THE ROLE OF MOTIVATION AND ATTITUDE ON CHEATING AMONG BUSINESS STUDENTS

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ABSTRACT

This study examines cheating behaviors among 1,747 business students at three public AACSB-accredited business schools. Specifically, using structural equations modeling, we examined the role of intrinsic, extrinsic, and amotivational orientation as well as attitudinal characteristics on: 1) reported prior cheating behavior; 2) neutralization tendencies; and, 3) likelihood of future cheating. Results supported the differentiation of the theoretical constructs within the specified process model. Tests of the theoretical model supported most of the hypothesized relations, most notably significant positive relations between an amotivational orientation and both prior cheating and future cheating proclivity, as well as neutralization tendency.

Cheating by college students is becoming more prevalent and causing educators great concern. One writer called the current state of cheating by college students "epidemic", and cited a finding by the Center for Academic Integrity that more than 75 percent of students on most campuses admitted to engaging in some form of cheating (Hutton, 2006: 171). Diekhoff, LaBeff, Clark, Williams, Francis and Haines (1996) found that a significant percentage of students cheated on tests, quizzes, or assignments. Other researchers documented the same phenomenon (Cizek, 1999; Davis, Grover, Becker & McGregor, 1992). In a recent major survey of nearly 50,000 undergraduate students on over 60 campuses across the US, approximately 70 percent of the respondents admitted to cheating on at least one written assignment (McCabe, 2005).

Unfortunately, it appears that business students may cheat more than do other students (see e.g., Rettinger & Jordan, 2005; McCabe & Trevino, 1995; Baird, 1980), and this higher incidence of cheating is apparently not restricted to undergraduates. McCabe, Butterfield & Trevino, (2006: 299) found 56 percent of their graduate business student sample self-reported cheating versus 47 percent among their non-business graduate student sample. Even the prestigious Fuqua School of Business at Duke University recently announced the biggest cheating incident in its history (Young, 2007).

Attitude towards cheating may in part explain higher levels of cheating among business students. Klein, Levenburg, McKendall, & Mothersell (2006: 204) found that business students have a more lenient attitude towards what constitutes cheating. In another study, Crown & Spiller (1998: 690) found that business students are more tolerant of cheating than are non-business students. One researcher concluded that many business students have a mind set that the ends justify the means, and that the important thing is to get the job done regardless of how it is done (Timiraos, 2002). Although management majors have been found more likely to cheat than accounting majors (Rakovski, 2007), the high overall level of cheating by business students across all majors is still abysmal.

By extension, there is a concern about the extent to which students who cheat in school will cheat in the workplace. According to the Ethical Research Center, one third of workers report regularly observing ethical misconduct in the workplace (Thompson, 2000). On a grand scale, the business world has been rocked by a series of scandals involving WorldCom, Enron, Tyco, and others. Although it is not known if the perpetrators of these scandals had a history of cheating in school, there is evidence that students who cheat in school will cheat in the workplace (e.g., see Sims, 1993; Crown & Spiller, 1998; Granitz & Loewy, 2007). Moreover, the willingness to cheat seems to be a consistent attribute in that those who have cheated in the past are likely to cheat again in the future (Davis & Ludvigson, 1995; Nonis & Swift, 1998).

Much of the research conducted on student cheating over the last 30 years has focused on identifying the characteristics of students who cheat and what can be done to stop them (Jordan, 2001). Studies involving the demographic factors that might identify cheaters, such as age and gender, have not provided consistent results (e.g., see Whitley, 1998). Furthermore, there is little if anything that can be done to influence or change factors that may be specific to a demographic type. If academicians want to better understand why students cheat and what might be done to reduce the propensity to cheat, it is necessary to expand the search for predictors of cheating behavior. Factors that provide consistent predictive results and can be influenced need to be

identified. The purpose of this study is to expand our understanding of the role motivation plays in predicting cheating behavior. A more reliable determination of the factors that motivate and sustain student cheating will facilitate the development of more powerful intervention strategies to limit student cheating (Jordan, 2001: 234).

To examine student cheating from a motivational perspective, Baker (2004: 189) suggests the relevance of Deci & Ryan's work on self-determination theory (1991, 1985). Their theory of motivation is conceptualized as a continuum that is anchored on the left by amotivation, proceeds through extrinsic motivation, and is anchored on the right by intrinsic motivation (Deci & Ryan, 2000).

Amotivation has been conceptualized as the absence of motivation to pursue an activity due to its lack of value to a person, or that person's feeling of incompetence or inability to obtain a desired outcome. (Ryan & Deci, 2000). Fortier, Vallerand, & Guay (1995: 260) argue that "When people are in such a state, they perceive their behavior as caused by forces out of their control; they are neither intrinsically motivated nor extrinsically motivated…" Thus, this construct is similar to that of learned helplessness as described by Abramson, Seligman, & Teasdale (1978).

Extrinsic motivation is considered increasingly self-determined as it moves through a set of ordered categories from left to right (Deci & Ryan, 2000). These motivational categories are termed external regulation, introjected regulation, identified regulation, and integrated regulation. Behaviors that are externally regulated are intentionally directed at either obtaining a positive outcome (e.g. a test grade) or avoiding a negative outcome (e.g. a missed deadline). Of the four types of extrinsic motivation, external regulation (ER) is most similar to the concept of "extrinsic motivation" present in the literature (Fortier et al., 1995). Introjected behaviors (IR) are regulated somewhat internally. Rather than studying because of a looming threat, a student will study in an effort to avoid the sense of guilt that comes from not studying. IR is similar to ER because in neither case does the student attribute personal values to the behaviors. IR and ER are different in that IR represents a more self-determined form of control.

Identified regulation (ID) entails attributing a personal value to a behavior, while still being extrinsically motivated. Integrated regulation (INR), while still a sub-type of extrinsic motivation, is characterized by fully endorsing an activity. Though similar to intrinsic motivation, integrated regulation (INR) is characterized by an activity being important for a valued outcome rather than for a pure interest in the activity for its own sake (Deci, Vallerand, Pelletier & Ryan, 1991).

Intrinsic motivation is the "drive to pursue an activity simply for the pleasure or satisfaction derived from it." (Fairchild, Horst, Finney, & Barron, 2005: 332). Deci & Ryan (1991, 1985) conceptualized intrinsic motivation as a unified construct derived from the presumed innate psychological needs of competence and self-determination that might nevertheless be differentiated into more specific areas. Based on a review of the literature on motivation and educational outcomes, Vallerand et al. (1992) broke down this construct into three self-explanatory types of intrinsic motivation: 1) intrinsic motivation to accomplish (IMTA); 2) intrinsic motivation to experience stimulation (IMES); and, 3) intrinsic motivation to know (IMTK). In the literature on motivation and educational outcomes, IMTK is the most frequently studied factor. Vallerand et al. (1992) argued that IMTK is closely related to constructs such as exploration and

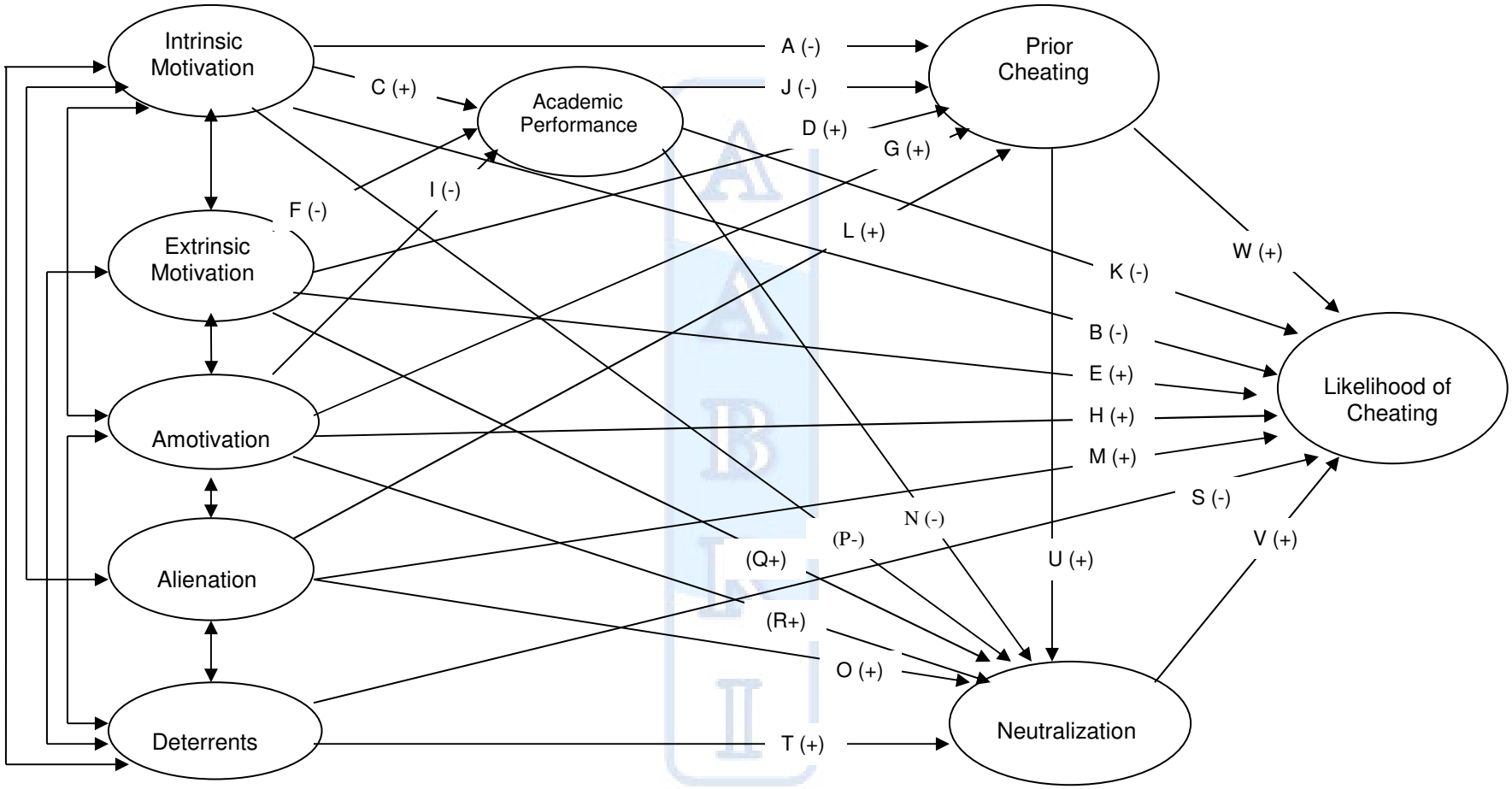
learning goals. Beyond the domain of education, Vallerand et al. (1992) stated that IMTK relates to the search for meaning and the need to know and understand. Behaviors that are motivated by IMTK can be understood as assisting one in the search for understanding or the fulfillment of the desire to acquire knowledge.

MODEL DEVELOPMENT

In order to more fully explore the role of motivation in cheating behavior, this study tests an expanded version of the Smith et al. (2002) model of cheating behavior. That study examined the influence of demographic and attitudinal factors on prior cheating, neutralization, and likelihood of cheating behavior using structural equations modeling analysis. The current study, however, limits its scope to evaluating the influence of attitudinal factors on designated cheating outcomes. It does so in recognition that studies using demographic predictors have yielded inconsistent results and have been of little utility in terms of mitigating future cheating behavior (Jordan, 2001: 234). On the other hand, this study incorporates intrinsic and extrinsic motivation as predictors of cheating behavior in a manner similar to that of Davy et al. (2007), while adding amotivation as an independent predictor of cheating outcomes. In doing so, it will provide an empirical test of Deci & Ryan's (2000) conceptualization of amotivation as an anchor on one side of their posited motivational continuum, and will assess its contribution to the hypothesized cheating dynamic and the potential ramifications for development of cheating mitigation strategies. Baker (2004: 190) notes that little research has been done to assess the influence of amotivation (or different types of extrinsic motivation) on key educational outcomes, citing the fact that most studies have utilized unidimensional motivation measures which do not go beyond simple intrinsic/extrinsic dimensions. This study will address the dearth of research in this area by incorporating amotivation as well as the extrinsic and intrinsic motivation subscales described below. Figure 1 presents the theoretical model to be tested.

Prior studies have examined the relationship between motivation and cheating behavior as noted above. These studies typically differentiate between intrinsic (mastery) goals, extrinsic goals, and performance goals (Jordon 2001: 235). There is evidence that students who have a desire to master subject matter are more likely to be able to demonstrate that knowledge, thereby reducing any need to cheat (Baker 2004: 190). Those who are motivated to obtain valued outcomes or to avoid negative outcomes (extrinsic motivation) may see the potential for gain by engaging in dishonest behaviors. On the other hand, those who are intrinsically motivated by a desire to learn or to engage in an activity are not helped in achieving these desires by engaging in unethical behaviors such as cheating. While intrinsic motivation has been found to contribute positively to learning, there is evidence that extrinsic motivation impairs learning, resulting in poorer performance and increasing the need to cheat (Baker 2004: 190). Thus, paths A and B predict that intrinsic motivation has significant negative relations with the two cheating constructs (i.e., prior cheating and cheating likelihood), whereas path C predicts a significant positive relation with academic performance. Conversely, paths D and E predict significant positive relationships between extrinsic motivation and the two cheating constructs, while path F predicts a significant negative relation with academic performance. Finally, based on Deci and Ryan's construction of

Figure 1
Theoretical Model



Notes: 1. All standardized path coefficients are statistically significant at $p < .05$
2. Paths with double-headed arrows represent covariances between independent latent variables.

motivation as a continuum from positive to negative, amotivation's impact on cheating behavior should be similar, if not stronger than for extrinsic motivation. Thus paths G and H predict significant positive relationships between amotivation and the two cheating constructs, while path I predicts a significant negative relation with academic performance. In turn, numerous studies document a negative relation between academic performance and cheating proclivities (see Rakovski & Levy, 2007; Crown & Spiller, 1998; Whitley, 1998). Therefore, paths J and K posit a negative relation between academic performance and the two cheating constructs.

One of the most often cited attitudinal constructs potentially influencing academic dishonesty is alienation (see Nonis and Swift, 1998: 190). Alienation is the state of psychological estrangement from a culture, which includes feelings of social isolation, powerlessness, and the absence of norms. It is often manifested by deviant behavior (Seeman, 1991). Whitley (1998: 250), in summarizing prior research, notes that students who feel more alienated are more inclined to cheat. Since cheating represents deviant behavior, paths L and M predict that alienation has a significant positive relation with each of the cheating constructs.

Neutralization has also been identified as influencing or actually facilitating cheating behavior. Neutralization represents the rationalizations and justifications for unethical/dishonest behavior used to deflect self-disapproval or disapproval from others (Sykes & Matza, 1957). People who neutralize express support for a societal norm, yet rationalize to permit them to violate that norm. This allows them to cheat without feeling inherently dishonest, thereby eliminating a sense of guilt for the dishonest action. It has been documented that students use neutralization to rationalize academic dishonesty (Nonis & Swift, 1998: 190). Often cited rationalizations for cheating include subject matter difficulty and time constraints (Daniel, Blount, & Ferrell, 1991). Smith et al. (2002) argue that there is less reason to neutralize when there is less of a need to cheat, supporting the notion that those who perform better are less likely to neutralize (path N). Because alienation tends to result in deviant behaviors, it is reasonable to expect that more alienated individuals will be more likely to engage in neutralizing behaviors. Furthermore, Smith et al. (2002) provide empirical evidence of a positive relation between alienation and neutralization, thus motivating the inclusion of path O. Given that intrinsic motivation is positively linked to learning (thus lowering the need to cheat and to rationalize dishonest behavior), path P predicts a negative relation between this construct and neutralization. Previous research (Davy, Kincaid, Smith & Trawick, 2007) has demonstrated a positive relationship between extrinsic motivation and neutralization, thus prompting our inclusions of path Q. Again, applying Deci & Ryan's (2000) continuum concept, amotivation, which is posited to be associated with higher levels of reported cheating, is also expected to have a positive relation to neutralization. Amotivated individuals also need to rationalize their negative behaviors (path R).

The role of in-class deterrents in reducing cheating behaviors is well documented (see Crown & Spiller, 1998: 693-694; Nonis & Swift, 1998: 190). Typical in-class cheating deterrents include announcing penalties for cheating prior to exams, giving essay exams, vigilant monitoring of students during exams, and giving alternate forms of the exam to adjacent students (Hill & Kochendorfer, 1969; Vitro & Schoer, 1972; Tittle & Rowe, 1973; Leming, 1980; Singhal & Johnson, 1983; Barnett & Dalton, 1981).

There has been some debate on the relative effectiveness of reducing cheating by implementing deterrents as compared to moral development education (see Davis & Ludvigson, 1995; Kohlberg, 1996; Leming, 1978). However, research documents the efficacy of various deterrents in reducing cheating behavior (for a review, see Crown & Spiller, 1998: 693-694). Therefore, path S predicts deterrents to have a significant negative influence on the likelihood of cheating. Moreover, deterrents are predicted to have a significant positive influence on neutralization given the logical expectation that one will engage in a higher degree of rationalization for future cheating in the presence of deterrents. The existence of deterrents serves to emphasize that cheating is wrong, thus requiring greater levels of neutralization (path T).

As discussed above, neutralization appears to be a means of justifying dishonest behavior (Nonis and Swift, 1998: 190)) thus prompting the prediction that there is a positive relation between prior cheating and neutralization (path U). Furthermore, prior research (Smith et al., (2002) has provided empirical support to the proposition that neutralization can be used as a rationalization for future behavior: thus, it is predicted to have a positive influence on likelihood of cheating and a mediating effect on the relation between prior cheating and likelihood of cheating (path V).

To reiterate, prior cheating is a good predictor of future cheating (Nonis & Swift, 1998; Davis & Ludvigson, 1995). Thus, path W predicts a positive relation between prior cheating and the likelihood of cheating.

This study's contribution is to provide an independent assessment of and expansion upon the referent cheating model. Prior research that has examined the influence of motivation factors on cheating has primarily used correlation or multiple regression analyses as the means of analysis, with the attendant susceptibility to the biasing effects of method variance and random measurement error. The potential negative effects of those research methods can be to "attenuate estimates of coefficients, make the estimate of zero coefficients non-zero, or yield coefficients with the wrong sign" (Williams & Hazer, 1986: 221). However, as did the referent study, this study uses latent variables with multiple indicators to test the hypothesized relationships depicted in Figure 1. This approach is strongly advocated to address the measurement error problems associated with traditional techniques used to study these relationships (Andersen & Gerbing, 1988; Bollen, 1989; Byrne, 1994; Bentler, 1995). This study should provide a more reliable estimate of each predictor's contribution to students' future cheating intentions by simultaneously estimating (1) the direct effects of motivational, attitudinal, and behavioral constructs and deterrents, and (2) the direct and mediating effects of academic performance, prior cheating, and neutralization.

METHODS

Sample

Business students from three AACSB-accredited regional comprehensive universities, two on the East Coast and one in the Midwest, provided data for this study. Questionnaires were administered in classes. The instructors were not present and the students were assured of anonymity. This convenience sample generated 1,747 usable responses. One Thousand three hundred ten (75%) of the respondents came from the East Coast universities, and 437 (25%) came from the Midwest university. We

conducted analyses to assess whether there were any demographic differences across the three samples. Average age, gender composition, marital status and year in school were similar across the three schools. As a result, we analyzed the data as a single sample.

All academic levels (through Master's level) are represented, although sophomores (n = 252), juniors (n = 579), and seniors (n = 659) comprised over 85 percent of the sample. Age ranged from 17 to 59 years with a median of 21 (μ = 22.28, σ = 4.74), with approximately 75 percent falling within the range of 18 to 22 years. Females comprised 53 percent (n = 926) of the sample, and 92 percent of the respondents (n = 1,602) indicated that they were unmarried.

Measures

In order to facilitate our assessment of the expanded Davy et al. (2007) cheating model, we used their multiple indicator measurement instrument and confirmatory factor-analytic techniques. The confirmatory factor analyses were necessary to confirm the factor structure for the succeeding structural model tests. The measures taken were:

1. Academic Performance.[1] Each student's self-reported score on: a) how he/she rated his or her overall academic performance on a five-point scale ranging from 1 = *very poor to* 5 = *very good*; and, b) how he/she rated his or her own academic performance as compared to that of their peers (perceived academic performance) on a five-point scale ranging from 1 = *very poor to* 5 = *very good* (Nonis & Swift, 1998).
2. In-Class Cheating Deterrents. 12 items were adapted from past studies (Singhal & Johnson, 1983; Davis et al., 1992) to assess the observed frequency of specified in-class cheating deterrents. Students were asked to "Think of all the exams you have taken in college. How frequently have you seen the following implemented by the instructor?" In response, they rated how often they observed each of the 12 deterrents on a 5-point Likert type scale that ranged from "never" to "very often".
3. Alienation. An 18-item adaptation of Ray's (1982) 20-item General Alienation Scale was used. Students reported their agreement with each of the statements on a 5-point Likert type scale ranging from 1 = strongly disagree to 5 = strongly agree.
4. Neutralization. This scale, developed by Ball (1966), was later utilized by Haines, Diekhoff, LaBeff, & Clark (1986). Students were asked to "Please indicate the extent to which you agree that a student is justified in cheating in each of the following circumstances". Responses were made on a 5-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree for each of the 11 items.

[1]Self-reported academic performance was used as a surrogate measure for grade point average since the data collection design (i.e., student anonymity) precluded the collection of objective GPA information on the sample.

5. Prior Cheating. 12 items adapted from Tom & Borin (1988) were used. Students were asked to "Think of all the exams you have taken in college. How often have you participated in each of the activities during exams?" In response, students reported the frequency with which they engaged in each of the 12 cheating behaviors on a 5-point Likert type scale ranging from "never" to "very often".
6. Likelihood of Cheating. 12 items using the in-class cheating deterrents noted in Item **2** above were used. The preface to these items read "You are taking a course that is difficult but important and there is a possibility that you may or may not make the desired grade if you do not cheat. Please indicate how likely or unlikely you are to cheat under the following conditions." Responses were made on the following scale: 1 = very unlikely to cheat, 2 = unlikely to cheat, 3 = neither unlikely nor likely to cheat, 4 = likely to cheat, and 5 = very likely to cheat. Smith et al. (2002: 53-54) illustrate the factor loadings for the Deterrents,

Alienation, Neutralization, Prior Cheating, and Likelihood of Cheating scales as adopted for this study. They also report (p. 56) favorable results from testing the construct and discriminant validity of the six above-referenced measures, thus prompting their adoption for the present study.

The Academic Motivation Scale (*AMS*; Vallerand et al., 1992) consisting of seven subscales, was used to obtain motivation measures. Each subscale purportedly represents a differential state along the motivational continuum, ranging from amotivation to intrinsic motivation, in line with self-determination theory as conceptualized by Deci & Ryan (1985). Recent evidence (Fairchild et al., 2005) fails to fully support the scale's simplex structure along the self-determination theory continuum. Given the mixed results reported in previous research, Davy et al. (2007) used only one of the Extrinsic Motivation subscales. Fairchild et al. (2005, 347) did report that the relationships between external motivation-external regulation (EMER) and the other subscales most clearly displayed a simplex pattern. Based on this evidence, the fact that it is the extrinsic motivational state most distant from Intrinsic Motivation along the continuum (providing optimal chance of showing discriminant validity), and it is consistent with the measure used in the referent study, we selected it as this study's extrinsic motivation measure.

The intrinsic motivation to know (IMTK) subscale was selected as the intrinsic motivation measure for this study. This is consistent with the measure used by Davy et al. (2007). Fairchild et al. (2005: 346) note that the three measured states of intrinsic motivation on the AMS do not follow a continuum, but are simply subtypes of intrinsic motivation. There is no equivalent anchor measure among the intrinsic motivation subscales to correspond to the EMER subscale for extrinsic motivation. However, among the three intrinsic motivation subscales, IMTK is most conceptually equivalent to mastery motivation (i.e., the desire to learn or master a body of information for its own sake). Baker (2004: 190) attributed mastery motivation to higher performance, and as reported above, it is associated with lower cheating levels. In this study's context, we are assuming that if a relationship exists between intrinsic motivation and cheating, it will be most clearly revealed in behaviors that are perceived to be directed at knowledge and learning rather than those of accomplishment or stimulation. Fairchild et al. (2005)

empirically reported the IMTK subscale: 1) to have the highest positive correlation with the intrinsic motivation scale on the Work Preference Inventory (*WPI*; Amabile, Hill, Hennessey, & Tighe, 1994), an instrument designed to assess one's overall intrinsic versus extrinsic motivation for academic work (p. 351); and, 2) to tie (with IMTA) for the highest correlation with the mastery orientation subscale of the Work and Family Orientation Scale (Spence & Helmreich, 1983: 349). The latter is a scale designed to measure why individuals demonstrate various levels of achievement motivation. The IMTK subscale as the intrinsic motivation measure for this study therefore appears to have both conceptual and empirical support.

With respect to amotivation, Fairchild et al. (2005: 353) found scores on the Amotivation (AMOT) subscale of the *AMS* to correlate: 1) positively with the scores from the Motive to Avoid Failure scale (*MAF*; Hagtvet & Nenson, 1997), and the Work-Avoidance subscale of the Attitudes Towards Learning scale (*ATL*; Finney, Pieper, & Barron, 2004); and, 2) negatively with the scores from the mastery and work subscales of the Work and Family Orientation Scale (*WOFO;* Spence & Helmreich 1983), the mastery-approach scale of the *ATL,* and the intrinsic motivation subscale of the *WPI.* These results provide convergent and divergent validity supporting the use of the AMOT subscale in this study[2]

The following motivation measures were used:

1. Extrinsic Motivation. The four-item Extrinsic Motivation – External Regulation (EMER) subcale of the *AMS*. For each item, students are asked to "indicate the extent to which each response is similar to your own." Response were made on a 5-point Likert scale ranging from 1 = *does not correspond at all* to 5 = *corresponds exactly*.
2. Intrinsic Motivation. The four-item Intrinsic Motivation to Know (IMTK) subscale of *AMS*. Response options were identical to those on the EMER subscale.
3. Amotivation. The four-item Amotivation (AMOT) subscale of the *AMS*, with identical response options as those for the extrinsic and intrinsic subscales.

Procedure

We conducted a confirmatory factor analysis on the sample data to independently test the construct and discriminant validity among the constructs represented by the measures. By doing so, we were able to assess whether the factors (expanded to include amotivation) in the referent cheating study would load on the underlying theoretical constructs with our data. To test the complete measurement model, we used the elliptical estimation procedure in EQS Version 6.1 (Multivariate Software, Inc., 2004). Measurement model assessment is a critical first step that must be carried out before testing structural linkages (Anderson & Gerbing, 1988). Table 1 presents the items comprising each latent variable to be tested along with the mean

[2] Contrary to additional predictions of negative relationships, Fairchild et al. (2005: 353) found null relationships between the *AMOT* subscale and the extrinsic motivation subscale of the *WPI*, performance-approach subscale of the *ATL*, and the competitiveness subscale of the WOFO.

TABLE 1
FACTORS AND SCALE ITEMS FOR MEASUREMENT MODEL TESTS

1. Academic Performance (μ = 3.530, σ = 0.678)
   - AP Absolute performance on five-point scale
   - PAP Relative performance to other students on a five-point scale

2. Deterrents
   - D1 Admonitions (μ =2.636, σ = 0.794)
     - DET 2 Request that students do not cheat
     - DET 1 Announce penalties for cheating prior to the test
     - DET 3 Encourage students to report cheating incidents during exam
     - DET 11 Announce that instructor is watching for cheaters but not detection method
   - D2 Monitoring (μ =3.272, σ = 0.586)
     - DET 10 Constantly watch students during the exam
     - DET 8 Walk up and down isles throughout the exam
     - DET 12 Ask students to put all books and personal belongings away
     - DET 7 Distribute different forms of the same test
     - DET 9 Make sure there is an empty seat between each student
   - D3 Format (μ =2.179, σ = 0.571)
     - DET 5 Have someone other than instructor proctor the exam
     - DET 6 Give all essay-type exams
     - DET 4 Assign seats to students

3. Alienation
   - A1 Political Alienation (μ =3.111, σ = 0.700)
     - AL 11 Most public officials are not really interested in the problems of the average person
     - AL 9 For the most part, the government serves the interests of a few organized groups, such as business and labor, and isn't very concerned about the needs of people like myself
     - AL 12 It is difficult for people like myself to have much influence on public affairs
     - AL 10 In spite of what some people say, the lot of the average person is getting worse
   - A2 Social Affiliation (μ =2.932, σ = 0.590)
     - AL 17 Our community is an easy and pleasant place in which to live (R^1)
     - AL 18 We seem to live in a pretty rational and well ordered world (R^1)
     - AL 16 In this society most people can find contentment (R^1)
     - AL 3 Human nature is fundamentally cooperative. (R^1)
   - A3 Social Alienation (μ =2.701, σ = 0.775)
     - AL 2 These days one doesn't really know whom he can count on.
     - AL 1 Beneath the polite and smiling surface of a man's nature is a bottomless pit of evil
     - AL 14 No one is going to care much what happens to you, when you get right down to it
   - A4 Social Optimism (μ =3.554, σ = 0.656)
     - AL 8 Delinquency is not as serious a problem as the newspapers play it up to be (R^1)
     - AL 7 Considering what is going on these days things look brighter for the younger generation (R^1)
     - AL 6 The decisions of our courts of justice are as fair to a poor man as a wealthy man (R^1)

4. Neutralization

N1 Difficulty (μ = 2.159, σ = 0.927)

NEUT 2 He is in danger of losing a scholarship due to low grades.
NEUT 3 One doesn't have time to study because he/she is working to pay for school
NEUT 1 The course material is too hard. Despite study effort, he cannot understand material
NEUT 5 The instructor acts like his/her course is the only one that the student is taking, and too much material is assigned
NEUT 11 The course is required for his degree, but the information seems useless. He is only interested in the grade.
NEUT 4 The instructor doesn't seem to care if he learns to material.

N2 Access (μ = 1.900, σ = 0.843)

NEUT 7 Everyone else in the room seems to be cheating
NEUT 6 His cheating isn't hurting anyone.
NEUT 8 Nearby students make no attempt to cover their answers, and he can see their answers
NEUT 9 The student's friend asks him to help him/her cheat and he can't say no
NEUT 10 The instructor leaves the room to talk to someone during the test.

5. Prior cheating

PC1 Overt (μ = 1.130, σ = 0.299)

CF 12 Took a test for someone else
CF 10 Exchanged papers (answers) during an exam
CF 8 Gave a false reason for missing an exam
CF 9 Changed answers to an exam and submitted it for grading

PC2 Covert (μ = 1.504, σ = 0.564)

CF 1 Looked at another student's test during an exam
CF 2 Allowed another student to look at your paper during an exam
CF 4 Gave answers to someone during an exam
CF 3 Obtained a copy of the test prior to taking it in class

6. Cheating Likelihood[2]

CL 1 (μ = 1.599, σ = 0.790)

C 9 Make sure that there is an empty seat between each student
C 2 Request that students do not cheat
C 4 Assign seats to students
C 8 Walk up and down the isles during the exam
C11 Announce that the instructor is watching for cheaters but not announce the method of detection
C 1 Announce the penalties for cheating prior to the test

CL 2 (μ = 1.600, σ = 0.771)

C 7 Distribute different forms of the same test
C 10 Constantly watch the students during the exam
C 12 Ask students to put all books and personal belongings away
C 3 Encourage students to report cheating incidents during an exam
C 6 Give all essay-type exams
C 5 Have someone other than the instructor proctor the exam

7. Intrinsic Motivation to Know (μ = 3.353, σ = 0.916)

IMTK1	Because I experience pleasure and satisfaction while learning new things
IMTK2	For the pleasure I experience when I discover new things never seen before
IMTK3	For the pleasure that I experience in broadening my knowledge about subjects that appeal to me
IMTK4	Because my studies allow me to continue to learn about many things that interest me.

8. Extrinsic Motivation -External Regulation (μ = 4.168, σ = 0.746)

ER1	Because with only a high-school degree I would not find a high-paying job later on.
ER2	In order to obtain a more prestigious job later on
ER3	Because I want to have "the good life" later on
ER4	In order to have a better salary later on

9. Amotivation (μ = 1.566, σ = 0.820)

AM1	Honestly, I don't know; I really feel that I am wasting my time in school.
AM2	I once had good reasons for going to college; however, now I wonder whether I should continue.
AM3	I can't see why I go to college and frankly, I couldn't care less.
AM4	I don't know; I can't understand what I am doing in school.

[1] Indicates that item was reverse scored.

[2]The items on this scale loaded on a single factor. In order to facilitate the subsequent measurement model tests, the scale items were combined as shown onto two composite indicator variables using a procedure described by Bentler and Wu (1995, pp. 201-202).

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score for each predicted latent variable.

We next conducted EQS structural modeling tests to evaluate the Figure 1 theoretical model. We then dropped statistically nonsignificant parameters from the model based on the output of Wald tests applied to the full model.[3] We assessed model fit using a variety of fit measures described by Bentler (1990a). These include the Normed Fit Index (NFI), the Non-Normed Fit Index (NNFI), the Comparative Fit Index (CFI), the LISREL Goodness of Fit Index (GFI), and the Root Mean Square of Approximation (RMSEA). Numerous fit indices were used because there is no one definitive index of model fit (Fogarty et al., 2000).

Our final analyses consisted of tests of an *a priori* sequence of nested models against the reduced theoretical model. The first sequential model constrained the path from Amotivation to Neutralization to 0. The second sequential model constrained the path from Intrinsic Motivation to Neutralization to 0. The third sequential model constrained the path from Intrinsic Motivation to Academic Performance to 0. The fourth model constrained the path from Amotivation to Prior Cheating to 0. The fifth model constrained the path from Amotivation to Likelihood of Cheating to 0. Finally, the sixth sequential model constrained the path from Amotivation to Academic Performance to 0. This nested sequence of models provided direct tests of the hypotheses that: 1)

[3] The Wald test is a post-hoc procedure that capitalizes on particular sample data, i.e., it is not theory-driven. To determine whether the relations uncovered in this study hold, replication with another sample is needed.

likelihood of cheating is related to amotivation; 2) neutralization is related to amotivation and intrinsic motivation; and, 3) academic performance is related to amotivation and intrinsic motivation. The nested sequence also facilitates a direct examination of the mediating effects of academic performance, prior cheating and neutralization Previous work has focused on direct effects (Baker, 2004). The simultaneous estimation of both direct and mediating effects provide a more complete understanding of the roles each construct might play.

We used Sequential chi-square difference tests (SCDT) to compare the nested structural models (Anderson & Gerbing, 1988). A significant chi-square difference value indicates a significant loss of fit by constraining a path to 0, indicating that the path should be retained in the model (James, Mulaik & Brett, 1982). A nonsignificant chi-square difference indicates the path could be dropped with no significant loss of model fit.

RESULTS

Confirmatory factor analyses of the measurement model indicated significant (at p<. 05) path coefficients from each latent construct to its manifest indicators. The first analysis examined the fit of the full measurement model, i.e., that which allowed all factors to covary with one another. The second analysis examined the reduced model in which statistically nonsignificant covariances were dropped. The results are presented in Table 2.

Table 2
Summary of Measurement Model Goodness of Fit Tests

Measure	Full Model Values	Reduced Model Values[1]	Standard for Acceptance
Chi-Square	1474.302	1476.200	NA
df	288.000	291.000	NA
p-value	<.001	<.001	>.050
Chi-Square/df	5.119	5.073	<2.000
NFI	.942	.912	>.900
NNFI	.942	.942	>.900
CFI	.953	.953	>.900
LISREL GFI	.937	.937	>.900
RMSEA	.049	.048	<.100
(90% Confidence Interval)	(0.046 - 0.051)	(0.046- 0.051)	

[1] The reduced measurement model reflects the release of three factor covariances as determined by examination of the multivariate Wald test output from the test of the full model. The dropped covariances were: 1) Extrinsic Motivation – Cheating Likelihood; 2) Intrinsic Motivation – Prior Cheating; and, 3) Alienation – Performance. By dropping these covariances, the degrees of freedom increased from 288 for the full model to 291 for the reduced model.

The goodness-of-fit summary for the full model indicates that the model provides a good fit to the data. The NFI, NNFI and GFI indexes are above the .90 minimum

prescribed by Bentler (1990a) for well-fitting models. The RMSEA of .049 was below the .06 upper bound for adequate model fit specified by Hu & Bentler (1998). Finally, the CFI of .952 exceeded the cutoff of .95 or higher prescribed by Hu & Bentler (1999) as indicative of adequate model fit.

The multivariate Wald test of the full measurement model indicated that three nonsignificant covariances could be dropped from the model. The goodness-of-fit indices for the reduced model also indicate that the model provides a good fit to the data. With an acceptable measurement model in place, we then tested the theoretical cheating model.

Table 3 provides goodness-of-fit statistics for the tests of the full theoretical model, reduced theoretical model, and the sequence of nested structural models.

Panel A reports that the observed covariances among the data were adequately reconstructed by the full theoretical model with all of the indicators of good model fit exceeding the minimum specifications. At this point, based on the Wald test results, we dropped seven nonsignificant paths from the model. The reduced theoretical model,

Table 3: Theoretical Model Test Results

PANEL A: GOODNESS OF FIT SUMMARY

	Full Model	Final Theoretical Model[1]	Standard for Acceptance
Statistical Tests:			
χ^2	1489.005	1496.365	NA
df	291.000	298.000	NA
p-value	<.001	<.001	>.050
χ^2/df	5.117	5.021	<2.000
Fit Indices:			
NFI	.941	.941	>.900
NNFI	.942	.944	>.900
CFI	.952	.952	>.900
LISREL GFI	.936	.936	>.900
Residual Analyses:			
RMR	.033	.037	<.050
AOSR	.025	.025	<.050
RMSEA	.049	.048	<.100
(90% Confidence Interval)	(0.046 - 0.051)	(0.046- 0.050)	NA
Explained Variance of Dependent Variables:			
R^2 for Academic Performance	.055	.055	
R^2 for Prior Cheating	.083	.080	
R^2 for Neutralization	.451	.447	
R^2 for Cheating Likelihood	.428	.425	

reflecting the release of these parameters, also provided a good fit to the data as indicated by the indices. No significant loss of fit occurred (χ^2_{diff} = 7.36, df = 7, p = .392). Therefore, we used the reduced model in the subsequent nested model analyses.

Panel B indicates that the model which constrained the path from Amotivation to Neutralization resulted in a significant loss of model fit (χ^2_{diff} = 16.441; df = 1, p < .01), indicating that this path should remain in the model. The third model constrained the path from Intrinsic Motivation to Neutralization to 0. Again, the χ^2_{diff} test indicates that this path should remain (χ^2_{diff} = 28.464; df = 1, p < .01). As is also apparent, the χ^2 difference tests for each of the four successive constrained models also indicate that the respective constrained paths should remain in the model.

PANEL B: NESTED MODEL COMPARISONS

Model	χ^2	df	χ^2_{diff}[a]
1. Final Theoretical Model[1]	1496.365	298	
2. Path from Amotivation to Neutralization Constrained to 0	1512.806	299	16.441
3. Path from Intrinsic Motivation to Neutralization Constrained to 0	1524.829	299	28.464
4. Path from Intrinsic Motivation to Performance Constrained to 0	1527.233	299	30.724
5. Path from Amotivation to Prior Cheating Constrained to 0	1529.145	299	30.868
6. Path from Amotivation to Cheating Likelihood Constrained to 0	1535.050	299	38.685
7. Path from Amotivation to Performance Constrained to 0	1548.182	299	51.817

Notes: NFI = Normed Fit Index. Higher values indicate better fit; NNFI = Non-Normed Fit Index. Higher values indicate better fit; CFI = Comparative Fit Index. Higher values indicate better fit; GFI = Goodness of Fit Index. Higher values indicate better fit; AOSR = Average Off Diagonal Squared Residual. Lower values indicate better fit; RMR = Root Mean Square Residual. Lower values indicate better fit; RMSEA = root mean square error of approximation. Lower values indicate better fit.

[1] The final theoretical model reflects the release of seven non-significant parameter estimates as determined by examination of the multivariate Wald test output from the test of the full model. The full model test specified covariances among all of the independent factors as depicted in Figure 1.

[a] All χ^2_{diff} significant @ p<.001.

Table 4 presents the estimated maximum likelihood structural coefficients and significance test results for each of the 23 hypothesized paths. Sixteen of these paths are significant. Figure 2 illustrates the significant paths.

Intrinsic motivation has a significant positive relation with academic performance (.149) and a significant negative relation with neutralization (-.124). Amotivation has a

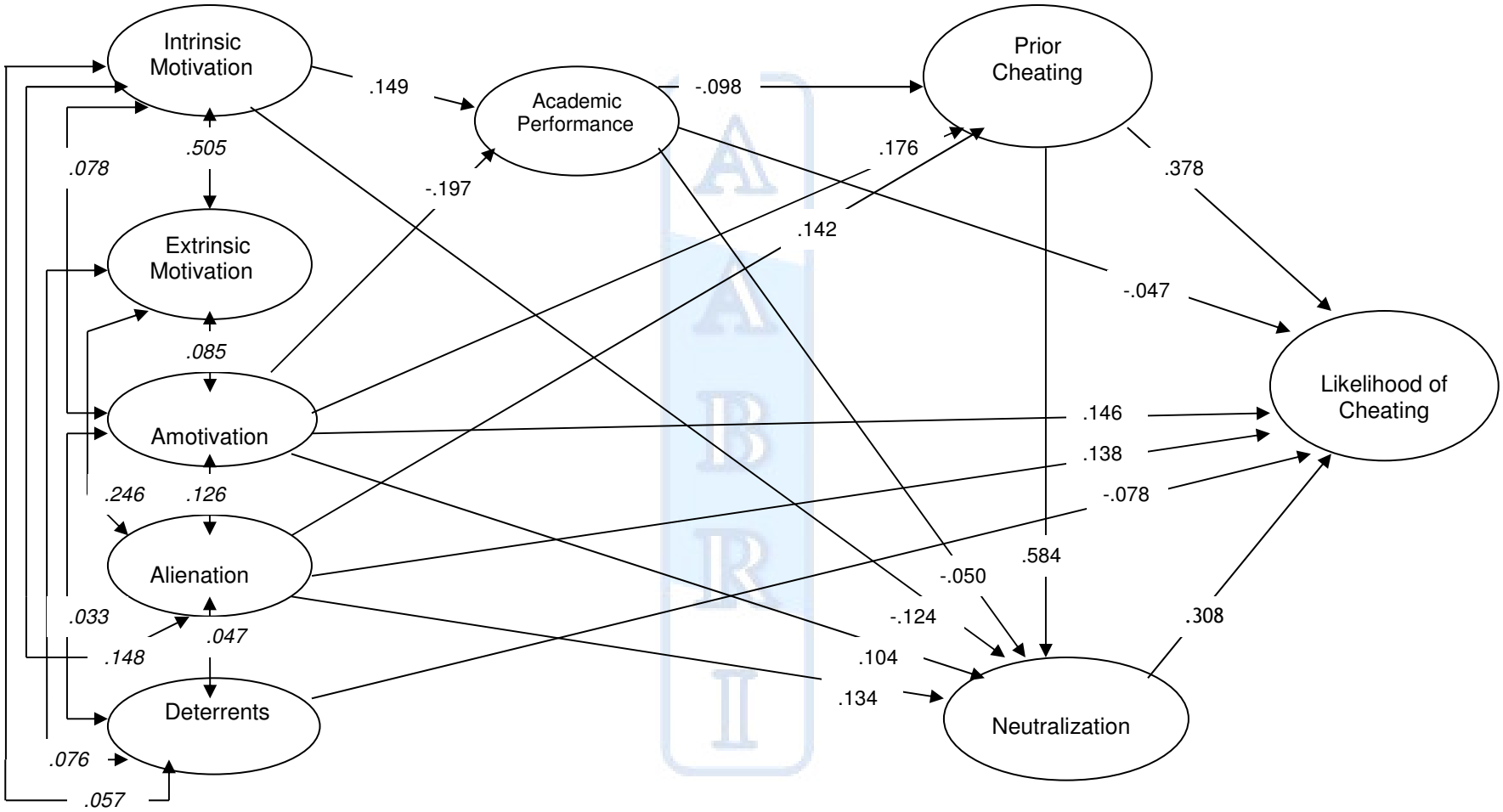
TABLE 4 Structural Equations Results and Estimated Coefficients for the Hypothesized Model [i]				
Hypothesized Relationship		**Standard Coefficient**	**t-value**	**Probability**
Independent Variable	**Dependent Variable**			
Amotivation	*Academic Performance*	*-.197*	*-6.963*	*p<.01*
Extrinsic Motivation	Academic Performance	-.000	-0.011	NS
Intrinsic Motivation	*Academic Performance*	*.149*	*5.464*	*p<.01*
Amotivation	*Prior Cheating*	*.176*	*5.411*	*p<.01*
Extrinsic Motivation	Prior Cheating	.035	0.855	NS
Intrinsic Motivation	Prior Cheating	-.055	-1.488	NS
Academic Performance	*Prior Cheating*	*-.098*	*-3.544*	*p<.01*
Alienation	*Prior Cheating*	*.142*	*3.668*	*p<.01*
Amotivation	*Neutralization*	*.104*	*4.158*	*p<.01*
Intrinsic Motivation	*Neutralization*	*-.124*	*-5.377*	*p<.01*
Extrinsic Motivation	Neutralization	.026	0.778	NS
Deterrents	Neutralization	.024	0.850	NS
Alienation	*Neutralization*	*.134*	*5.003*	*p<.01*
Academic Performance	*Neutralization*	*-.050*	*-2.102*	*p<.05*
Prior Cheating	*Neutralization*	*.584*	*16.535*	*p<.01*
Amotivation	*Cheating Likelihood*	*.146*	*6.288*	*p<.01*
Extrinsic Motivation	Cheating Likelihood	.018	0.590	NS
Intrinsic Motivation	Cheating Likelihood	-.027	-0.942	NS
Deterrents	*Cheating Likelihood*	*-.078*	*-2.601*	*p<.05*
Alienation	*Cheating Likelihood*	*.138*	*5.450*	*p<.01*
Academic Performance	*Cheating Likelihood*	*-.047*	*-2.145*	*p<.05*
Prior Cheating	*Cheating Likelihood*	*.378*	*10.107*	*p<.01*
Neutralization	*Cheating Likelihood*	*.308*	*8.972*	*p<.01*

[i] The italicized lines of information represent statistically significant paths.

NS = non-significant parameter

significant negative relation to academic performance (-.197), and a significant positive relation with prior cheating (.176), neutralization (.104), and likelihood of cheating (.146). Alienation also has a significant positive relation with prior cheating (.142), neutralization (.134), and likelihood of cheating (.138). Deterrents have a significant influence on likelihood of cheating (-.078). Academic performance is associated with lower levels of prior cheating (-.098), neutralization (-.050), and likelihood of cheating (-.047). Prior cheating has a significant positive influence on neutralization (.584) and likelihood of cheating (.378). Finally, neutralization has a significant positive influence on likelihood of cheating (.308). The seven remaining hypotheses were not supported.

Figure 2
Accepted Theoretical Model



Notes: 1. All standardized path coefficients are statistically significant at p < .01 with the exception of the path between Academic Performance and Cheating Likelihood which is statistically significant at p < .05.
2. Italicized values represent statistically significant (@p<.01) covariances between independent factors.

DISCUSSION

The theoretical model received reasonably strong support with sixteen of the twenty three paths supported. Amotivation, alienation, academic performance, prior cheating and neutralization behaved as hypothesized. In addition, the proposed paths for both intrinsic motivation and deterrents received partial support. None of the posited paths for extrinsic motivation were supported. While intrinsic motivation did not have the posited direct relationships with the two cheating constructs, it did have an indirect influence through academic performance and neutralization. Those students who are intrinsically motivated tended to have higher academic performance and, as a result, less of a need to cheat. They also had less of a need to justify their behavior. These results support the argument that those students who are motivated by the desire to learn for its own sake do not see cheating as a means to that end.

At the other extreme is amotivation (Fairchild et al., 2005). The posited paths to the two cheating constructs and neutralization were supported. While these hypotheses were based on Deci & Ryan's motivation continuum with amotivation the most negative, these results bring into question the definition of amotivation. As noted above, it has been defined quite broadly as the absence of drive or intent to pursue an activity (Deci & Ryan, 2000). Fortier et al. (1995) argue that amotivation is similar to learned helplessness. They do not control their behaviors. Rather, their behaviors are nonregulated and nonintentional. These definitions have been used interchangeably. It would seem the absence of motivation (Fairchild et al., 2005) would preclude cheating behavior. A decision must be made to cheat which implies intent and regulation by the individual. In addition, if one believes he/she has no control over these behaviors, there would be no need to neutralize/justify them. None of the items measuring neutralization refer to or suggest a lack of intent or inability to regulate behavior as justifications (see Table 1).

We posit that amotivation is actually the extreme form of extrinsic motivation. Fairchild et al. (2005) hypothesize and support a positive correlation between amotivation and motivation to avoid failure. They argue that amotivated people would be more likely to avoid achievement situations. But what if amotivated people find themselves in just such a situation, like when they are in college? The need to avoid failure is arguably an extrinsic motivation; there is a need to pass the class. As a result, amotivated students may choose to cheat as a means to avoid failure. Fairchild et al. (2005) also argue for and support a positive correlation between amotivation and work avoidance. Work avoidance has been defined as the desire to do as little as possible in an achievement situation (Brophy, 1983; Pieper, 2003). One means of avoiding, or at least reducing work, is to cheat. In both cases a choice is made to do something regarded as wrong/unethical and, as a result, there is a need to justify that behavior.

While the intrinsic motivation and amotivation results were consistent with the hypotheses, extrinsic motivation did not demonstrate any of the posited relations. There are several possible explanations for these results. First is the argument that amotivation is even more externally regulated than is defined and measured under extrinsic motivation-external regulation (EMER). If external regulation is the driving force, amotivation may have absorbed the majority of the variance, eliminating any significant effects by EMER.

A second possible explanation takes into account the results for alienation. Alienation also performed as predicted, with those students who are more alienated having greater cheating proclivities and higher levels of neutralization. These results are the opposite of what Davy et al. (2007) reported. In that study, they report alienation as not having any of the hypothesized relations. Their explanation for those findings was based on the covariance between alienation and extrinsic motivation. Students who are alienated from school are more likely motivated by grades and the desire to get out of the environment (extrinsically motivated). Extrinsic motivation may have accounted for sufficient variance to negate direct effects of alienation.

That argument doesn't seem to be adequate in this case. In the current study, the covariance between the two constructs is even greater, but it is extrinsic motivation that fails to have any of the posited relationships. It is possible that in this study alienation accounted for sufficient variance as to negate the effects of extrinsic motivation. This might suggest the two constructs are quite similar or interchangeable. However, confirmatory factor analysis used in testing the measurement model does not support this conjecture. In addition, alienation had stronger covariances with amotivation and intrinsic motivation, both of which played important roles in the resulting model. Thus, the covariance explanation is not sufficient. Given the discrepancy between this study's findings and those of the referent study, additional work is needed to sort out the effects of alienation and extrinsic motivation when considering both intrinsic motivation and amotivation. For example, is alienation an antecedent of extrinsic motivation (and possibly amotivation) rather than simply a covariate?

Finally there is a concern regarding how EMER is measured. Examining the items used to measure EMER and those used to measure INTK and amotivation, it is apparent that EMER is future focused while the other two are focused on the present (Fairchild et al., 2005). The content problems across the items may explain the inconsistency of the results across the two studies and the failure of extrinsic motivation to enter the model in this study.

With respect to deterrents, one of the two hypotheses was supported. Deterrents had a negative relation with cheating likelihood. The greater the number of in-class deterrents, the less likely it is that students will cheat. We also argued that deterrents emphasize cheating is wrong, resulting in greater efforts to justify cheating behavior. This argument was not supported. These results are consistent with those reported by Davy et al. (2007) and suggest that deterrents reduce students' abilities to successfully cheat and their inclinations to do so.

LIMITATIONS

There are some limitations that must be addressed. First, all of the data were self-reported, introducing the possibility of 1) response bias; 2) the role of negative affectivity when reporting factors like alienation; and, 3) the possibility of under reporting cheating behavior and neutralization. The issue of response bias is addressed when testing the measurement model. A confirmatory factor analysis did not indicate a significant response bias effect. With regard to the remaining two concerns related to self-reporting, procedures were put in place to minimize these. The surveys were completed without the faculty member present. The proctors explained that students'

responses were completely anonymous. They also explained the nature of the analysis process and that only aggregate results would be reported. Also, in order to guarantee anonymity, we had to rely on self-report performance data. We could not collect the information necessary to gather objective data (e.g., GPA). Given that this study did not focus on mean values, but rather on the interrelationships among the proposed constructs within the proposed model, these limitations are of minimal concern.

A final limitation is the cross-sectional nature of the data. While causal paths are implied in the structure of the model, strong causal statements cannot be made.

IMPLICATIONS

The above limitations notwithstanding, a number of important implications for educators can be drawn from viewing the relationships depicted in Figure 2. Previous research has presented profiles of people who are more likely to cheat but has done little to suggest what can be done to reduce cheating occurrences, or more importantly, the desire to cheat. This study moves us toward that goal. The impact of intrinsic motivation and amotivation on cheating behaviors is clearly significant. If we can increase the number of students who are intrinsically motivated, we will reduce not only the occurrence but the desire to cheat. As educators, it is up to us to search for ways to get students interested rather than just wanting their cards punched. By increasing the intrinsic motivation to learn and understand in academic settings, that constructive motivation will possibly persist in other (e.g., professional) settings, having the long-term effect of reducing the need or desire to engage in unethical behaviors in the future.

Unfortunately it may not be that easy. First there exists evidence that intrinsically motivated individuals observe their peers' behavior and if their peers cheat, they also cheat (McCabe, et. al., 2006). In some cases this appears to be the most influential factor in predicting cheating behavior. Environment can also have an impact influencing cheating behavior. Students who believe the testing and/or grading process are unfair have been reported as more likely to show deviant behavior (Greenberg, 1990). Finally, programs have been developed to increase student involvement. These include Learning Communities, Research with Faculty, Study Abroad, etc. These interventions have had mixed results (National Survey of Study Engagement, 2007). Reality may be that many who cheat are intrinsically motivated. Some may be very involved in their course work. Still, they cheat. This suggests there are still factors that must be addressed with regard to the role of motivation and any impact we might be able to have.

Academic performance has an indirect negative influence on future cheating by negatively influencing prior cheating. To reduce the perceived need to cheat to succeed, early intervention strategies such as tutorial assistance for struggling students may help. The tremendous emphasis on grades in our educational system and society as a whole may be serving to increase cheating behavior (Finn & Frone, 2004). Ultimately we need to go back to an emphasis on learning and being able to apply course materials.

For those students who are amotivated, deterrents appear to be effective. The direct negative influence of in-class deterrents on future cheating argues for implementing proven deterrents such as physically separating students during exams, announcing sanctions for cheating, using different forms of the same test, walking up

and down the aisles, and adding essay problems to exams. Educators might consider intensified efforts to teach students early in their academic careers about the standards of conduct expected of all members of their respective professions as a means for developing professional attitudes that reduce the likelihood of future cheating.

Alienation also played an important role in this study. More alienated students reported higher levels of prior cheating and anticipated future cheating, as well as neutralization. Programs targeted at greater student involvement may help alleviate alienation. Class or major requirements for various kinds of involvement (projects requiring community involvement or working with companies) may also help.

Overall, these results suggest that the desire or need to cheat can be significantly reduced by reducing alienation and by putting in place programs and pedagogues that develop and support intrinsic motivation. These programs and pedagogues may have long-term effects by reducing the occurrence of unethical behavior on the job.

Further work is needed. While much of the referent study was replicated, the addition of amotivation resulted in some major changes. As discussed earlier, amotivation and EMER must be looked at more closely in terms of their conceptualizations and measurements. Longitudinal studies are also needed in order to make stronger statements regarding causality.

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