Journal of Business Ethics (2010) 94:441–453
DOI 10.1007/s10551-009-0275-x

Why Do College Students Cheat?

Mark G. Simkin
Alexander McLeod

ABSTRACT. More is known about the pervasiveness of college cheating than reasons why students cheat. This article reports the results of a study that applied the theory of reasoned action and partial least squares methodology to analyze the responses of 144 students to a survey on cheating behavior. Approximately 60% of the business students and 64% of the non-business students admitted to such behavior. Among cheaters, a ''desire to get ahead'' was the most important motivating factor – a surprising result given the comprehensive set of factors tested in the study. Among non-cheaters, the presence of a ''moral anchor'' such as an ethical professor was most important. The article also includes a set of important caveats that might limit this study and suggests some avenues for further study.

KEY WORDS: cheating, ethical behavior, student dishonesty, student misconduct, theory of reasoned action

Introduction

On April 27, 2007, the Dean of the Fuqua College of Business at Duke University announced that 24 students – nearly 10% of the graduating class of 2008 – had been caught cheating on a final exam (Conlin, 2007). A year later, the school was still dealing with the fallout from the incident, which included expelling the guilty students, readmitting and counseling the suspended ones, and dealing with the national attention garnered by the event (Damast, 2008).

A large body of research suggests that the student cheating uncovered at Duke is not an isolated event, but rather a microcosm of a pervasive and growing part of worldwide university activity. However, while a large number of individuals and organizations express concern for such trends, less is known about what to do about it or, more importantly, how to reverse it.

The purpose of our research was to study this problem in greater depth. In particular, we wanted to test the hypothesis that the theory of reasoned action (TRA) can explain cheating behavior, detect its most important causal influences, and identify what factors motivate students to cheat. We also wanted to know what factors are most likely to deter students *from* cheating – a very real and important objective to teaching faculty.

The next section of this article discusses student cheating in greater depth, identifies the major stakeholders in the problem, and explains why cheating is important to them. In turn, the third section of the article discusses the TRA, presents our hypotheses, and describes the partial-least-squares methodology we used to test them. The fourth section presents our results, the fifth section presents some caveats and directions for further research, and the last section summarizes our discussions and presents our conclusions.

Literature review

A variety of interested parties and stakeholders agree that cheating at the college level has become problematic. Who are these interested parties and why their concern?

The importance of college cheating

Perhaps of greatest import is the fact that cheating in college classes is now best described as ''rampant.'' A meta study by Whitley (1998), for example, found that across 46 studies, an average of 70.4% of the college students have cheated in college. In newer studies (Klien et al., 2007; McCabe et al., 2006; Rokovski and Levy, 2007), the means were 70%,

86%, and 60%, respectively. Viewed in an historical perspective, there is also considerable evidence that college cheating is growing (Rokovski and Levy, 2007). A study by Bowers (1964), for example, found that only 26% of students admitted to some form of copying in college, compared to 52% in a similar study conducted in 1994 (McCabe and Bowers, 1994). Similarly, Ogilby (1995) found that self-reported student cheating in colleges increased from 23% to 84% in the years from 1940 to 1982.

Recent experiences with such financial disasters as Enron, Worldcom, and Tyco Corporations have led the general public to ask "how can such things happen?" (Gulli et al., 2007). Thus, a third reason why college cheating may be important is because of the suspected link between such behavior in academia and subsequent unethical behavior in the workplace (Thompson, 2000). A number of studies have found a strong relationship between "cheating" at college and "unethical behavior" at work. Sims (1993), for example, found a high correlation between these two factors, leading him to conclude that dishonesty was less a matter of "an immediate opportunity to cheat" and more dependent upon "a general attitude about honesty in the workplace." Similarly, Nonis and Smith (2001) found that the tendency to cheat at work was highly correlated with the frequency of cheating in college – a finding echoed by Davis and Ludvigson (1995), Swift et al. (1998), and Crown and Spiller (1998). Finally, Lawson (2004) found a similar relationship between "unethical workplace behavior" and "college cheating."

Those who develop and administer certification examinations are particularly concerned stakeholders in the matter of cheating. Examples include the American Institute of Certified Public Accountants (which develops the CPA examination), the $(ISC)^2$ (which administers the Certified Information Systems Security Professional examination), and software vendors such as Microsoft (who conduct a variety of information technology certification examinations). A study conducted by the Association of Test Publishers in 2007, for example, revealed that 75% of them found evidence of cheating on their certification examinations, and most developers also reported that copies of past, and sometimes current, examinations were available for sale on the Internet (Lavelle, 2008; Thibodeau, 2007). In a chilling recreation of a common form of college cheating, surrogates are also available for hire to take certification examinations in return for fees up to several thousand dollars (Thibodeau, 2007).

More recently, a number of authors have noted that technology has given students greater access to learning resources on the Internet, but has also increased the number of ways that students can cheat (Etter et al., 2006). The Internet provides a channel for purchasing term papers, course test banks, and solution manuals to class textbooks from Internet vendors. Emailing friends the answers to examination or homework questions to be given or covered in later sections of classes, is a new twist on information sharing. A real-time example would be using text messaging to send test answers during examinations, or employing cell phones to take pictures and email test materials to others.

Finally, a number of writers have begun to question the concept of what constitutes "academic dishonesty" and, therefore, what are punishable offenses. If success in the corporate world requires teamwork, they argue, then "shared information" and "group success" should be the tools by which to measure academic performance, not individual efforts (Conlin, 2007). For example, Robert I. Sutton, Dean of the Stanford University School of Design, recently stated "If you found somebody to help you write an exam, in our view that's a sign of an inventive person who gets stuff done" (Conlin, 2007). Few academicians known to these authors share Dean Sutton's view. Most of our colleagues feel that widespread cheating at a university tarnishes the reputation of the institution, demeans the value of the degrees granted at them, and disappoints those employers who find that student graduates cannot adequately perform the work suggested by their majors (Knowledge, 2004).

Cheating and colleges of business

Business schools would appear to have a particularly strong interest in cheating activity. We have already identified one reason for this – the apparent link between "cheating in college" and "cheating in the workplace." Studies consistently find that the propensity to cheat in college carries over to the

workplace – a concern of particular interest for professional schools preparing students for business careers. The hope is that ethical behavior, if understood and internalized at the college level, will carry over to future employment.

A related matter is the growing public expectation that business programs include components that teach ethical behavior. In the field of insurance, for example, Eastman et al. (2008) note that ethical behavior impacts property-liability and life insurance business as well as the reputations, business success, and professional relationships of those working in the field. This is one reason why the Association for the Advancement of Collegiate Schools of Business (AACSB) accreditation requirements include the mandate to teach business ethics as a formal and required component of an applicant school's undergraduate degree programs (AACSB, 2009).

A third reason why colleges of business should be concerned with student cheating is the growing body of empirical evidence that, despite the widespread inclusion of course segments about ethical behavior, business students continue to cheat more than non-business students. For example, a study by Harris (1989) found that business majors have lower ethics than other majors. Similarly, Eastman et al. (1996) found that insurance students have significantly lower levels of ethics than insurance professionals, and Carauna and Ewing (2000) found that business students had the highest cheating rate among business, engineering, science, and humanities students.

A final reason why colleges of business are concerned with student cheating is the belief that such behavior tarnishes the reputation and perceived quality of those educational institutions that experience blatant episodes of cheating, or that appear to tolerate it (Gulli et al., 2007). This concern is especially important to private institutions which must necessarily compete with public schools for both student enrollments and alumni donations.

Explaining college cheating with the theory of reasoned action

The widespread practice of college cheating is perhaps better understood than the reasons *why* college students cheat. After all, ''cheating'' would appear to be an overt act and one that requires some effort on the part of the participants. Why do college students cheat?

Cheating motivators

One possible explanatory factor may simply be ''opportunity.'' Although such happenstance might not apply in proctored-examination environments, this explanation seems more appropriate in situations where students have access to online resources. In a study of plagiarism, for example, Abdolmohammadi and Baker (2008) found that the papers from over one-third of their undergraduate students and over 20% of their graduate students were copied from web sources.

A second possible explanation is the ''desire to succeed.'' If ''winning is everything,'' then cheating simply becomes a tool to use in pursuit of this higher goal. Such an attitude is surprising to the authors because it seems to conflict with the goals of ''group success'' that now pervades much of K-12 education. Limited time constraints – e.g., because of athletic activities – or the perception that cheating is a natural part of a student's culture – may reinforce this thinking.

A third possible explanation why college students cheat is the small or non-existent penalties that some instructors impose for infractions. A growing number of universities known to these authors, for example, now insist that faculty at most assign a grade of ''zero'' for the assignment or test on which students cheated – and this only if an instructor both catches, and is able to prove, that a student cheated.

Yet, a fourth possible explanation for college cheating is the reluctance many professors now harbor to prosecute student cheaters – a trend that again enhances the environment for such behavior. At the authors' school, for example, instructors must document student misconduct, and, if challenged by the accused student(s), prove their claim in open hearings. The belief that the penalized and resentful students who remain in classes after such incidents ''poison'' the class environment and negatively affect subsequent student evaluations of the class and the professor adds to this reluctance – thereby leading to a more forgiving, and perhaps permissive, environment for such behavior.

A fifth explanation for college cheating is a growing trend to redefine what constitutes ''cheating.'' McCabe et al. (2006), founder and president of Duke University's Center for Academic Integrity, states that ''stealing a glance on a test, a bit of plagiarism [is] just not on people's radar screen anymore'' (McCabe et al., 2006).

A final factor that might explain cheating behavior – or more accurately, explain why some students do not cheat – is ''moral code.'' In their study, for example, Abdolmohammadi and Baker (2008) found that ''moral reasoning'' was a significant variable in a linear regression of such explanatory factors, and, therefore, seemed to explain why students with high moral codes engaged in less cheating than those without them.

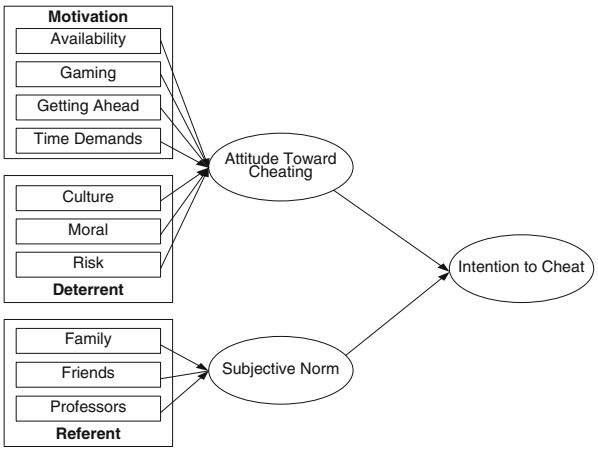

Figure 1. Theory of reasoned action framework.

Methodology

The theory of reasoned action framework

Although modeling something as variable as human behavior is fraught with difficulties, several researchers have attempted to create abstract representations of student integrity. Relevant studies include those involving economic students (Bisping et al., 2008), engineering students (Harding et al., 2007; Yeo, 2007), marketing majors (Chapman et al., 2004), marketing and management students (Kisamore et al., 2007), business majors (Wilson, 2008), and criminal justice and legal studies students (Lanier, 2006).

The fundamental question the authors wanted to address is ''why do college students cheat?'' We began with a fundamental tenant, widely cited in the literature, that cheating is not a random, accidental, or impulsive act, but rather a premeditated, intentional, deliberate one that requires forethought and planning (Deci and Ryan, 2000). Given this premise, the TRA developed by Ajzen and Fishbein (1980) would appear to be an excellent tool for evaluating the intention to cheat.

At its core, TRA asserts that an individual's beliefs, value system, and referential figures (e.g., parents, teachers, or peers) explain subsequent planned behavior. TRA is widely recognized today as a practical framework for explaining rational human behavior, and has proven a valuable aid in explaining a wide variety of diverse behavioral phenomena (Sheppard et al., 1988), including criminal recidivism (Kiriakidis, 2008), Internet purchasing activities (Barkhi, 2008), and athlete training patterns (Anderson and Lavallee, 2008). We therefore considered it to be a useful tool for the exploratory task we sought to accomplish here.

Figure 1 provides the specific TRA construct we used for our study. Thus, our model includes what the literature identifies as major determinants of cheating, including ''availability,'' ''gaming,'' ''getting ahead,'' ''time demands,'' ''culture,'' ''morals,'' and ''risk,'' as reflective indicators. Items related to the influence of ''family,'' ''friends,'' and ''professors'' were relatively independent, causing, forming, or changing the student's subjective norm and were, therefore, categorized them as ''formative variables'' in our model. Since both attitude and subjective norm have been shown to affect intentions in numerous previous studies, we also included the effect of such referents to the individual student's subjective norm.

Procedure

In order to measure the effects of the factors and referents discussed above upon student cheating behavior, the authors developed a survey which they administered at a major public university in the western United States. The survey respondents were the students taking a required MIS class in this school's college of business. Although participation in the study was voluntary, the promise of extra homework credit resulted in the majority of the students in all six sections of the course anonymously

completing the online web survey. We note that our use of an online survey instrument allowed students to answer anonymously and at a time and setting of their convenience. The MIS class itself, however, was taught as a traditional (non-online) course.

This study had three major objectives. First, we wanted to test TRA as a useful model of cheating behavior. Second, if our model was viable, we wanted to measure the relative strength of the factors identified above as causal predictors of cheating activity. Finally, we were interested in examining the differences between self-reported cheaters and non-cheaters. In other words, we wanted to know whether the causal factors motivating these two groups were the same.

We note that the answers to these questions extend beyond the normative ability to model a particular type of human behavior. Our ultimate goal was to determine how best to deter student cheating and encourage ethical conduct – an objective that requires a deeper understanding of cheating and non-cheating behavior. If, for example, students cheat simply because they feel that others are cheating, the corrective action for this is much different from the one if students cheat because they have little fear of detection.

Sample

A total of 158 students completed our survey. Best practices using partial least squares (PLS) analysis discussed below require researchers to deal with missing data in respondent surveys. Possible treatments are (1) replace missing values with mean values, (2) replace missing values with a regressed value, or (3) eliminate the associated survey response from further consideration. We chose to remove observations with missing values. Our final sample, therefore, contained 144 usable responses.

In our final sample, 66 respondents were female and 78 were male. The mean age of a participant was 22.5 years with a standard deviation of 4.02 years. Probably because the participants were taking a "300-level class," the average student had a "junior" class standing. The self-reported mean number of class hours was 13.9 with a standard deviation of 3.4. Thirty-nine students reported working while attending classes. The average time a student worked was 24.4 hours per week with a standard deviation of 10.69. Of the 144 respondents, 87 (60%) reported that they had cheated on an average of 6.1 times. A total of 57 students stated they had never cheated.

Partial least squares analysis

We used PLS to analyze the data based on structural equation modeling techniques (Chin et al., 2003; Gefen and Straub, 2005). There were several reasons for this choice. PLS makes fewer demands on the underlying data distribution and sample size, and it is also capable of analyzing both reflective and formative indicators (Chin, 1998b). Because of these advantages, PLS analysis is now commonly used in conducting behavioral systems research and provides a robust way of analyzing survey data (Chin, 1998a; Chin et al., 2003; Gefen and Straub, 2005; Gefen et al., 2000).

This study used SmartPLS (Ringle et al., 2005) to model our reflective indicators (i.e., behavioral beliefs) and our formative indicators (i.e., the independent referent items). In order to analyze the psychometric properties of the reflective measures, we calculated the Average Variance Extracted (AVE), Composite Reliability (ρ_c), Cronbach's Alpha (CA), Latent Variable Correlations and Cross Loadings.

Table I reports the AVE, ρ_c, and CA for the latent variables. Although there is no standard method for calculating statistically acceptable composites, the generally accepted rule is for composite reliability to be greater than 0.7 (Yi and Davis, 2003). In this study, the lowest composite reliability was for Risk at 0.83, thereby demonstrating sufficient reliability for all the constructs.

The latent variable correlations and factor loadings were derived in accordance with Gefen and Straub (2005) using SmartPLS and are provided in the Appendix. Reliabilities of individual items were examined by verifying loadings greater than 0.7. One loading (C4) was marginal at 0.67. However, all cross loadings for this variable were much less than this loading. Eleven of the 22 indicators loaded greater than 0.9, 10 indicators loaded greater than 0.8 and only the one mentioned here, C4, loaded at less than 0.7. Overall, therefore, we felt that these results demonstrated good discriminant and convergent validity.

TABLE I

AVE, ρ_c, and Cronbach's Alpha

Formative indicators	AVE	ρ_c	CA
Attitude toward cheating	0.80	0.92	0.87
Availability	0.79	0.92	0.86
Culture	0.72	0.88	0.80
Getting ahead	0.80	0.92	0.87
Intention to cheat	0.88	0.96	0.93
Morals	0.79	0.88	0.70
Risk	0.71	0.83	0.69
Time demands	0.75	0.90	0.84

Analysis and results

We formulated our structural path model to test the TRA framework. We calculated the PLS path values and followed with a bootstrap re-sampling method, generating 500 samples to evaluate our model. We then calculated the statistical significance for each path using *t*-tests. Figure 2 shows the β coefficients and p values extracted via PLS. The model accounted for a substantial portion of variance in individual intention to cheat ($R^2 = 0.58$). Student attitude toward cheating accounted for a considerable amount of this variance ($R^2 = 0.62$).

Global fit measure of TRA model

Tenenhause et al. (2005) suggest a global goodness-of-fit measure for PLS modeling—GoF ($0 <$ GoF < 1). This fit measure is determined by taking the square root of the product of the geometric mean of the average communality and the average R^2 of endogenous constructs – GoF = sqrt(average(AVE)*average(Rsq)). Wetzels et al. (2009) propose a cut-off value for communality of 0.5, as suggested by Fornell and Larcker (1981). The purpose of this modification to GoF was to establish R^2 effect size based on Cohen (1988). By substituting 0.50 for the minimum average AVE, GoF criteria for small, medium and large effect sizes were set at the following values: $GoF_{small} = 0.1$, $GoF_{medium} = 0.25$, and $GoF_{large} = 0.36$. These values serve as baseline values for validating PLS models globally. Calculating this value for our model produced a GoF = 0.55 which

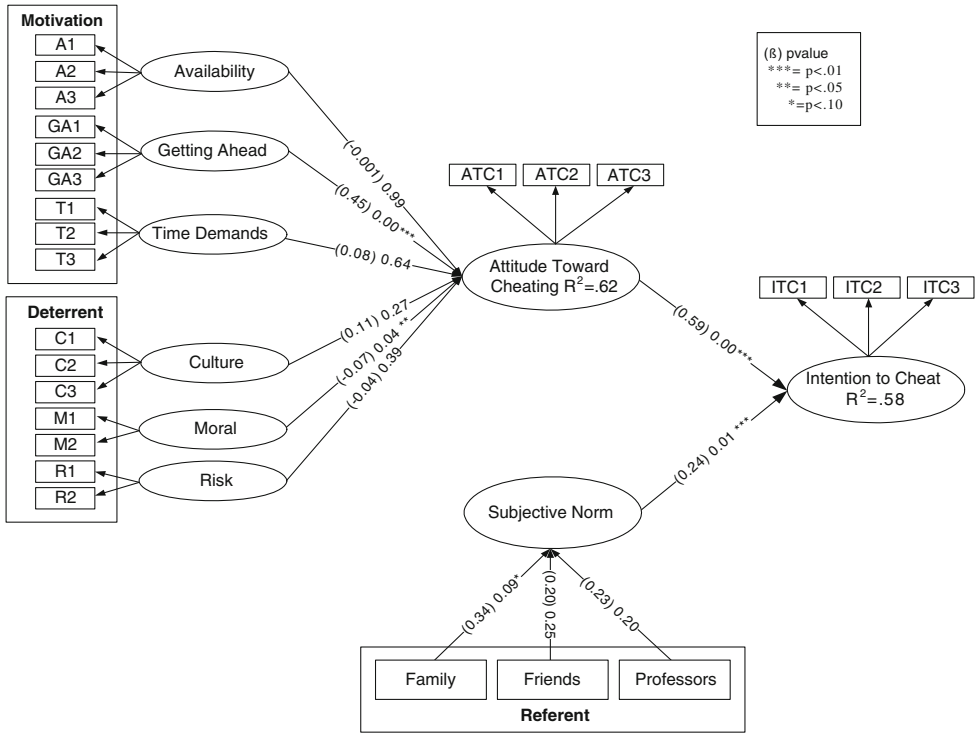

Figure 2. All respondents β, p value, R^2.

exceeds the $GoF_{large} = 0.36$ suggesting that our TRA model performs well when compared to these baseline values (Wetzels et al., 2009).

All student findings

Table II reports our statistical findings for all students involved in the survey. We found that both "student attitude toward cheating" and "subjective norm" were significant determinants of cheating within the TRA model. In other words, both objective influences and subjective norms appear to affect a student's decision to cheat. The coefficient for "attitude toward cheating" was $\beta = 0.59$ with $p < 0.01$, and the coefficient for "subjective norm" was $\beta = 0.24$ with $p < 0.01$.

It is only logical that not all those factors that might affect student cheating do so equally. In this study, we found only one statistically significant motivator: a student's "desire to get ahead" ($\beta = 0.45$ and $p < 0.01$). Neither "opportunity to cheat" ("availability") nor "time demands" seemed to strongly influence student cheating behavior. To us, this is consistent with TRA, which suggests that cheating is better explained by underlying motivational forces (in this case, the "desire for advancement") than by opportunistic or environmental ones. In short, these results suggest that "cheating" is a reasoned, deliberate action rather than an accidental or spontaneous one.

It is also interesting to ask "what deters a student *from* cheating?" In this study, we identified only one statistically significant deterrent: "moral beliefs." These were inversely related to cheating with $\beta = -0.07$ and $p < 0.05$. In addition, we also found one referent marginally influenced this group's subjective norm – "family," with $\beta = 0.34$ and $p = 0.09$.

Of equal interest to us were the two deterrents that did *not* appear to affect cheating behavior: "culture" and "risk." This suggests that neither culture (i.e., the "acceptability" of cheating as a cultural norm) nor the risks involved (and attendant fear of penalties) dissuades students from cheating. The absence of "risk" is particularly interesting to us because it implies that our students do not worry much about getting caught cheating. This finding makes us wonder whether (1) the risks of detection at our school are abnormally low (e.g., because of large classes or lax vigilance) or (2) the penalties for getting caught cheating in our classes are too mild.

Since the referent variables were modeled reflectively, they were not reported in the PLS analysis. Table III details the path value, *t*-test and *p* value for the referent variables. Interestingly for all students, "friends" (i.e., the influence of peers) and "professors" (the influence of professors either as

TABLE III

Referent β, *t*-test, *p* value

	β	*t*-test	*p* value
Family	0.34	1.69	0.09★
Friends	0.20	1.15	0.25
Professors	0.23	1.28	0.20

★★★$p < 0.01$; ★★$p < 0.05$; ★$p < 0.10$.

TABLE II

All respondent results – mean, standard deviation, *t*-test and *p*-value

	Original sample	Sample mean	Standard deviation	*t*-test	*p*-value
Attitude toward cheating → intention to cheat	0.59	0.56	0.10	7.27	0.00★★★
Availability → attitude toward cheating	0.00	0.00	0.06	0.02	0.99
Culture → attitude toward cheating	0.14	0.14	0.10	1.46	0.15
Getting ahead → attitude toward cheating	0.51	0.52	0.11	5.03	0.00★★★
Morals → attitude toward cheating	−0.16	−0.16	0.06	2.63	0.01★★★
Risk → attitude toward cheating	−0.07	−0.08	0.06	1.19	0.24
Subjective norm → to cheat	0.24	0.28	0.09	3.57	0.00★★★
Time demands → attitude toward cheating	0.08	0.07	0.12	0.64	0.53

★★★$p < 0.01$; ★★$p < 0.05$; ★$p < 0.10$.

moral anchors or as enforcers) did not appear to impact a student's intention to cheat.

Cheaters versus non-cheater findings

It is possible that the motivations and deterrents for cheaters are different than those for non-cheaters. Treating our sample as a homogeneous group has the potential to hide such differences. For this reason, we split our data set into two groups – cheaters ($n = 87$) and non-cheaters ($n = 57$) – and analyzed each set independently. We used the same structural model for both groups and in agreement with Wetzels et al. (2009) believe that the number of respondents for each group is adequate for independent analysis.

Table IV reports our results and reveals some interesting differences. Similar to the general group, TRA constructs for cheaters versus non-cheaters were highly significant. In particular, ''attitude toward cheating'' was statistically significant, as was ''subjective norm,'' suggesting that the responses for both cheaters and non-cheaters support TRA. Interestingly, there was a marked difference between the groups concerning ''getting ahead.'' For cheaters, ''getting ahead'' was a significant determinant of attitude toward cheating, while for non-cheaters, it was not.

Two other constructs were important for cheaters. ''Morals'' and ''risk'' had a significant inverse relationship with ''attitude toward cheating,'' but neither ''morals'' nor ''risk'' was significant for non-cheaters. ''Time demands'' did not significantly influence attitude toward cheating for either group, suggesting that ''an insufficient amount of time'' for class work or studying – the type of problems that might be voiced by student athletes or students who were working in outside jobs – was not a strong influence on cheating behavior in this sample. This was an interesting finding to us because, campus-wide, a large proportion of our students work full or part time.

Table V reports p values for both cheater's and non-cheater's subjective norm formative indicators, and shows that the referent variables for ''cheaters'' also varied from the ''non-cheater'' sample. For example, while the opinions of ''family'' remained a significant influence on cheaters' subjective norms,

TABLE V

Cheaters versus non-cheaters, referent β, t-test, p value

	Cheaters			Non-cheaters		
	β	t-test	p value	β	t-test	p value
Family	0.15	1.98	0.05**	0.05	0.87	0.39
Friends	0.36	1.19	0.24	0.25	0.93	0.36
Professors	0.17	0.65	0.52	0.34	2.30	0.02**

***$p < 0.01$; **$p < 0.05$; *$p < 0.10$.

TABLE IV

Cheaters versus non-cheaters β, t-test, p value

	Cheaters ($n = 87$)			Non-cheaters ($n = 57$)		
	β	t-test	p value	β	t-test	p value
Attitude toward cheating → intention to cheat	0.56	6.22	0.00***	0.42	3.06	0.00***
Availability → attitude toward cheating	0.01	0.02	0.98	0.09	0.84	0.40
Culture → attitude toward cheating	0.14	1.54	0.13	0.17	0.70	0.49
Getting ahead → toward cheating	0.63	5.44	0.00***	0.24	1.00	0.32
Morals → attitude toward cheating	−0.19	2.82	0.01***	−0.17	1.23	0.22
Risk → attitude toward cheating	−0.15	2.12	0.04**	−0.01	0.02	0.98
Subjective norm → to cheat	0.30	2.45	0.02**	0.48	3.18	0.00***
Time demands → attitude toward cheating	−0.05	0.28	0.78	0.23	0.63	0.53

***$p < 0.01$; **$p < 0.05$; *$p < 0.10$.

neither ''friends'' nor ''professors'' appeared to have a strong impact on ''non-cheaters.'' What we think this means is that parents, siblings, and other family members are likely to influence a cheater's intention to cheat, in contrast to non-cheater choices, where ''family'' influences were not strong. We wonder whether students are learning that cheating is acceptable at home.

For non-cheaters, the influence of ''professors'' was significant, suggesting that the opinions of ''family'' and ''friends'' are less likely to be an important factor in a student's decision to cheat. In a sense, this is good news. It suggests to us that professors may sometimes act as ''moral anchors'' and positively influence students not to cheat.

Caveats and directions for further research

The subject of ''cheating'' is a delicate matter, as are the results of the studies that attempt to investigate the determinants of such behavior. One obvious concern to us was the use of voluntary and self-reported data concerning behavioral intention (Sheppard et al., 1988). This is particularly problematic for the task at hand, inasmuch as we asked our respondents to self-report infractions of their own university's student code of conduct. The facts that (1) students answered anonymously, and (2) our final percentage of 60% is consistent with other studies mitigate, but probably do not completely overcome, these concerns.

We also note that we used a consistent and invariant construct to model human behavior, which is often neither. In our defense, we note that several researchers have attempted to model academic integrity including engineering students (Harding et al., 2007; Yeo, 2007), marketing majors (Chapman et al., 2004), marketing and management students (Kisamore et al., 2007), business majors (Wilson, 2008), and criminal justice and legal studies students (Lanier, 2006). However, we also note that the statistical reliability that we found for our model may be an anomaly, and we believe that further testing is appropriate.

A third caveat pertains to the venue within which we conducted our study, which was limited to the students in various sections of one class at one university. Although our results are consistent with earlier findings on the widespread prevalence of cheating, these findings must be confined to the context within which they were made – a single, multi-section MIS class required of all business majors (and some non-business majors) at a major, western university. One obvious direction for further study is to perform similar analyses at alternate schools such as at private institutions and/or in classes taken, say, by all university students (such as English, Mathematics, or Western Civilizations classes). Similarly, it may also be useful to distinguish between ''student cheating in required courses'' versus ''student cheating in elective ones.''

A fourth caveat is the fact that, both in the interests of brevity and expediency, we did not examine every conceivable reason that might motivate a student to cheat, or constrain a student from cheating, on a test or assignment. Instead, we focused on what we identified as the major determinants of cheating, but recognize that we might have missed the one important factor that causes a particular student to cheat on a particular examination or plagiarize on a particular term paper. Similarly, our model did not allow us to examine the cross-product effects of our determinants – for example, to identify what factors deter a student with the desire to get ahead from cheating. Again, these seem as important avenues for further study.

A fifth concern for us is the possibility that the factors that motivate cheaters or restrain non-cheaters may differ by the type of cheating involved. We recognize the possibility that those factors that lead to cheating, say, on a take-home assignment or test may not be the same ones that lead to cheating on an in-class examination. A larger sample, with more questions that distinguish between these different types of activities, is required to address this issue.

Finally, we note that our survey was taken during particularly challenging economic times. The extent to which such circumstances encourage cheating behavior is unknown to us, but we recognize again that such factors as ''the need to get ahead at all cost'' might be stronger during such periods than in alternate, more prosperous circumstances.

The results of our model suggest several additional directions for future research. One particularly interesting one to us is to investigate further how ''professors'' influence student cheating. For

example, does the ''role of moral anchor'' mean that professors must exhibit exemplary behavior in the classroom or should they simply enforce rules that deter cheating? One promising way to answer such questions may be to use the theory of planned behavior (TPB) instead of the TRA as a model of student cheating. This TPB framework may be a superior choice because it includes a measure of perceived behavioral control and, as Miller (2005) points out, ''…involves the addition of one major predictor, perceived behavioral control, to the model. In particular, this addition accounts for times when people have the intention of carrying out a behavior, but are thwarted because they lack confidence or complete control over such behavior'' (Miller, p. 127). Attitudinal differences between cheaters and non-cheaters and how the moral anchor role may be implemented would be important to both academia and practitioners. TPB may be able to isolate these differing attitudes.

Conclusions

Student cheating in college appears to be both a pervasive and growing phenomenon. This trend is of particular concern to colleges of business, who not only commonly teach business ethics but often find that cheating is even more common among business students than among non-business students.

The fundamental question of interest to the authors was not ''do college students cheat'' (which, unfortunately, appears to be well-answered in the affirmative), but ''*why* do students cheat?'' In order to answer this question, we used the TRA and PLS methodology to analyze 158 voluntary student surveys that asked questions on cheating behavior. Our major findings were as follows: (1) Approximately 60% of business students admitted to having cheated at least once while attending college. (2) The most important reason why the students in our sample cheated was the ''desire to get ahead.'' (3) A surprising result was that this factor appears to be more important than such alternate, but seemingly equally relevant, variables as ''attitude towards cheating,'' ''opportunity to cheat, ''cultural or moral acceptance of cheating as an established norm,'' ''low risk of detection,'' or ''heavy time demands.''

By separating the cheaters from the non-cheaters, we also found one important reason why students refrain from cheating: the presence of a moral anchor in a faculty member whose opinion mattered. This finding adds to the literature on cheating and offers hope to academic faculty that their efforts to restrain students from cheating are both needed and valuable.

We realize that our results our tentative, and should be treated with care. Among our caveats are: (1) the imprecision of modeling any type of human behavior, (2) the limitations of our survey including the setting (a single course), the type of student (those taking a particular college of business class), and our choice of causal variables and referents, (3) the confounding that might have resulted from treating all types of cheating behavior the same, and (4) the deteriorating economic environment within which we conducted our survey.

Finally, our results also suggest some potential prescriptive action for college faculty and administrators. For example, because cheater's perceptions of ''getting ahead'' appear to significantly affect their attitude toward cheating, studying cases involving individuals who cheat to get ahead but who subsequently suffer negative consequences might be useful. Another avenue could be reinforcement of an intolerant collegiate culture about cheating – i.e., build a moral culture that encourages students to ''do what is right'' rather than ''do what seems personally best.'' Again, cases that emphasize this particular point might be effective as well as have the potential to reinforce the thinking of non-cheaters. Finally, because ''low risk'' seems to affect cheating behavior, professors might want to take class time to clearly define cheating and unequivocally identify the potential negative outcomes of cheating behavior.

Acknowledgments

The authors wish to thank the editors and four anonymous reviewers for their helpful comments and suggestions in revising earlier drafts of this manuscript.

Appendix

See Tables VI and VII.

TABLE VI

Latent variable correlations

	Attitude toward cheating	Availability	Culture	Getting ahead	Intention to cheat	Morals	Risk	Time demands
Attitude toward cheating	1.00							
Availability	0.26	1.00						
Culture	0.59	0.19	1.00					
Getting ahead	0.75	0.37	0.62	1.00				
Intention to cheat	0.73	0.30	0.57	0.59	1.00			
Morals	−0.50	−0.08	−0.39	−0.45	−0.49	1.00		
Risk	−0.30	−0.09	−0.28	−0.22	−0.28	0.31	1.00	
Time demands	0.68	0.32	0.66	0.81	0.58	−0.44	−0.35	1.00

TABLE VII

Latent variable loadings

	Attitude toward cheating	Availability	Culture	Getting ahead	Intention to cheat	Morals	Risk	Time demands
ATC1	0.85	0.25	0.47	0.63	0.62	−0.46	−0.26	0.60
ATC2	0.93	0.21	0.58	0.69	0.66	−0.42	−0.28	0.65
ATC3	0.90	0.24	0.54	0.69	0.68	−0.47	−0.28	0.57
A1	0.24	0.89	0.13	0.30	0.24	−0.03	−0.12	0.27
A3	0.22	0.91	0.21	0.35	0.30	−0.11	−0.04	0.30
A4	0.23	0.86	0.17	0.33	0.26	−0.08	−0.07	0.29
C1	0.58	0.18	0.91	0.64	0.55	−0.41	−0.30	0.72
C2	0.57	0.24	0.94	0.57	0.53	−0.33	−0.24	0.58
C4	0.31	0.00	0.67	0.31	0.35	−0.23	−0.13	0.27
GA1	0.76	0.36	0.64	0.91	0.61	−0.46	−0.21	0.71
GA2	0.66	0.33	0.53	0.92	0.54	−0.42	−0.13	0.71
GA4	0.56	0.29	0.49	0.84	0.42	−0.31	−0.27	0.78
ITC1	0.75	0.27	0.54	0.59	0.95	−0.43	−0.29	0.59
ITC2	0.63	0.26	0.54	0.53	0.94	−0.51	−0.27	0.51
ITC3	0.67	0.30	0.53	0.56	0.93	−0.43	−0.24	0.51
M1	−0.42	−0.03	−0.32	−0.41	−0.37	0.88	0.21	−0.38
M3	−0.47	−0.11	−0.37	−0.40	−0.49	0.90	0.33	−0.40
R3	−0.27	−0.15	−0.26	−0.21	−0.24	0.29	0.87	−0.33
R4	−0.24	0.02	−0.20	−0.17	−0.23	0.23	0.82	−0.26
T2	0.70	0.32	0.55	0.80	0.62	−0.41	−0.28	0.86
T3	0.48	0.27	0.56	0.58	0.44	−0.41	−0.32	0.85
T4	0.53	0.23	0.59	0.68	0.39	−0.31	−0.32	0.89

References

AACSB: 2009, *Eligibility Procedures and Accreditation Standards for Business Accreditation* (The Association to Advance Collegiate Schools of Business, Tampa, FL), pp. 1–78.

Abdolmohammadi, M. J. and C. R. Baker: 2008, 'Moral Reasoning and Questionable Behavior', *The CPA Journal* **78**(11), 58–60.

Ajzen, I. and M. Fishbein: 1980, *Understanding Attitudes and Predicting Social Behavior* (Prentice-Hall, Englewood Cliffs, NJ).

Anderson, A. and D. Lavallee: 2008, 'Applying the Theories of Reasoned Action and Planned Behavior to Athlete Training Adherence Behavior', *Applied Psychology: An International Journal* **57**(2), 304–312.

Barkhi, R.: 2008, 'A Model of the Determinants of Purchasing from Virtual Stores', *Journal of Organizational Computing and Electronic Commerce* **18**(3), 117–196.

Bisping, T. O., H. Patron and K. Roskelly: 2008, 'Modeling Academic Dishonesty: The Role of Student Perceptions and Misconduct Type', *Journal of Economic Education* **39**(1), 4–21.

Bowers, W. J.: 1964, *Student Dishonesty and Its Control in College* (Bureau of Applied Social Research, Columbia, NY).

Carauna, A. and M. T. Ewing: 2000, 'The Effect of Anomie on Academic Dishonesty of University Students', *The International Journal of Educational Management* **14**(1), 23–29.

Chapman, K. J., R. Davis, D. Toy and L. Wright: 2004, 'Academic Integrity in the Business School Environment: I'll get by with a Little Help from My Friends', *Journal of Marketing Education* **26**(3), 236–249.

Chin, W. W.: 1998a, 'Issues and Opinion on Structural Equation Modeling', *Management Information Systems Quarterly* **22**(1), 7–16.

Chin, W. W. (ed.): 1998b, *The Partial Least Squares Approach for Structural Equation Modelling* (Lawrence Erlbaum Associates, Hillsdale, NJ).

Chin, W. W., B. L. Marcolin and P. R. Newsted: 2003, 'A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and an Electronic-Mail Emotion/Adoption Study', *Information Systems Research* **14**(2), 189–217.

Cohen, J.: 1988, *Statistical Power Analysis for the Behavioral Sciences* (Lawrence Erlbaum Associates, Hillsdale, NJ).

Conlin, M.: 2007, 'Cheating - Or Postmodern Learning', *Business Week*, Vol. 4034, p. 42.

Crown, D. F. and M. S. Spiller: 1998, 'Learning from the Literature on Collegiate Cheating: A Review of Empirical Research', *Journal of Business Ethics* **17**(6), 683–700.

Damast, A.: 2008, 'Fuqua Puts Scandal Behind It', *Business Week*, p. 5.

Davis, S. and H. Ludvigson: 1995, 'Additional Data on Academic Dishonesty and Proposal for Remediation', *Teaching of Psychology* **22**, 119–121.

Deci, E. and R. Ryan: 2000, 'The 'What' and 'How' of Goal Pursuits: Human Needs and the Self Determination of Behavior', *Psychological Inquiry* **11**, 227–268.

Eastman, J. K., K. L. Eastman and R. B. Drennan: 1996, 'The Ethics of Insurance Professionals: Comparison of Personal Versus Professional Ethics', *Journal of Business Ethics* **15**, 951–962.

Eastman, K. L., J. K. Eastman and R. Iyer: 2008, 'Academic Dishonesty: An Exploratory Study Examining Whether Insurance Students are Different from Other College Students', *Risk Management and Insurance Review* **11**(1), 209–226.

Etter, S., J. Cramer and S. Finn: 2006, 'Origins of Academic Dishonesty: Ethical Orientations and Personality Factors Associated with Attitudes About Cheating with Information Technology', *Journal of Research on Technology in Education* **39**(2), 133–155.

Fornell, C. and D. Larcker: 1981, 'Evaluating Structural Equation Models with Unobservable Variables and Measurement Error', *Journal of Marketing Research* **18**(1), 39–50.

Gefen, D. and D. Straub: 2005, 'A Practical Guide to Factorial Validity Using PLS-Graph: Tutorial and Annotated Example', *Communications of the Association for Information Systems* **16**, 91–109.

Gefen, D., D. W. Straub and M. C. Boudreau: 2000, 'Structural Equation Modeling and Regression: Guidelines for Research Practice', *Communications of the Association for Information Systems* **4**(7), 1–77.

Gulli, C., N. Kohler and M. Patriquin: 2007, 'The University Cheating Scandal', *Maclean's* **120**(5), 32–36.

Harding, T. S., M. J. Mayhew, C. J. Finelli and D. D. Carpenter: 2007, 'The Theory of Planned Behavior as a Model of Academic Dishonesty in Engineering and Humanities Undergraduates', *Ethics & Behavior* **17**(3), 255–279.

Harris, J.: 1989, 'Ethical Values and Decision Processes of Male and Female Business Students', *Journal of Education for Business* **64**(5), 234–238.

Kiriakidis, S. P.: 2008, 'Application of the Theory of Planned Behavior to Recidivism: The Role of Personal Norm in Predicting Behavioral Intentions of Re-Offending', *Journal of Applied Social Psychology* **38**(9), 2210–2221.

Kisamore, J. L., T. H. Stone and I. M. Jawahar: 2007, 'Academic Integrity: The Relationship Between Individual and Situational Factors on Misconduct Contemplations', *Journal of Business Ethics* **75**(4), 381–394.

Klien, H. A., N. M. Levenburg, M. McKendall and W. Mothersell: 2007, 'Cheating During the College Years: How Do Business Students Compare?', *Journal of Business Ethics* **72**, 197–206.

Knowledge: 2004, *College Cheating is Bad for Business* [Electronic Version]. (W.P. Carey School of Business), http://knowledge.wpcarey.asu.edu/article.cfm?articleid=1679.

Lanier, M.: 2006, 'Academic Integrity and Distance Learning', *Journal of Criminal Justice Education* **17**(2), 244–261.

Lavelle, L.: 2008, 'GMAT Cheating Controversy Grows', *Business Week*, p. 13.

Lawson, R.: 2004, 'Is Classroom Cheating Related to Business Students' Propensity to Cheat in the ''Real World?''', *Journal of Business Ethics* **49**(2), 189–199.

McCabe, D. L. and W. J. Bowers: 1994, 'Academic Dishonesty Among Males in College: A Thirty Year Perspective', *Journal of College Student Development* **35**, 5–10.

McCabe, D. L., K. D. Butterfield and L. K. Trevino: 2006, 'Academic Dishonesty in Graduate Business Programs: Prevalence, Causes, and Proposed Action', *Academy of Management Learning and Education* **5**(3), 294–305.

Miller, K.: 2005, *Communication Theories: Perspectives, Processes and Contexts* (McGraw-Hill, New York, NY).

Nonis, S. and C. Smith: 2001, 'Personal Value Profiles and Ethical Business Decisions', *Journal of Education for Business Ethics* **76**(5), 251–256.

Ogilby, S.: 1995, 'The Ethics of Academic Behavior: Will It Affect Professional Behavior?', *Journal of Education for Business* **71**(2), 92–97.

Ringle, C. M., S. Wende and S. Will: 2005, 'SmartPLS 2.0 (M3) Beta', Hamburg, http://www.smartpls.de.

Rokovski, C. and E. Levy: 2007, 'Academic Dishonesty: Perceptions of Business Students', *College Student Journal* **41**(2), 466–481.

Sheppard, B., H. Hartwick and P. Warshaw: 1988, 'The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research', *Journal of Consumer Research* **15**, 325–343.

Sims, R.: 1993, 'The Relationship Between Academic Dishonesty and Unethical Business Practices', *Journal of Education for Business* **68**(4), 207–211.

Swift, C., L. Denton and S. Nonis: 1998, 'Cheating Internet Style: Guarding Against Online Term Paper Mills', *Marketing Education Review* **8**(2), 19–27.

Tenenhause, M., V. Vinzi, Y. Chateline and C. Lauro: 2005, 'PLS Path Modeling', *Computational Statistics and Data Analysis* **48**(1), 159–205.

Thibodeau, P.: 2007, 'Cheating on IT Exams May Cast Doubt on Their Value', *Computerworld* **41**(18), 1–3.

Thompson, N.: 2000, 'Survey Finds 1 in 3 Workers Sees Abuses', *The Sun,* pp. C1–C3. 14 June.

Wetzels, M., G. Odekerken-Schröder and C. van Oppen: 2009, 'Using PLS Path Modeling for Assessing Hierarchical Construct Models: Guidelines and Empirical Illustration', *MIS Quarterly* **33**(1), 177–195.

Whitley, B.: 1998, 'Factors Associated with Cheating Among College Students: A Review', *Research in Higher Education* **39**, 235–274.

Wilson, B. A.: 2008, 'Predicting Intended Unethical Behavior of Business Students', *The Journal of Education for Business* **83**(4), 187–195.

Yeo, S.: 2007, 'First-Year University Science and Engineering Students' Understanding of Plagiarism', *Higher Education Research & Development* **26**(2), 199–216.

Yi, M. Y. and F. D. Davis: 2003, 'Developing and Validating an Observational Learning Model of Computer Software Training and Skill Acquisition', *Information Systems Research* **14**(2), 146–169.

College of Business Administration,
University of Nevada,
Reno, NV, U.S.A.
E-mail: MarkGSimkin@yahoo.com