization process that takes place in a person's life that can lead to conformity (or non-conformity), regardless of early indications of low self-control.

Further clarity is needed on the extent to which the relationship between self-control and deviance can be shaped by association with deviant peers. This study examines whether the relationship between self-control and deviance is mediated and moderated by differential association. This investigation extends prior research on the mediating and moderating effects of differential association by assessing this model's applicability to a specific form of fraudulent behavior, academic dishonesty.

Theory Review

Self-Control Theory

Gottfredson and Hirschi (1990) acknowledged that criminals tend to avoid pain and pursue temporary pleasures like everyone else; however, they lack the quality

that makes most people consider the long-term costs of engaging in unlawful behavior. This "quality" is what Gottfredson and Hirschi define as self-control. According to self-control theory, individuals who possess low or poor self-control tend to be motivated by self-interest and are often seeking immediate relief from momentary irritation. The theory posits that poor self-control is due to ineffective parenting and can lead to deviance later in life due to the (nearly) ubiquitous opportunities to commit crimes.

According to Gottfredson and Hirschi (1990), "people who lack self-control tend to be impulsive, insensitive, physical (as opposed to mental) risk-taking, shortsighted, and non-verbal" (p. 90), possessing a tendency to engage in criminal behavior. The theory also describes individuals with poor self-control as being more likely to engage in criminal acts that offer immediate gratification. These acts tend not to require much planning or skill and usually offer little long-term benefits. Moreover, individuals with less than sufficient self-control tend not to weigh the costs and benefits of deviant acts.

Empirical tests of self-control theory are extensive. A wealth of research indicates that there is a significant relationship between self-control and criminal deviance (*see, for example,* Deng & Zhang, 1998; Gibbs & Giever, 1995; Grasmick et al., 1993; Piquero & Tibbetts, 1996; Pratt & Cullen, 2000; Polakowski, 1994; Sellers, 1999). According to the *General Theory of Crime,* poor self-control also predicts behaviors that are "analogous" to crime (Gottfredson & Hirschi, 1990). These have been referred to as "imprudent behaviors" by others (Grasmick et al., 1993). Examining juvenile and student populations specifically, research has investigated the relationship between low self-control and a variety of analogous behaviors including disruptive classroom behavior (Nelson & Boisvert, 2011), academic dishonesty/cheating (Cochran et al., 1998; Tibbetts & Myers, 1999), and publicly offensive behavior like profanity and "drunk dialing" (Reisig & Pratt, 2011). When studied among adult and non-student populations (Arneklev et al., 1993; Burton et al., 1999), research has examined the relationship between self-control and a variety of analogous public behaviors (e.g., intoxication, being loud and unruly, urination, etc.) and imprudent workplace behaviors (e.g., skipping work without an excuse). Several scholars have suggested that there is a need to investigate the process that governs the relationship between self-control and deviance that moves beyond merely confirming the relationship (Li et al., 2015; Mears et al., 2013). Given the extensive body of evidence linking exposure to deviant peers with criminal behavior, examining the role of social learning in this process is worthwhile.

Differential Association and Social Learning

Social learning theory originated with Edwin Sutherland's differential association. Sutherland (1939) proposed that individuals learn the attitudes, motives, and techniques for criminal behavior. This behavior ensues when definitions unfavorable to law violations are outweighed by definitions that are favorable to the violation of the law. People also vary in their exposure to normative patterns of behavior through their association with others (Akers, 2001). Criminal behaviors are, therefore,

learned and reinforced by delinquent peers (Akers, 1973; Burgess & Akers, 1966; Cohen, 1955).

Social learning theory retained the primary process outlined in differential association – that crime is based on social interaction. Differential association with others also shapes an individual's definitions, and this results in deviant behavior. Akers (2001), however, extended the theory by proposing that definitions may either be very broad or specific to a specific situation. These definitions may also be positive, negative, or neutralizing in nature. A positive definition suggests that crime is defined as desirable, a negative definition is oppositional to crime, and a neutralizing definition means that crime is permissible.

Akers also discussed the role of modeling in his conceptualization of social learning. Initially, crime might be imitated (or modeled) before strong definitions are formed. However, as (un) pleasurable consequences are experienced, acts that are reinforced with rewards or the avoidance of discomfort increase in frequency. Acts that are less likely to be repeated are those where punishment is anticipated (Akers, 1998, 2001; Akers & Jensen, 2003; Akers & Sellers, 2009; Akers et al., 1979). Deviance will then become stable as individuals are embedded in an environment in which deviance is reinforced, and definitions of pro-criminal behaviors are easily accessible.

Previous tests of social learning theory indicate that social learning variables are moderate to strong predictors of a wide variety of different anti-social behaviors (*see, for example,* Agnew, 2001; Andrews & Bonta, 2006; Cao, 2004; Gendreau et al., 1996; Kubrin et al., 2009; Lipsey & Derzon, 1998; Warr, 2002). Pratt et al.'s (2010) meta-analysis of social learning theory reported an effect size between deviance and anti-social attitudes, or differential association definitions, were very strong; however, the relationship between differential reinforcement and deviance was generally modest. Despite the differences in effect size, it is evident that social learning plays a role in influencing anti-social and deviant outcomes that should be considered by theorists who favor GTC.

Uniting Self-Control and Deviant Peer Association

To increase our understanding of deviance, it is also a common practice to incorporate components of one theory into another. For example, studies have presented self-control models that incorporate indicators based on routine activities theory (Akers, 1990; Nagin & Paternoster, 1993; Piquero & Tibbetts, 1996; Seipel & Eifler, 2010), or elements of social bond theory (Hwang & Akers, 2003; Morris et al., 2011; Taylor, 2001).

Some of the findings are mixed on whether self-control washes out the effect of other theoretical constructs. Paternoster and Brame (1998) have suggested that there may be both time-stable differences and additional dynamic factors beyond self-control that are necessary to explain the variation in criminal and analogous behavior. Both Grasmick et al. (1993) and Longshore et al. (2004) have demonstrated the important contributions that criminal opportunities make to self-control models. There is evidence that bonds to conventional society can interact

with self-control, with self-control still exhibiting direct effects on deviance and analogous behavior like substance abuse (Polakowski, 1994; Tibbetts & Whittimore, 2002).

Prior research also indicates that deviant associations can mediate the effect of low self-control on deviant behavior (*see* Boman & Gibson, 2011; Dongping et al., 2013; Higgins et al., 2006, 2012; Holt et al., 2012; Li et al., 2015; Meldrum et al., 2019). For example, in their study of bullying perpetration and victimization, Cho and Lee (2020) demonstrated that delinquent peer associations partially mediated the relationship between low self-control and bullying. In a study of street youth, Baron (2003) found that low self-control was a strong predictor of crime, especially violent crime. However, the study demonstrated that the presence of deviant peers helped mediate the relationship between low self-control and crime, concluding that "criminal associates might influence people with low self-control to recognize opportunities for crime and define certain crimes and analogous acts as worth pursuing" (Baron, 2003, p.417). This finding confirmed earlier findings by Evans et al. (1997) who had demonstrated that the impact of criminal associates on crime remained significant even after accounting for self-control. It is important to note that the existence of these delinquent peer associations is still consistent with Gottfredson and Hirschi's (1990) expectation for general peer rejection among those with low self-control. For example, in her study of adolescent delinquency, Chapple (2005) demonstrated that both peer rejection and association with delinquent peers were predicted by low self-control.

Most of the cited studies found that the association with deviant peers partially mediated the relationship between self-control and deviance. Among the handful of studies that examine combined effects, it is clear that individuals with poor self-control who have deviant social ties are more likely to engage in crime (analogous) behaviors (Gibson & Wright, 2001; Higgins & Makin, 2004; Higgins et al., 2007; Wright et al., 2001). Importantly, in their meta-analysis of research on the general theory of crime, Pratt and Cullen (2000) found that models that incorporated social learning variables in combination with self-control explained approximately 15% more variation in crime than did models not controlling for social learning. Prior research generally indicates that self-control, regardless of how it is measured, generally remains a significant predictor of delinquency. The overall results also suggest that peer friendships and its impact on deviance needs to be further explored. Despite the growing support for the assumption that deviant peer friendships partially explain the link between self-control and deviance, it is not clear how this process works and whether peer influence has a moderating influence on the hypothesized relationship. Furthermore, researchers have not yet considered these relationships in the context of college cheating. The current study contributes to this literature by examining fraudulent behavior (college cheating) and testing the mediating and moderating influence of deviant peer association on the relationship between self-control and crime (analogous) behavior with the following formal hypotheses:

Hypothesis 1: Poor self-control increases deviant peer associations.

Hypothesis 2: Deviant friendship mediates the relationship between self-control and imprudent behavior.

Hypothesis 3: The relationship between self-control and imprudent behavior is conditioned (moderated) by the number of deviant peer associations.

Methods

Procedure and Sample

Research participants were recruited from a convenience sample of 24 classes representing more than a dozen different academic disciplines offered by a small, private liberal arts college located in the northeastern region of the United States. An anonymous survey was administered given the sensitive nature of questions posed, i.e., self-reported acts of academic dishonesty while taking courses at this institution. At the beginning of class, the instructor was asked to leave the room while the researcher informed students that participation was completely voluntary and that neither the teacher nor researcher would be able to identify those who decided (not) to take the survey as questionnaires collected from all classes would be mingled together. After fielding questions from prospective participants, the researcher left the room while surveys were completed. All students, whether they chose to participate or not, were asked to seal the questionnaire in an envelope and to place it in a cardboard ballot box located in the back of the classroom. A total of 490 surveys were collected, and not a single student refused to participate. However, only 94.9% of students ($n = 465$) provided usable data for this study. Table 1 presents descriptive information about the sample.

Measures

Independent and Control Variables

Two control variables were employed for this study. Prior research consistently finds that females cheat less than males (e.g., Bowers, 1964; Chapman & Lupton, 2004; Genereux &McLeod, 1995; Kobayashi & Fukushima, 2012); therefore, gender (0 = *Female*, 1 = *Male*) was employed as a control. Additionally, class standing (1 = *Freshman* through 4 = *Senior*) was used as a proxy control of cheating opportunities. A senior, for example, would have more opportunities to have ever cheated than a first-year student based on the number of classes taken.

As for the theoretical predictors, self-control is measured using a widely employed scale (Grasmick et al., 1993). All 24 items in the additive scale ($\alpha = 0.74$), gauging the six traits of the personality construct, were measured by a four-point Likert scoring technique (4 = *Strongly Disagree,* 3 = *Disagree*, 2 = *Agree*, 1 = *Strongly Agree*). High scores on the measure represent poor self-control. Finally, two variables were created to measure differential association. Exposure to deviant peers was measured by asking respondents to indicate how many of their three closest college friends have ever cheated in college. Finally, an unfavorable definition of academic dishonesty was measured by the response to the following statement: *Cheating is justified*

Table 1 Descriptive Statistics ($n = 465$)

Variables	Description	Min–Max	*M*	*SD*
Control Variables				
Male	0 = Female, 1 = Male	0–1	.40	.49
Class standing	Proxy measure of cheating opportunities (1 = Freshman, 2 = Sophomore, 3 = Junior, 4 = Senior)	1–4	2.33	1.04
Independent Variables				
(Low) self-control	24 item scale (Grasmick et al., 1993)	36–76	55.59	5.95
Friends cheat	Number of three closest friends who have cheated	0–3	1.61	1.16
Favorable definition	Cheating is justified when a senior needs to pass a class in order to graduate 1 = (Strongly) Disagree, 2 = Mixed Opinion, 3 = (Strongly) Agree	1–3	1.40	.62
Dependent Variable				
Cheating scale	13 item scale that measures the frequency of fraudulent behavior –exam cheating, intentional plagiarism, fabrication, and use of deception – during college career. Each item measured as: 0 = Never, 1 = Once, 2 = Twice, 3 = Three times, 4 = Four Times 5 = Five or more times	0–46	6.40	6.89

when a senior needs to pass a class in order to graduate on time. The item was initially measured using a five-point Likert scoring technique (1 = *Strongly Agree*, 2 = *Agree*, 3 = *Mixed Opinion*, 4 = *Disagree*, 5 = *Strongly Disagree*) but was recoded to 1 = *Strongly Disagree or Disagree*, 2 = *Mixed Opinion*, 3 = *Strongly Agree or Agree*.

Dependent Variable

The composite measure ($\alpha = 0.75$) consists of the self-reported frequency of academically dishonest behaviors while the respondent was in college. Thirteen questions, employed in previous studies (Ferrell & Daniel, 1995; Stern & Havlicek, 1986), covered several distinct domains of academically fraudulent behavior – test cheating, intentional acts of plagiarism, fabrication ("dry labbing") and deception. As the results in Table 2 suggest, cheating is quite prevalent (82.2%) in this sample. In fact, those who did not cheat are the deviants, proportionally speaking. Among the different types of cheating, fabrication (56.8%) was the most frequent followed by intentional acts of plagiarism (53.6%), test cheating (50.1%), and deception (23.4%). Finally, intentionally copying (word-for-word) a sentence, phrase, or paragraph from a source without citing the appropriate work was the most repeatedly (38.5%) committed act of academic dishonesty.

Results

Bivariate Analysis

Among all theoretical variables tested, the strongest correlate of cheating is close associations with college friends who also cheat ($r = 0.48$, $p \leq 0.001$), followed by possessing a definition that is favorable towards cheating ($r = 0.39$, $p \leq 0.001$) and poor self-control ($r = 0.37$, $p \leq 0.001$). As for gender differences, males are significantly more likely to frequently cheat ($r = 0.29$, $p \leq 0.001$), possess lower levels of self-control ($r = 0.17$, $p \leq 0.001$), have friends who have cheated ($r = 0.22$, $p \leq 0.001$), and they are more likely to hold a favorable definition towards the violation of academic integrity rules ($r = 0.27$, $p \leq 0.001$) as compared to females. Regarding self-control, participants with less than ample self-control are likely to associate with friends who cheat ($r = 0.26$, $p \leq 0.001$) and subscribe to a favorable definition of cheating ($r = 0.31$, $p \leq 0.001$). Finally, those with friends who have cheated in college are more likely to believe that cheating is acceptable ($r = 0.25$, $p \leq 0.001$) (Table 3).

Multivariate Analyses

Mediation Test Table 4 below presents the results of a series of hierarchical regression analyses – controls only, controls with (low) self-control, and controls with all theoretical variables. As Model 2 reports, the amount of explained variance increases by 13% with the addition of (low) self-control. When differential

Table 2 Descriptive Statistics for Cheating Scale Items ($n = 465$)

Type of Academic Dishonesty	*M*	*SD*	Prevalence	More than once
Test Cheating	**2.05**	**3.31**	**50.1%**	**37.0%**
Copied another student's test answers	.92	1.50	37.4%	23.9%
Used a cheat sheet, viewed notes previously written on the desktop or on your hand	.63	1.29	27.1%	16.1%
Secretly looked at your notes	.34	.94	16.6%	9.0%
Left the room to look at hidden notes	.09	.45	5.6%	2.2%
Changed a response after a test was graded, then reporting that there had been a misgrade and requested credit for your altered response	.06	.32	3.9%	1.5%
Plagiarism	**2.35**	**3.03**	**53.6%**	**43.4%**
Intentionally copied (word-for-word) a sentence, phrase, or paragraph from a source in your paper without citing the appropriate work	1.56	1.92	50.1%	38.5%
Intentionally presented an author's ideas as your own in a term paper without citing the proper references	.79	1.42	31.8%	21.1%
Fabrication	**1.59**	**2.04**	**56.8%**	**40.0%**
Faked results of a lab experiment that you ran but for which correct results were not obtained	1.20	1.46	53.3%	18.7%
Written a lab report without actually doing the experiment	.39	.95	20.6%	9.7%
Deception	**.42**	**.98**	**23.4%**	**9.2%**
Made up a story in order to take an examination or quiz at a later date	.31	.75	19.8%	7.3%
Claimed to have handed in a term paper or assignment when in reality you did not	.09	.34	6.9%	1.5%
Claimed to have handed in an exam or quiz when in reality you did not	.01	.08	0.6%	0.0%
Purchased or submitted a term paper written by a business that sells research papers	.01	.16	0.9%	0.2%
Total Cheating Frequency Scale($\alpha = .75$)	**6.40**	**6.89**	**82.2%**	**73.3%**

NOTE: Categories for each question were 0 = *Never,* 1 = *Once,* 2 = *Twice,* 3 = *Three Times,* 4 = *Four Times,* 5 = *Five or More Times*

Table 3 Bivariate Correlations ($n = 465$)

	Cheat Scale	*Male*	*Class Standing*	*(Low) Self-Control*	*Friends Cheat*	*Favorable Definition*
Cheat Scale	–					
Male	.29***	–				
Class Standing	.18***	-.02	–			
(Low) Self-Control	.37***	.17***	-.11*	–		
Friends Cheat	.48***	.22***	.11*	.26***	–	
Favorable Definition	.39***	.27***	-.03	.31***	.25***	–

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

association variables are added (*see* Model 3), the amount of variance for the dependent variable, frequency of cheating, increased by an additional 15%.[1] While all theoretical variables are statistically significant in Model 3, the magnitude of the (low) self-control coefficient is reduced by 38.9% (from 0.36 to 0.22). Among all theoretical variables, association with friends who cheat is the strongest predictor of cheating frequency ($\beta = 0.32$, $p \leq 0.001$).

Since the hierarchal regression analyses suggests that deviant friendship mediates the relationship between (low) self-control and frequency of cheating, an additional evaluation was undertaken to estimate the significance of the indirect effect using a bias-corrected bootstrapping method (Preacher & Hayes, 2008). The analysis was performed employing model 4 (simple mediation model) of the PROCESS macro version 3.5.3 (Hayes, 2013). The default bootstrap approach (5,000 resamples) was used to estimate the 95% confidence interval for the indirect effect. As the results in Table 5 indicate, (low) self-control is a statistically significant predictor of the number of close friends that cheat ($b = 0.039$, s.e. $= 0.009$, 95% CI [0.022, 0.057], $\beta = 0.202$, $p = 0.003$). Additionally, cheating friends is also a significant predictor of cheating frequency ($b = 1.926$, s.e. $= 0.233$, 95% CI [1.468, 2.385], $\beta = 0.324$, $p = 0.000$). The findings also show a significant indirect effect between (low) self-control and cheating frequency mediated by associations with friends who cheat ($b = 0.076$, Bootstrap 95% CI $= 0.039$ and 0.117), with the mediating variable accounting for 22.8% of the total effect on cheating frequency. In summary, the evidence lends support for a partial mediation effect as (low) self-control remains statistically significant after controlling for the mediating variable.

Moderation Test This analysis was performed employing model 1 (simple moderation) of the PROCESS macro to determine if deviant friendship moderates the relationship between (low) self-control and frequency of academic dishonesty. The independent variable, (low) self-control, and moderator, number of

[1] In a separate analysis not shown, (low) self-control increased explained variance by 4.2% when added to a model with controls and differential association variables. Furthermore, decreases in effect size for the number of friends who cheat (13.5%) and unfavorable definitions to cheating (18.5%) were modest.

Table 4 OLS Regression on Cheating Frequency Scale ($n=465$)

	Model 1			Model 2			Model 3		
	b	SE	β	b	SE	β	b	SE	β
Male	4.04***	.61	.29	3.18***	.58	.23	1.70**	.54	.12
Class standing	1.21***	.29	.18	1.47***	.27	.22	1.16***	.25	.17
(Low) self-control				.42***	.05	.36	.26***	.05	.22
Friends cheat							1.93***	.23	.32
Favorable definition							2.44***	.44	.22
Intercept	1.97*	.78		-21.43***	2.80		-17.79***	2.54	
R^2	.11***			.24***			.39***		

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

Table 5 Mediation Analysis

Variable/Effect	*b*	SE	*t*	*p*	95% CI	
					Boot LLCI	Boot ULCI
(Low) Self-Control ➔ Friends Cheat	.04	.01	4.40	.003	.02	.06
(Low) Self-Control ➔ Cheating Frequency	.26	.05	5.63	.000	.17	.35
(Low) Self-Control ➔ Friends Cheat ➔ Cheating Frequency	.33	.05	6.95	.000	.24	.43
Effects						
Direct Effect	.26	.05	5.63	.000	.17	.35
*Indirect Effect**	.08	.02			.04	.12
Total Effect	.33	.05	6.95	.000	.24	.43

* Based on 5,000 bootstrap samples

Table 6 Moderation Analysis

	b	SE	t	p	LLCI	ULCI
Male	1.55	.53	2.94	.003	0.51	2.60
Class standing	1.15	.23	5.09	.000	0.71	1.59
(Low) self-control (centered)	0.25	.04	5.83	.000	0.17	0.34
Friends cheat (centered)	1.97	.23	8.51	.000	1.51	2.42
Favorable definition	2.42	.55	4.38	.000	1.33	3.51
Interaction	0.08	.04	2.12	.035	0.01	0.16
Intercept	-.42	.89	-.48	.635	-2.18	1.33
R^2	0.40			.000		

close friends who cheat, were mean centered and an interaction term was created. The results, presented in Table 6, show a statistically significant interaction effect ($b = 0.081$, s.e. $= 0.038$, $p = 0.035$), lending support for a moderating effect. The inclusion of the interaction term, while statistically significant, was modest (R^2 change $= 0.007$, $F(6, 458)$, $p = 0.035$). A deeper probe was undertaken to determine the nature of the moderated relationship by plotting the simple slopes between (low) self-control and frequency of cheating at three levels of the moderator variable:—1 SD below the centered mean ($b = 0.160$, s.e. $= 0.043$, $p = 0.000$), at the centered mean ($b = 0.253$, s.e. $= 0.043$, $p = 0.000$), and 1 SD above the centered mean ($b = 0.357$, s.e. $= 0.076$, $p = 0.000$). The three levels correspond with the following value clusters: No close friends cheat (low), 1–2 close friends cheat (medium), and all 3 closest friends cheat (high). As illustrated by the interaction plot (*see* Fig. 1), as (low) self-control increases, the frequency of academically dishonest behaviors is elevated by rising exposure to friends who also cheat.

Finally, additional OLS regression models were computed (*see* Table 7 below) to estimate the effect of (low) self-control for participants who reported no or some

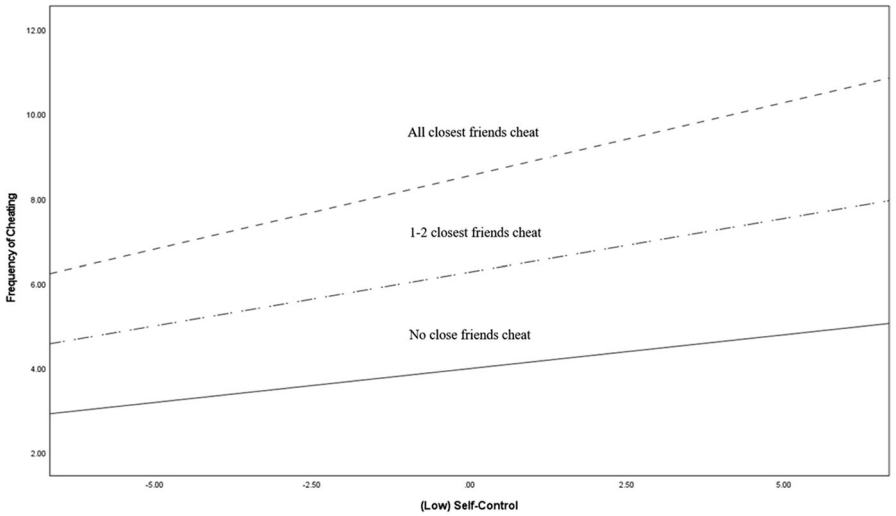

Fig. 1 Plot of Conditional Effects of the Number of Close Friends Who Cheat on (Low) Self-Control and Frequency of Cheating

Table 7 OLS Regression on Cheating Frequency Scale by Exposure to Cheating Friends ($n = 465$)

	Any Friends Cheat (No) ($n = 108$)			Any Friends Cheat (Yes) ($n = 357$)		
	b	SE	β	b	SE	β
Male	-.69	.65	-.10	2.51***	.68	.17
Class standing	.72*	.28	.24	1.47***	.31	.21
(Low) self-control	.10	.05	.19	.33***	.06	.26
Favorable definition	1.44*	.58	.24	3.23***	.54	.29
Intercept	-6.16*	2.80		-20.10***	3.37	
R^2	.16**			.30***		

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$

association with a close friend who cheated in college. This split-sample approach was inspired in part by a similar study that analyzed the moderating influence of social learning variables on self-control and another type of undesirable behavior, texting while driving (Meldrum et al., 2019). The results find that controlling for all other variables in the model with no close friends who cheat, (low) self-control is not a statistically significant predictor of cheating ($\beta = 0.19$, $p > 0.05$). However, (low) self-control is significant ($\beta = 0.26$, $p \leq 0.001$) in the model where participants reported having at least one close friend who cheated in college. Finally, statistically significant differences ($z = -2.99$, $p < 0.01$) between regression slopes were observed for the (low) self-control variable.[2]

[2] Slope differences were computed employing the formula proposed by Paternoster, Brame, Mazerolle, & Piquero (1998).

Discussion

While self-control theory does not attempt to explain the governing role of deviant peer associations in producing fraudulent behavior, proponents of social learning theory argue that it may mediate or moderate the relationship between self-control and crime. This research sought to test this hypothesized relationship by examining one type of crime analogous behavior, academic dishonesty among college students. Analysis of self-reported cheating among students at a college located in the Northeast found that differential association exerts both a mediating and moderating influence between low self-control and cheating. In terms of evaluating a mediating effect, the influence of self-control diminished considerably when deviant peer association and favorable definitions toward cheating was introduced in the regression model. Additionally, the mediating variable accounted for nearly 25% of the total effect of (low) self-control predicting cheating frequency. A moderating relationship was also confirmed when modeling peer associations as the relationship between (low) self-control and cheating frequency was amplified by an increase in the number of close college friends who also cheated. Additionally, (low) self-control was not a statistically significant factor in predicting cheating for participants who reported that none of their close friends had cheated; however, (low) self-control was a statistically significant predictor of cheating among those who reported at least associating with one close friend who had cheated.

This study moves beyond confirming the relationship between self-control and deviance and crime (analogous) behavior by investigating forces that could govern the relationship. More specifically, it highlights the role of deviant friendships in elevating or dampening a propensity for deviant behavior, considering the level of self-control. As argued by Gottfredson and Hirschi (1990), low self-control by itself does not necessarily assure an individual will capitalize on deviant/criminal opportunities that present themselves. Findings from this analysis suggest that the proclivity for deviant behavior, as determined by the level of self-control, is "activated" via interactions with close friends who cheat, increasing the likelihood that an individual will engage in similar deviant behaviors as their friends. This notion that exposure to delinquent peers may activate latent low self-control, either by introducing new forms of cheating, or by demonstrating the advantages of cheating, is consistent with the findings of others, including Evans et al. (1997). While this present research was able to account for the situation-specific presence of peer relations (i.e., close friends who also cheat), we were unable to incorporate other dynamic bonds and variables that may be important to fully understanding the activation or inhibition of low self-control. In his reconceptualization of self-control, Hirschi (2004) acknowledged the importance of dynamic or situation-specific bonds that may interact with static or stable levels of self-control (i.e., personality traits of risk-taking or impulsivity). According to this reformulation of self-control theory, the addition of situation-specific social bonds, like attachment to parents or prosocial institutions, may condition the expression of self-control. We acknowledge this as a limitation of this current

study and encourage further exploration and testing of this revised version of self-control theory that incorporates both the stable (personality) and dynamic (situational bond) elements of self-control (*see* Cho, 2015; Pratt, 2015).

Prior research on self-control and deviance has generally found that self-control is a robust predictor of deviance. Research on social learning and crime (analogous) behaviors also shows that individuals who engage in deviant behavior tend to associate with deviant peers. This study is unable to answer whether deviant individuals simply seek others who subscribe to deviant definitions or whether deviant peers influence others. Still, the notion that cheaters associate with each other is supported by the findings of this study. One challenge in interpreting these results is to explain why the relationship between the association with friends who cheat and academically dishonest behaviors is more salient than the relationship between (low) self-control and crime analogous behavior. At a minimum, this seems to demonstrate the importance of differential association in the elaboration of mechanisms that potentially generate deviant outcomes when poor self-control is present. Many prior studies have concluded that the association between self-control and crime (analogous) behaviors is partially mediated by the association with deviant peers (*see, for example,* Baron, 2003; Boman & Gibson, 2011; Bossler & Burruss, 2010; Chapple, 2005; Dongping et al., 2013; Evans et al., 1997; Higgins et al., 2006, 2012; Holt et al., 2012; Li et al., 2015; Longshore et al., 2004; McGloin & Shermer, 2009) or conditioned by deviant friendships (Gibson & Wright, 2001; Higgins & Makin, 2004; Higgins et al., 2007; Wright et al., 2001). The current study provides further empirical confirmation that one can make a reasonably strong claim for a mediating/moderating effect of deviant peer association on the relationship between poor self-control and deviant behavior.

While this study confirms the mediating/moderating influence of differential association on self-control, there are significant limitations to consider. The data for this study is cross-sectional and, therefore, does not permit causal sequences to be disentangled. Importantly, it is unclear whether cheaters seek out like-minded friends or if exposure to friends who cheat, coupled with less than sufficient self-control, leads to engaging in academically dishonest behaviors. It is also important to acknowledge that social learning theories and control theories (i.e., GTC) hold different assumptions about human nature (*see* Kornhauser, 1978). While social learning theories would attribute cheating to differential associations with cheating peers, control theories might suggest that students exhibiting poor self-control experience social rejection and tend to be drawn to each other as a result. As such, birds of a feather may very well flock together as those with less than ample self-control seek out like-minded others who are more likely to tolerate rule-breaking behaviors. Additionally, these peer associations may be connected to the cheating situation (opportunity), as those with poor self-control may very well gravitate towards others who are trusted enough to participate in an act of academic dishonesty, e.g., communicating answers during an exam. As a consequence, findings from cross-sectional data can be interpreted in multiple ways depending on the theoretical framework employed. Despite these challenges, we encourage future research to explore longitudinal data that would assist in disentangling these relationships and potentially provide for a type of "end-to-end" propositional integration (*see* Bernard & Snipes, 1996; Hirschi, 1979).

Another limitation of the study relates to the ability to generalize the findings, particularly the prevalence and frequency of cheating, to college students beyond this campus. Previous research on academic dishonesty, however, suggests that college student cheating is widespread. Thus, while the findings are particular to this college, they are consistent with the existing research. Another limitation of this study is the lack of controls beyond gender and class standing. Future research should consider the effects of other important characteristics, such as race and class for example, to determine if self-control and/or learning theories can account for differences in imprudent behavior such as academic dishonesty. Additionally, despite the strong empirical associations exhibited by the social learning variables employed for this study, the use of a single item may not have adequately captured key social learning concepts. Finally, it is important that tests of self-control theory address the criticism that the theory, as originally conceived, is tautological (Arneklev et al., 2006). Absent a measure of low-self-control that is separable from the outcome (i.e., crime, deviance, or imprudent behavior) the theory becomes circular. This current study employed an attitudinal measure of self-control developed by Grasmick and colleagues Grasmick et al. (1993) that has previously been used in an effort to address the criticism of tautology. However, given that our outcome of interest, academic dishonesty, is non-criminal in nature, there may be some potential overlap with some of the trait dimensions contained in the self-control scale (e.g., affinity for simple tasks).

Conclusion

In light of the limitations of this study, several issues can be addressed by future research. Given that this study uses cross-sectional data from one college in the Northeast, longitudinal analyses across more institutions would allow for causal inferences regarding the mediating and moderating effect of differential association variables on self-control in explaining crime or crime analogous behavior. While this study confirms that students who cheat tend to associate with each other, it cannot determine the nature of or the directions of influence exerted by these relationships. If deviant individuals who have poor self-control seek out each other, it is unclear whether a "seeker's" awareness of deviant attitudes exhibited by his/her peers leads to future cheating. Furthermore, the awareness of cheating among peers could reflect a general belief that "everyone is doing it," which normalizes the behavior and sustains a culture of cheating. The ability to explore the relationship between these concepts with longitudinal data would assist in the development of the end-to-end integration discussed above.

The assumption that everyone is cheating, whether factual or not, may further reinforce justifications for cheating. Moreover, it is possible that individuals who lack self-control and engage in deviant behavior exert influence on others and encourage them to follow along. In this technological age, an example of this behavior could involve the formation of group chats on social media platforms such as WhatsApp or Facebook Messenger in which the sharing of information by students on assignments and tests is encouraged. Students might be added to

the group chat without prior knowledge of the purpose of the group. However, after being added, they may willfully or passively become participants in a cheating enterprise. This scenario highlights the reflexive nuances within social groups that may be characterized by poor self-control, and in which frequent cheating on the part of one student, or a group of students, may lead to acts of dishonesty in peers who might not have otherwise engaged in the behavior. Understanding this process, though outside the scope of this paper, may represent the next logical step in this line of research.

In short, data on the quality of the friendships among students may help to determine if the influence of differential association on self-control depends in part on how students view friends who engage in imprudent behavior compared to those who do not. It is also unclear how fluctuations in the number of associates who engage in deviant behavior influence the behavior of students with poor self-control. Moreover, it is possible that college cheating among traditional students is largely a continuation of high school behaviors. Such students might have formed dishonest habits before their freshman year in college. With all these issues in mind, future research can help to disentangle the rubric of cheating to increase knowledge on the mediating/moderating effects of social learning on the relationship between self-control and academic dishonesty among college students.

Finally, regarding the implications of our findings, it is clear that academic dishonesty is all too common as 8 out of 10 participants have admitted to cheating at least once in college. There may be a misguided belief that cheating is inconsequential; however, prior research suggests that fraudulent behavior continues when the graduate enters the workforce as evidenced by the link between academic and workplace deviance (Graves & Austin, 2008; Guerrero-Dib et al., 2020; Sims, 1993). Public health, too, can be endangered if cheating in medical school carries over to professional practice (Dyrbye et al., 2010; Sierles et al., 1980). There are a variety of responses available to academics to prevent academic dishonesty that focuses on reducing or eliminating (criminal) opportunities, an important concept in self-control theory. Techniques located in the situational crime prevention literature may prove to be helpful in this regard.

Authors' Contributions Opted out.

Data Availability Data and survey questionnaires are available by contacting the first author.

Code Availability Not applicable.

Declarations

Conflicts of interest The authors have no relevant financial or non-financial interests to disclose.
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All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.
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