

Origins of Academic Dishonesty: Ethical Orientations and Personality Factors Associated with Attitudes about Cheating with Information Technology

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Abstract

Growing perceptions that students exploit information technology to evade academic assignments prompted surveys of student attitudes about unethical uses of information technology (e.g., cutting and pasting excerpts from Web sites without attribution) at two institutions. Students at a private church-affiliated college rated cheating behaviors as more offensive than their counterparts at a regional campus of a major research university. However, ordinal rankings of academically dishonest behaviors at both institutions were surprisingly similar ($\rho = .90$). Further, students who rated such behaviors as being more serious, typically valued idealism, the ethical principle of doing no harm to others, and disapproved of high sensation-seeking activities involving alcohol, drugs, and sex. (Keywords: academic integrity, cheating, disinhibition, EPQ, ethics, information technology, sensation-seeking, technology acceptance model, TAM.)

INTRODUCTION

Many educational experts have long anticipated that computer technology would serve as a catalyst for changes in teacher practice (Bull, Knezek, Roblyer, Schrum, & Thompson, 2005; Dexter, Anderson, & Becker, 1999). Of equal importance more recently, however, has been its perceived effect on student practices that threaten academic integrity. For example, an ongoing survey conducted by the Center for Academic Integrity has noted a four-fold increase (10–40%) over the past five years in the number of college students who have used the Internet to construct papers based on unattributed text excerpts from online Web sites (McCabe, 2005). Further, a Pew study (Levin & Arafah, 2002) focusing on the discrepancy between teachers' and students' Internet competence, reported that Internet-savvy high school students, who were critical of their instructors' reticence in using the Web to enhance learning, also "admit[ted] to knowing students who plagiarized Internet resources or use[d] other online tools to cheat outright" (Levin & Arafah, 2002, p. 11). Although the public perception looms large that information technology may be having a serious negative effect on student learning, there is a dearth of empirical research devoted to studying this phenomenon.

Large multi-institution studies of students' attitudes toward cheating have established the critical role that situational factors, such as peer behavior and peer disapproval, have on student dispositions about cheating (Bowers, 1964; Leming, 1980; McCabe & Trevino, 1993, 1997), yet the newest environmental factor, the diffusion of information technology, has escaped systematic study. A cursory review of situational factors that facilitate acts of academic dishonesty suggest that information technology has lowered barriers to cheating. Previous research has shown that cheating occurs when opportunities are enhanced (Michaels & Miethe, 1989; Perry, Kane, Bernesser, & Spicker, 1990), surveillance can be avoided (Concoran & Rotter, 1987; Covey, Saladin, & Killen, 1989), chances for success have been improved (McCabe & Trevino, 1993), and risk of punishment is lowered (Leming, 1980). All are consistent with anecdotal evidence about how information technology has enabled students to engage in academically dishonest behaviors.

Previous Research on Student Cheating

Studies of academic dishonesty among college students date back 70 years or more. The two most recent reviews of empirical research on student cheating (Crown & Spiller, 1998; Whitley, 1998) were undertaken in the mid-1990s prior to the Internet explosion. Nevertheless, to the extent that a new technology is first adopted to perform conventional activities in an expeditious mode, these two reviews set useful ground rules for systematically studying the influence of information technology on student attitudes and behaviors. Both reviews sought to separate studies of academic dishonesty into just two domains—studies of situational factors, which we have already alluded to, and studies of individual factors, which identified sociological or psychological characteristics as correlates of cheating.

Over the 25-year period (1970–1995), which Crown and Spiller (1998) reviewed, the most notable development they reported about individual factors was that gender differences appeared to have attenuated over time as sex-role socialization of male and female students converged (Ward & Beck, 1990). However, Whitley and his colleagues in a follow-up meta-analysis (Whitley, Bichlmeier Nelson, & Jones, 1999) and then Whitley (2001) himself focused on gender differences alone, finding that women students demonstrated significantly more negative attitudes towards cheating than male students even though reported frequencies of cheating behavior for both sexes were nearly the same. Among other commonly studied demographic variables, cited by Crown and Spiller (1998), students with lower GPAs and business majors were found to cheat more (McCabe & Trevino, 1995), but studies of age and class standing generated inconsistent results. Among the most frequently tested personality variables, external locus of control and moral obligation were linked to cheating.

In his review, Whitley (1998) covered nearly the same 25-year period, but narrowed his sample to 107 psychological and sociological studies of student cheating, which were submitted to a rigorous meta-analysis. Whitley (1998) identified two factors—“perceiv[ing] that social norms allow cheating” and

Previous Research on Ethics Using Student Samples

Insight into college cheating has also benefited from new approaches used in general studies of ethical behavior in which the interface between individual factors and behaviors (or attitudes about them) are assumed to be mediated by ethical philosophies. Although developed more than 25 years ago, researchers continue to use Forsyth's (1980) Ethical Position Questionnaire (EPQ) to provide a measure of ethical ideology on two orthogonal scales labeled idealism and relativism. Forsyth conceived of these two concepts as the essential components of human ethical principles. Idealism reflected the notion that ethical human behavior requires one to "do no harm." Relativism reflected the notion that within any diverse group of individuals ethical norms may span a continuum from a set of absolute rules to completely ad hoc situational determinations.

Allmon, Page, and Roberts (2000) used the EPQ in a study of attitudes about classroom cheating that included age, gender, religiosity, country of origin, and the perception and judgment dimensions of the Myers Briggs Type Indicator (Myers & McCaulley, 1985) as predictors. While Allmon et al. (2000) were surprised to find that increasing age was overwhelmingly the best predictor of negative attitudes towards two forms of classroom cheating, "getting a classmate to write a term paper" or "do the work on a computer project," increasing age was also related to lower scores on Forsyth's (1980) relativism factor. The lack of any direct association between the EPQ and ratings of cheating behavior in this study, however, may be attributed to peculiarities in Allmon et al.'s (2000) application of Forsyth's (1980) fourfold typology as an analytical device. Davis, Andersen, and Curtis (2001) have, in fact, argued against implementing the typology, which creates four categories by variously grouping high and low scorers on the idealism and relativism scales, precisely because the loss of statistical information may artificially attenuate otherwise significant relationships.

In Davis et al.'s (2001) own study, which used confirmatory factor analysis to validate EPQ's psychometric properties, the idealism and relativism scales were found to be correlated, respectively, with similar constructs that measure empathy and dogmatism. The idealism scale, in particular, was shown to be a significant predictor of ethical judgments in five different scenarios. As Davis and his colleagues (2001, pp. 42-43) described the results, "Subjects high in idealism were morally opposed to actions potentially harmful to others." Relativism was found to play primarily a mediating role in the relationship between idealism and the formation of moral judgments.

As in the Davis et al. (2001) study, the EPQ has been used in a number of studies of ethical disposition outside the domain of college cheating but with college student samples nevertheless. McIntyre, Capen, Minton (1995) found that cognitive style dimensions of the Meyers-Briggs Type Indicator influenced the EPQ measures of idealism and relativism, with a direct link between relativism and the acceptance of ethically questionable decisions. Barnett, Bass, and Brown (1996) found that students who scored high in idealism and low in relativism were more inclined to view reporting a peer's cheating as ethical. Mullin-Marta et al. (2003) demonstrated that moral philosophies of business students in the United States and Egypt would diverge as indicated by differ-

ences in idealism and relativism scores. Finally, Wilson (2003) found a negative correlation between social dominance orientation and idealism, leading him to conclude that so-called “ruthless” individuals, when seeking their personal goals, can be indifferent to moral issues.

An Exploratory Study of Academically Dishonest Uses of Information Technology

Each of these studies, taken on its own, establishes interesting insights and possibilities about the origins of academic dishonesty. Unfortunately, though, none is so theoretically powerful or closely aligned with the domain of digital dishonesty among college students that it offers an ideal approach to the study of why computers are used to circumvent the learning process. Thus, for guidance in structuring this exploratory study, we turned to the *technology acceptance model* (Davis, 1989), a mainstay of information systems research. The essentially linear TAM model was devised to trace back to their origins the factors that lead to user acceptance of information technology. As unorthodox as it may seem, deciding to exploit a form of information technology to evade academic effort, even when unethical, differs little as a rational process from deciding to use a form of information technology to generally enhance learning or facilitate completion of academic assignments.

The core of Davis’s (1989) research strategy was to measure what he called the *perceived usefulness* and *perceived ease of use* of an information system in order to “explain and predict future user behavior. . . after a very brief period of interaction with the system” (p. 983). Davis argued that these two factors were instrumental in determining a user’s attitude toward a system and behavioral intention to use it, which ultimately led to actual system use. Davis’s TAM model provided one more critical component. The TAM model acknowledged that both perceived usefulness and perceived ease of use—a somewhat perverse and difficult to measure concept when unethical behaviors are contemplated—may be influenced by a set of antecedent variables (labeled *external variables* in the model).

These external variables opened the door to study the role of individual differences in technology acceptance (Finn & Korukonda, 2004). Thus, the TAM model was adopted to structure a study of the origins of academic dishonesty in which relationships between individual differences in ethical principles and personality were evaluated as correlates of attitudes about the unethical use of technology in an academic setting. One objective the model made eminently clear was the need for a systematic assessment of student attitudes about using technology unethically. On that topic we found a huge gap in the research literature (see, for example, Newstead, Franklyn-Stokes, and Armstead’s (1996) list of 21 conventional cheating behaviors), thereby obligating us to plan two studies—one to develop a list of questionable activities and a second to validate it.

In the first study, we conducted two focus groups to develop a list of technologically assisted academic behaviors of questionable propriety. Then, to ascertain attitudes about the items, we surveyed a sample of college students to establish their ethical evaluations of these activities in conjunction with their

own ethical principles as measured by the Ethics Position Questionnaire. The purpose of the second study was to test the generalizability of Study 1 results by administering the same questionnaire to a different sample of college students while adding depth to our understanding of the phenomenon by including a personality measure conceptually divorced from the participants' ethical principles. Our choice was Zuckerman's (1971, 1979) sensation-seeking scale. To our knowledge, the Zuckerman scale had not been previously used in ethics research. Yet two components of it, the disinhibition and the thrill and adventure seeking scales, had conceptual components that were closely related to four individual factors—deviant behavior (Blankenship & Whitley, 2000), social dominance (Wilson, 2003), lack of empathy (Davis, Andersen, Curtis, 2001), and anomie (Caruana, Rameseshan, & Ewing, 2000)—previously identified as correlates of unethical behavior. Furthermore, Zuckerman's sensation-seeking scales provided a conceptual link to five-factor models of personality (Zuckerman, 2004, 2002; Zuckerman et al., 1993), a widely accepted, comprehensive framework for personality research (John & Srivastava, 1999).

Accordingly, we jointly designed the two studies to investigate critical external and attitudinal factors described in the TAM model by pursuing the following research questions:

1. What are the current methods by which students put information technology to dishonest academic use?
2. How do students ethically evaluate these academically dishonest behaviors?
3. Are students' evaluations influenced by aspects of their ethical principles?
4. Are their ethical principles related to innate personality characteristics?

Questions 1 and 2 focused on the TAM model's *attitude toward using* component while Questions 3 and 4 focused on individual differences that would be defined as *external* factors in the model.

While Davis's (1989) TAM model specified *perceived usefulness* and *perceived ease of use* as intervening components in this reasoning process, there were several reasons to forego measurement of these variables in this exploratory study. First, Davis' model assumed these measures would reflect perceptions based on brief interactions with the technology. In a college, as opposed to an organizational setting, it could not be guaranteed that all or even most participants had been personally exposed. Second, those who had successfully engaged in unethical activities would be unlikely to share their perceptions truthfully. Third and most significant, even if valid measures could be obtained, their influence would be limited because variance in student perceptions would be highly moderated by similar campus situations. Perceived usefulness would be constrained by campus-wide honor codes and disciplinary procedures (McCabe & Trevino, 1993, 1997, 2002), and perceived ease of use would be influenced by available technology and the implementation of anti-cheating measures (Auer & Krupar, 2001; Campbell, Swift, & Denton, 2000; Covey, Saladin, & Killen, 1989; McLafferty, & Foust, 2004). Thus, measuring the influence of perceived utility

and ease of use of technology in a study of academic honesty appeared better suited to experimental designs.

METHODOLOGY

Sampling and Data Gathering

Students who participated in these two studies were enrolled at two small academic institutions—a church-affiliated liberal arts college and a regional two-year campus of a major research university. An institutional review board approved the successive studies, and we informed volunteer students of their rights to withdraw from the study at any time as they began their participation.

Study 1. One of the authors at the church-affiliated college assembled two focus groups, comprised of seven and eight volunteers, during the 2003 summer term. The focus group script was designed to investigate which types of information technology students were using to assist in their course-related work and which ones the students believed to be academically dishonest. The focus groups' questions were sequenced to neutrally probe personal experiences regarding the uses of information technology before raising the issue of whether these technologies might be used in an academically dishonest fashion. The student participants actively identified 24 questionable behaviors during the two focus group sessions.

After reviewing the focus group transcripts for clarification, we developed complete verbal descriptions of the 24 behaviors for use as the primary component of the Study 1 survey instrument. The instrument was administered to 237 students enrolled in an undergraduate computer applications course at the same institution. The students who completed the survey instrument were registered in 16 of 22 different sections of the course offered during the fall 2003 and spring 2004 semesters. Because the course was required for graduation, we expected the selected sections would approximate a representative sample of all students (about 1,250) currently enrolled. The demographic data collected from questionnaires showed that 70% of the respondents were female and that although 25 different majors were represented, nursing majors represented 29% of the sample. In both cases, these percentages reflected the undergraduate population of the college, of whom 74% were female and 25% were nursing majors.

Study 2. In the follow-up, Study 2, which occurred during the spring 2005 semester, only survey data were collected. Two-hundred two students out of approximately 500, who were enrolled at the two-year campus of the research university, participated. Students were recruited by asking their instructors, regardless of course type, to devote class time to administration of the survey during the final two weeks of the semester. The students who participated were, nevertheless, informed that their participation was voluntary.

Survey Instruments

The survey instruments for Study 1 and Study 2 provided quantitative data of three types: personal background, ratings of academically dishonest uses of information technology, and responses to the Ethical Position Questionnaire

(Forsyth, 1980). In addition, the questionnaire developed for Study 2 included two subscales of the Sensation-Seeking Scale (Zuckerman, 1979).

Background Variables. Students were asked to provide their class standing, their major, degree program, gender, year of birth, and estimates of how frequently they relied on the use of e-mail, the Internet, and software applications for coursework. For these three estimates, a 6-point scale was adapted from the ongoing Pew Internet and American Life surveys. The choices ranged from *several times a day* (6) to *every few weeks* (2) followed by *less often/never* (1). Because a year to 18 months elapsed between the two studies, participants' ages were calculated separately by subtracting year of birth from date of survey administration.

Ratings of Academically Dishonest Uses of Information Technology.

Twenty-four items, based on the focus group descriptions provided by students in Study 1, were rated on a 6-point scale that included the following options: (0) *Not Dishonest*, (1) *Not Serious*, (2) *Somewhat Serious*, (3) *Moderately Serious*, (4) *Quite Serious*, and (5) *Very Serious*. Previous studies on academic dishonesty (see Aggarwal, Bates, Davies, & Kahn, 2002; Turrens, Staik, Gilbert, Small, & Burling, 2001) have used a similar scale. However, based on evidence that students might be lax in their assessment of unethical acts involving information technology (Siegfried, 2004), we added options to designate the activity as *Not Dishonest* or respond *Don't Know*. The *Don't Know* response was needed as well because some items were technical in nature reflecting the specialized knowledge of some focus group participants.

Ethical Position Questionnaire. Forsyth's EPQ was comprised of two 10-item scales, which are evaluated using a 9-point Likert-like response set that ranged from (1) *Completely Disagree* to (9) *Completely Agree*. The idealism scale operationalized the concept that ethical behavior means doing no harm, and, in fact, four of the 10 items use the word "harm" and three more refer to another individual's "welfare" (we substituted the term "well-being" after student comments during a pre-test). The relativism scale operationalized the concept that there are no hard and fast ethical rules to be applied in every situation. This concept was explicitly stated in the first eight items of the scale with the last two focused on the morality of lying, permitting the construction of an alternate veracity subscale (Davis et al., 2001). Idealism and relativism resulted in scales ranging from nine to 90. The two-item veracity scale ranged from two to 18.

Sensation-Seeking Scale. The Sensation-Seeking Scale (Zuckerman, 1979) is comprised of 40 items for which respondents must choose one of two possible options. Each of the four subscales—thrill and adventure seeking, disinhibition, experience-seeking, and boredom susceptibility—is comprised of 10 of these two-option choices. For Study 2, we selected only the 20 items from the thrill and adventure seeking and the disinhibition scales as being personality dimensions similar to other individual factors associated with academic dishonesty in previous research.

Typical of the thrill and adventure seeking subscale is a choice of options, such as *I prefer the surface of the water to the depths* versus *I would like to go scuba diving*. Typical of the disinhibition subscale is a choice, such as *Heavy drinking*

usually ruins a party because some people get loud and boisterous versus *Keeping the drinks full is the key to a good party*. Selection of an option characteristic of the concept being measured (the second item in both these examples) counts one point. Thus, a participant's score on each subscale may range from 0 to 10.

Analysis. Although both samples represented college students at rural institutions in the same region of the country, we chose to analyze them separately because one of the chief purposes of Study 2 was to provide validation for results reported in Study 1. Also, events occurring in the fast-changing world of information technology during the 12 to 18 month period that elapsed between administrations of the two surveys could have influenced student attitudes and practices. Thus, each data set was analyzed individually with comparisons made in regard to summary statistics. Concerning background variables, summary statistics for gender, birth year, and application software use were significantly different between the two samples, but means for age, Internet use, and e-mail use were similar (see Table 1).

Table 1: Comparison of Study 1 and Study 2 Summary Statistics for Demographic Variables

Demographic Variable	Survey 1 Sample	Survey 2 Sample	Statistical Test of Difference
Gender Proportion	70% female	49% female	$X^2(df=1) = 19.03, p < .001$
Mean Birth Year	1977.7	1980.0	$F(1,434) = 7.84, p = .005$
Mean Age	26.3	25.2	$F(1,434) = 1.63, n.s.$
Internet Use	3.16	2.93	$F(1,435) = 2.59, n.s.$
E-mail Use	4.07	4.27	$F(1,436) = 1.90, n.s.$
Software Applications Use	3.50	2.80	$F(1,436) = 28.09, p < .001$

RESULTS

Ratings of Academic Dishonesty

The survey for Study 1 was completed by 237 students, who were enrolled in a required information technology course during the last weeks of the fall 2003 semester or first weeks of the spring 2004 semester. They rated the 24 descriptions of academically dishonest behavior, including four non-technical examples, from a high of 4.65 for submitting a paper bought online to a low of 1.80 for using a software program to increase the length of a paper. (Table 2 lists the

activities in rank order by mean score; non-technical items are italicized; and keywords written in all capital letters designate short titles for unethical behaviors listed in Tables 4 and 6.) The four highest scoring items were activities that involved submitting as one's own an assignment completed by someone else. Their mean ratings placed them in the highest possible range, from (4) *quite serious* to (5) *very serious*, as forms of academic dishonesty. The next seven items, which fell between (3) *moderately serious* and (4) *quite serious* were more difficult to categorize. Three of the behaviors involved possibly unauthorized assistance on an exam. Two others involved questionable delay tactics, falsely claiming to have attached an assignment to an e-mail to gain extra time to complete the work and a non-technical analogue, giving a false excuse to delay an exam or the deadline for a paper.

Except for the least serious behavior, reformatting a paper to increase its length, the means for all 13 remaining items were rated (2) *somewhat serious* to (3) *moderately serious*. This set of behaviors also matches at the top an information technology activity, copying one sentence from an online source without acknowledging it, with its non-technical analogue, copying two lines from a printed reference with no citation. Similarly, near the bottom of this group, reading an online summary or review of a book is paired with reading a condensed version of a novel.

We gathered survey data for Study 2 approximately 16 months after Study 1 from 202 students enrolled in a broad sample of courses at a two-year campus of a major research university at the end of the spring 2005 semester. Table 2 lists their ratings and rankings for the same 24 behaviors and provides a statistical test of differences between the means generated by the two samples. Dividing the Study 2 ratings into one-point segments, a number of differences occur. First, only three rather than four items fall in the highest range between (4) *quite serious* to (5) *very serious* while at the other end of the spectrum, five behaviors, instead of just one, fall in the range between (1) *not serious* and (2) *somewhat serious*. The four technical items in this latter group are seemingly characterized by their functional status as software applications that automate the organization of verbal data. Consistent with this overall trend of participants in Study 2 generally rating the seriousness of all 24 behaviors less critically, nine of the 24 paired means in Table 2 exhibit statistically significant differences. In each case, the participants in Study 1 rated the infractions as being more serious. Study 1 was conducted 16 months earlier at a church-affiliated college.

On second glance, however, there is also a striking similarity between the two sets of scores. If one disregards the absolute values of the ratings and considers the relative rankings instead, then the two sets of responses are phenomenally similar. That is, the Pearson correlation coefficient for the two sets of means is a remarkable .96 ($df = 22, p < .001$). The more conservative Spearman ρ (for ordinal level data) is .90. Thus, it may be instructive to consider the two types of differences in survey results. For six items, the mean ratings for the behaviors are significantly different, but the rankings are nearly identical. This is true for buying a paper, copying and pasting an essay from the Internet, copying a

Table 2: Comparison of Mean Ratings in Surveys 1 and 2 of Unethical Behaviors Using Information Technology

Unethical Behaviors Using Information Technology	Survey 1		Survey 2		F-ratio	d.f.	sig.
	Ratings	Ranks	Ratings	Ranks			
BUYING a PAPER ONLINE and submitting it as your own.	4.65	1	4.33	1	12.62	1, 432	.001
COPYING AND pasting an essay from the Internet and SUBMITTING it AS your OWN	4.61	2	4.24	2	15.88	1, 434	.001
COPYING FILE on disk containing a complete assignment FROM A FRIEND and submitting the work with your name.	4.33	3	4.10	3	5.38	1, 435	.021
COPYING a friend's file from a disk, replacing his name with yours and submitting as your own WORK if the assigned material is something that YOU already KNOW WELL.	4.06	4	3.84	4	3.56	1, 424	.060
CLAIMING to have attached an assignment to an e-mail when you did not in order to have EXTRA TIME to complete the work.	3.66	5	3.60	5	0.24	1, 427	.624
Carrying on an Instant Message CONVERSATION while TAKING a computerized EXAM	3.59	6	2.97	12	16.20	1, 416	.001
RECEIVING and using an E-MAIL from a friend ABOUT the questions on an EXAM he just completed.	3.55	7	3.28	8	3.89	1, 429	.049
DELAYING taking an examination or turning in a paper USING a FALSE EX-CUSE.	3.50	8	3.30	7	2.44	1, 427	.119
SENDING an E-MAIL to a friend to let them know ABOUT the questions on an EXAM you just completed.	3.49	9	3.24	9	2.96	1, 430	.086
LISTING WEB SITES that you DID NOT USE to complete an assignment in the bibliography of an assignment.	3.40	10	3.21	10	1.93	1, 423	.165
<i>COPYING two lines of text directly FROM a PRINTED REFERENCE source without acknowledging the source.</i>	3.32	11	3.49	6	1.50	1, 425	.221
COPYING and pasting one SENTENCE from an online source without acknowl- edging the SOURCE.	2.90	12	2.93	13	0.03	1, 431	.856

Unethical Behaviors Using Information Technology (Contd.)	Survey 1		Survey 2		F-ratio	d.f.	sig.
	Ratings	Ranks	Ratings	Ranks			
	2.84	13	3.03	11			
Using a series of paragraphs that have been copied and pasted from the Internet to create a paper with ACKNOWLEDGMENT to the sites in your bibliography.	2.78	14	2.53	14	2.08	1, 420	.150
USING Internet CHAT rooms TO ASK HOMEWORK related questions on assignments prescribed as individual assignments.	2.77	15	2.37	16	7.32	1, 420	.007
Writing a SUMMARY based ON an ONLINE ABSTRACT of a journal article rather than reading the article itself.	2.50	16	2.43	15	0.30	1, 424	.586
Using a Web site or SOFTWARE that creates a BIBLIOGRAPHY for you based on information you enter.	2.50	17	1.73	23	20.40	1, 400	.001
USING a software PROGRAM available FOR free on the Internet TO COMPLETE your assignment (for example, using a Web site to translate text written in English to Spanish).	2.47	18	1.70	24	23.20	1, 403	.001
Having a FRIEND E-MAIL you a copy of his completed assignment just to give you a FRAMEWORK to base your work on.	2.46	19	2.06	19	6.60	1, 422	.011
READING an online SUMMARY OR REVIEW of a book rather than reading the assigned full-length version.	2.26	20	2.14	17	0.76	1, 432	.383
READING a CONDENSED version of a NOVEL rather than the assigned full-length version.	2.23	21	1.99	20	3.18	1, 426	.075
Changing a few lines of a paper you have written for one class and SUBMITTING this new paper FOR a DIFFERENT CLASS.	2.07	22	2.14	18	0.21	1, 419	.648
Having a SOFTWARE PROGRAM select the important points of a paper you have written and organizing them into a SUMMARY.	2.04	23	1.80	22	2.56	1, 397	.110
Using character spacing, line spacing, and margin sizing options in a SOFTWARE program to INCREASE the LENGTH of a paper.	1.80	24	1.91	21	0.68	1, 426	.408

Note: Capitalized words are used as abbreviated descriptors in succeeding tables. Italics denote absence of technological terminology.

Table 3: Study 1: Intercorrelations and Reliabilities of Ethics Measures

Predictors	Univariate Statistics			Correlation Coefficients		
	Mean	Std. Dev.	N	Idealism	Relativism	Veracity
Idealism	72.66	12.55	228	(.86)		
Relativism	60.00	14.21	210	.30***	(.86)	
Veracity	10.72	4.24	225	-.02	.70***	(.78)

Notes: Coefficients of reliability are presented on the diagonal axis.

Table 4: Study 1: Correlations of Unethical Behaviors and Ethics Measures

Unethical Behaviors Using Information Technology	Correlation Coefficients		
	Idealism	Relativism	Veracity
192 ≤ n ≤ 227			
BUYING PAPER ONLINE	.20***		
COPY AND SUBMIT AS OWN	.24***		
COPY FILE FROM A FRIEND	.26***		-.12*
COPY WORK YOU KNOW WELL	.33***		-.18**
CLAIM EXTRA TIME	.31***		-.13*
IM CONVERSATION TAKING EXAM	.20***		
RECEIVING E-MAIL ABOUT EXAM	.28***		
DELAY USING FALSE EXCUSE	.34***		-.11*
SENDING E-MAIL ABOUT EXAM	.23***		
LIST WEB SITES DID NOT USE	.37***		-.12*
COPY FROM PRINTED REFERENCE	.30***		-.14*
COPY SENTENCE NO SOURCE	.22***		
CHANGING FEW WORDS NO CITE	.26***		-.13*
VARIETY OF INTERNET SITES			-.17*
USING CHAT TO ASK HOMEWORK	.21***		
SUMMARY ON ONLINE ABSTRACT	.35***		-.16**
SOFTWARE BIBLIOGRAPHY	.13*		
USING PROGRAM TO COMPLETE	.21***		
FRIEND E-MAIL FRAMEWORK	.27***		-.13*
READ SUMMARY OR REVIEW	.32***		-.12*
READ CONDENSED NOVEL	.27***	.13*	
SUBMIT FOR DIFFERENT CLASS	.17**		
SOFTWARE PROGRAM SUMMARY	.13*		
SOFTWARE INCREASE LENGTH	.35***	.17*	

* $p < .05$, ** $p < .01$, *** $p < .001$

STUDY 2 RESULTS

Study 2 was completed by 202 students on the two-year remote campus of a major research university during the last two weeks of April, 2005. Table 5 provides the means, standard deviations, and intercorrelations between the idealism, relativism, veracity, disinhibition, and thrill and adventure seeking scales with their reliability coefficients on the diagonal axis. As before, the correlation between relativism and veracity is very strong while the correlation between idealism and veracity is near zero. In addition, the correlation between idealism and relativism is significant but much weaker for these students. Table 5 also provides our first look at the relationship between idealism and the two sensation-seeking scales. Not surprisingly, they are both negative, but disinhibition is more strongly correlated with idealism than thrill and adventure seeking is. Further, relativism is correlated only with disinhibition.

Table 5: Study 2: Intercorrelations and Reliabilities of Ethics and Personality Measures

Predictors	Univariate Statistics			Correlation Coefficients				
	Mean	Std. Dev.	N	Idealism	Relativism	Veracity	Disinhibition	TAS
Idealism	67.93	15.01	194	(.88)				
Relativism	58.29	15.25	194	.12*	(.86)			
Veracity	10.86	4.36	201	-.02	.74***	(.68)		
Disinhibition	4.03	2.53	178	-.35***	.24***	.35***	(.72)	
Thrill and Adventure Seeking	5.93	2.72	196	-.13*	.05	.11	.17**	(.76)

Note: Coefficients of reliability are presented on diagonal axis.

The most striking aspect of the Study 2 results, however, is that the disinhibition scale, used as an independent variable for the first time in this study, appears to be as effective a predictor of the academically dishonest behavior ratings as the EPQ idealism scale (see Table 6). The disinhibition scale correlates significantly with 16 of 24 behaviors. The idealism scale correlates significantly with only one more, 17 of 24 behaviors. Interesting as well are the number of inverse correlations between veracity and the ratings of ethically suspect behaviors. They are significant in nine out of 24 cases.

DISCUSSION

Before drawing inferences from the specific results of these two studies, it is important to note that overall personality factors and ethical principles were similarly associated with both traditional forms of cheating (denoted in italics) and the technologically assisted ones that were the focus of these two studies.

Table 6: Study 2: Correlations of Unethical Behaviors with Ethics and Personality Measures

Unethical Behaviors Using Information Technology	Correlation Coefficients				
	Idealism	Relativism	Veracity	Disinhibition	Thrill and Adventure
(177 ≤ n ≤ 194)					
BUYING PAPER ONLINE	.18**				
COPY AND SUBMIT AS OWN	.24***		-.13*	-.25***	
COPY FILE FROM A FRIEND	.21**		-.17**	-.30***	
COPY WORK YOU KNOW WELL	.21**		-.14*	-.25***	
CLAIM EXTRA TIME	.14*		-.17**	-.15*	
IM CONVERSATION TAKING EXAM	.16*	-.17**	-.22***	-.22**	
RECEIVING E-MAIL ABOUT EXAM	.29***			-.28***	
DELAY USING FALSE EXCUSE	.19**		-.14*	-.24***	
SENDING E-MAIL ABOUT EXAM	.20**			-.20**	
LIST WEB SITES DID NOT USE	.20**			-.20**	
COPY FROM PRINTED REFERECE	.20**			-.15*	
COPY SENTENCE NO SOURCE	.20**			-.24***	
CHANGING FEW WORDS NO CITE	.14*				
VARIETY OFIN TERNETSIT ES					
USING CHAT TO ASK HOMEWORK				-.13*	
SUMMARY ON ONLINE ABSTRACT	.13*	-.20**	-.20**	-.25***	
SOFTWARE BIBLIOGRAPHY					
USING PROGRAM TO COMPLETE			-.16*		
FRIEND E-MAIL FRAMEWORK				-.16*	-.14*
READ SUMMARY OR REVIEW	.19**	-.16*	-.21**	-.32***	-.14*
READ CONDENSED NOVEL	.13*			-.20**	
SUBMIT FOR DIFFERENT CLASS	.17**				-.20**
SOFTWARE PROGRAM SUMMARY					
SOFTWARE INCREASE LENGTH					

* $p < .05$, ** $p < .01$, *** $p < .001$

tively associated with serious reservations about ethically suspect behaviors three or more times as frequently as its parent relativism scale.

The results of Study 2 revealed a second interesting dichotomy between two measures from a single psychological instrument, which merits further discussion. When we selected the disinhibition and the thrill and adventure seeking subscales of the Zuckerman Sensation-Seeking Scale as possible negative correlates of ethical behavior ratings, we chose them because we thought they were the two most promising components of a comprehensive instrument. Conceptually, the disinhibition subscale met the requirements for a measure of deviant behavior (Whitley, 1998), but the thrill and adventure seeking subscale appeared similarly appropriate because it focused on a preference for high risk behaviors. The first indication of the disparity between the two subscales was revealed by the intercorrelations between the independent variables (see Table 5), disinhibition was more strongly correlated with idealism ($r = -.35$) and veracity ($r = .35$) than thrill and adventure seeking was with either ($-.13 < r < .11$).

A review of the items that comprise these four scales, however, suggested that differences that exist at the operational level are actually more compelling than the conceptual rationale for adopting both the thrill and adventure seeking and the disinhibition scales as possible correlates. Because the items comprising the idealism scale were weighted with statements about doing no harm to others, it is not surprising that a person scoring high on idealism would find it incompatible to “seek pleasure around the world with the ‘jet set,’” “like to get high (drinking liquor or smoking marijuana),” “like to date members of the opposite sex who are physically exciting” or be in the company of “swingers.” The implied risks in these behaviors are not only to self, but also to others. By contrast, this conscious disregard for others is almost totally absent from the 10 items that comprise the thrill and adventure seeking scale. Nine of them deal with individualized physically demanding sports—mountain climbing, water skiing, surf boarding, flying, scuba diving, parachute jumping, high diving, fast skiing, and long-distance sailing—“things that are a little frightening” as the tenth item indicates, but do not necessarily require that others take the same risks. In this regard, the thrill and adventure seeking scale could be as much a measure of athletic self-confidence as sensation-seeking. A major difference between the thrill and adventure seeking and the disinhibition scales is how narrowly the risk factor is operationalized in the former. Given this distinction, it is not surprising that the thrill and adventure seeking scale bore scant relation to ethical evaluations. Zuckerman (2004) has acknowledged in a discussion of the development of his five-factor model of personality that sensation-seeking as a characteristic has both a bright and a dark side. Some components align with extraversion, others with neuroticism. Bringing sensation-seeking to bear on ethical behavior may have inadvertently exposed that division.

Limitations. A discussion of the meaning of results makes one well aware of the limitations of this study. Foremost is the difficulty of generalizing from the two student samples used in the successive surveys. Each survey constitutes a case study at a particular institution. Another major limitation of this study is that it has gathered evidence of student attitudes and only inferred as the

TAM model specifies that behavior intentions and actual use would follow. The importance of the relationships the data analysis revealed for devising ways to thwart the threat to academic integrity occasioned by technological innovations is at best hypothetical. Finally, it may be that the briefly described unethical behaviors devised for this study were devoid of sufficient complexity to create a need to weigh situational factors before evaluating a behavior. Accordingly, the short descriptive items used may not have provided a valid test of whether relativism is a salient factor in students' ethical responses.

Future Research. The implications for future research are many and diverse. While we were struck during our review of the literature that little effort had been expended to develop an inventory of academically dishonest behaviors afforded by access to information technology, we are now struck by the phenomenological nature of the list which we compiled. Using focus groups to develop such a list was an appropriate methodology (Morgan, 1997), but for the purposes of analysis, a more structured, however limited, list might have been meaningfully submitted to factor analysis to avoid separate multivariate computations for each item on the list. Some of these behaviors may be old forms of academic dishonesty that have been updated with information technology, new forms of academic dishonesty afforded only because of technological innovations, and high profile infractions in which the perpetrator claims authorship for a lengthy finished work completed by someone else. In reviewing offenses that students rated as highly serious, it struck us that the amount of effort expended—in these academically dishonest behaviors, the effort expended seemed little more than inserting one's name as an author—was a critical factor in forming ethical judgments, and that should be the object of further study. An ethical imperative emerged, because of a perception of unfair treatment of others who truly worked hard to complete an academic assignment. This mode of thinking may be exploited to encourage compliance with honor code systems, including the reporting of infractions.

Another major objective of our research was to make a case for using well-known and well-investigated psychological instruments to make faster headway in understanding the origins of academic dishonesty. In reading the extensive reviews of research on student cheating (Crown & Spiller, 1998; Whitley, 1998), one sees that many research results come to a dead end because the individual factors selected for study are incommensurate with those used in other studies. Use of the EPQ was an exception in the ethics literature starting in the 1990s, and since we wanted to investigate even more fundamental antecedents to ethical attitudes, we used Zuckerman's Sensation-Seeking Scale as a surrogate for longer instruments developed to document the five-factor model of personality (John & Srivastava, 1999). As testimony to the efficacy of our strategy, we found Davis et al.'s (1999) psychometric analysis of the EPQ invaluable in pursuing our own analysis. One implication, we think, of this study is that the EPQ, now more than 25 years old, needs a serious theoretical and operational update. More importantly, we think the results obtained with the disinhibition subscale point the way towards a more profound investigation of personality factors as predictors of students' ethical attitudes and behavior.

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References

- Aggarwal, R., Bates, I., Davies, J. G., & Khan, I. (2002). A study of academic dishonesty among students at two pharmacy schools. *The Pharmaceutical Journal*, *269*, 529–533.
- Allmon, D. E., Page, D., & Roberts, R. (2000). Determinants of perception of cheating: Ethical orientation, personality, and demographics. *Journal of Business Ethics*, *23*, 411–422.
- Auer, N., & Krupar, E. (2001). Mouse click plagiarism: The role of technology in plagiarism and the librarian's role in combating it. *Library Trends*, *49*, 415–435.
- Barnett, T., Bass, K., & Brown, G. (1996). Religiosity, ethical ideology, and intentions to report a peer's wrongdoing. *Journal of Business Ethics*, *15*, 1161–1174.
- Blankenship, K. L., & Whitley, B. E. (2000). Relation of general deviance to academic dishonesty. *Ethics & Behavior*, *10*, 1–12.
- Bowers, W. J. (1964). *Student dishonesty and its control in college*. New York: Columbia University.
- Brown, V. J., & Howell, M. E. (2001). The efficacy of policy statements on plagiarism: Do they change students' views? *Research in Higher Education*, *42*, 103–118.

- Buckley, M., Wiese, D., & Harvey, M. (1998). An investigation into the dimensions of unethical behavior. *Journal of Education for Business*, 73, 284–290.
- Bull, G., Knezek, G., Roblyer, M. D., Schrum, L., & Thompson, A. (2005). A proactive approach to a research agenda for educational technology. *Journal of Research on Technology in Education*, 37, 217–220.
- Campbell, C. R., Swift, C. O., & Denton, L. (2000). Cheating goes hi-tech: Online term paper mills. *Journal of Management Education*, 24(6), 726–739.
- Caruana, A., Ramaseshan, R., & Ewing, M. T. (2000). The effect of anomie on academic dishonesty among university students. *The International Journal of Educational Management*, 14(1), 23–30.
- Concoran, K. J., & Rotter, J. B. (1987). Morality-Conscience Guilt Scale as a predictor of ethical behavior in a cheating situation among college females. *Journal of General Psychology*, 116, 311–316.
- Covey, M. K., Saladin, S., & Killen, P. J. (1989). Self-monitoring, surveillance, and incentive effects on cheating. *Journal of Social Psychology*, 129, 673–679.
- Crown, D. E., & Spiller, M. S. (1998). Learning from the literature on collegiate cheating: A review of empirical research. *Journal of Business Ethics*, 17, 683–700.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- Davis, M. A., Andersen, M. G., & Curtis, M. B. (2001). Measuring ethical ideology in business ethics: A critical analysis of the Ethics Position Questionnaire. *Journal of Business Ethics*, 32, 35–53.
- Dexter, S. L., Anderson, R. E., & Becker, H. J. (1999). Teachers' views of computers as catalysts for changes in their teaching practice. *Journal of Research on Computing in Education*, 31(3) 221–239.
- Finn, S., & Korukonda, A. R. (2004). Avoiding computers: Does personality play a role? In E. P. Bucy & J. E. Newhagen (Eds.), *Media access: Social and psychological dimensions of new technology use* (pp. 73-90). Mahwah, NJ: Erlbaum.
- Forsyth, D. (1980). A taxonomy of ethical ideologies. *Journal of Personality and Social Psychology*, 39, 175–184.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102–138). New York: Guilford Press.
- Leming, J. S. (1980). Cheating behavior, subject variables, and components of the internal-external scale under high and low risk conditions. *Journal of Educational Research*, 74, 83–87.
- Levin, D., & Arafeh, S. (2002). The digital disconnect: The widening gap between Internet-savvy students and their schools. Washington, DC: Pew Internet & American Life Project. Retrieved April, 28, 2006, from http://www.pewinternet.org/pdfs/PIP_Schools_Internet_Report.pdf
- McCabe, D. L. (2005, June). The Center for Academic Integrity Assessment Project Surveys. Retrieved April 29, 2006, from http://www.academicintegrity.org/cai_research.asp

- McCabe, D. L., & Trevino, L. K. (1993). Honor codes and other contextual influences. *Journal of Higher Education*, 64, 522–538.
- McCabe, D. L., & Trevino, L. K. (1995). Cheating among business students: A challenge for business leaders and educators. *Journal of Management Education*, 19, 205–218.
- McCabe, D. L., & Trevino, L. K. (1997). Individual and contextual influences on academic dishonesty: A multicampus investigation. *Research in Higher Education*, 38, 379–396.
- McCabe, D. L., & Trevino, L. K. (2002). Honesty and honor codes. *Academe*, 88, 1, 37–41.
- McCabe, D. L., Trevino, L. K., & Butterfield, K. D. (2001). Dishonesty in academic environments. *The Journal of Higher Education*, 72, 29–45.
- McIntyre, R. P., Capen, M. M., & Minton, A. P. (1995). Exploring the psychological foundations of ethical positions in marketing. *Psychology & Marketing*, 12(6), 569–582.
- McLafferty, C. L., & Foust, K. M. (2004). Electronic plagiarism as a college instructor's nightmare—Prevention and detection. *Journal of Education for Business*, 79(3), 186–190.
- Michaels, J. W., & Miethe, T. D. (1989). Applying theories of deviance to academic cheating. *Social Science Quarterly*, 70, 870–885.
- Morgan, D. (1997). *Focus groups as qualitative research* (2nd ed.). Thousand Oaks, CA: Sage.
- Mullin-Marta, J. K., Attia, A., Singhapakdi, A., & Atteya, N. (2003). A comparison of ethical perceptions and moral philosophies of American and Egyptian business students. *Teaching Business Ethics*, 7, 1–20.
- Myers, I. B., & McCaulley, M. H. (1985). *Manual: A guide to the development and use of the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologists Press.
- Newstead, S. E., Franklyn-Stokes, A., & Armstead, P. (1996). Individual differences in student cheating. *Journal of Educational Psychology*, 88, 229–241.
- Perry, A. R., Kane, K. M., Bernesser, K. J., & Spicker, P. T. (1990). Type-A behavior, competitive achievement-striving, and cheating among college students. *Psychological Reports*, 66, 459–465.
- Roig, M. (1997). Can undergraduate students determine whether text has been plagiarized? *The Psychological Record*, 47, 113–122.
- Roig, M., & DeTommaso, L. (1995). Are college cheating and plagiarism related to academic procrastination? *Psychological Reports*, 77, 691–698.
- Ross, K. A. (2005). Academic dishonesty and the Internet. *Communications of the ACM*, 48(10), 29–31.
- Salter, S. B., Guffey, D. M., & McMillan, J. J. (2001). Truth, consequences, and culture: A comparative examination of cheating and attitudes about cheating among U.S. and U.K. students. *Journal of Business Ethics*, 31, 37–50.
- Siegfried, R. M. (2004). Student attitudes on software piracy and related issues of computer ethics. *Ethics and Information Technology*, 6(4), 215–222.
- Smyth, M. L., & Davis, J. R. (2003). An examination of student cheating in the two-year college. *Community College Review*, 31(1), 17–32.

