

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

Stephanie Etter
Mt. Aloysius College

Jackie J. Cramer
University of Pittsburgh, Titusville

Seth Finn
Robert Morris University

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

“hold[ing] favorable attitudes towards cheating” (p. 23)—which exhibited large effects in a minimum of five studies. As perceptions and attitudes, they both fall in line as individual factors. Similarly, when it came to factors that exhibited moderate effects in relation to cheating, individual factors alone—age (younger), course task performance (worse), and deviant behavior (more)—were demonstrated in sufficient studies to make a convincing case. Whitley’s results serve then, as do Crown and Spiller’s (1998) observations, as a prelude to recent studies in which individual factors are more thoroughly studied than situational ones.

In fact, in reviewing the empirical literature on college cheating over the last 10 years, research on situational factors has been narrowly focused on the efficacy of instituting honor codes to reduce academic dishonesty (Brown & Howell, 2001; McCabe & Trevino, 1997, 2002; McCabe, Trevino, & Butterfield, 2001; Zabihollah, Elmore, & Szendi, 2001) along with an assortment of related topics, such as social acceptability (Smyth & Davis, 2003; Strike & Moss, 1997), probability of being caught (Buckley, Wiese, & Harvey, 1998), and cross-cultural differences (Salter, Guffey, & McMillan, 2001). As yet, however, studies describing the situational opportunities for cheating afforded by digital technology (Auer & Krupar, 2001; Campbell, Swift, & Denton, 2000; Ross, 2005, Szabo, 2004) have not attempted to enumerate the full range of unethical activities that students are aware of or their perceptions about these behaviors. This deficiency is all the more important because studies of traditional forms of academic cheating suggest that students are generally confused about what constitutes plagiarism and other questionable short-cuts to completing academic assignments (Allmon, Page, & Roberts, 2000; Roig, 1997; Roig & DeTommaso, 1995). Other concerned academics have challenged the notion that technological remedies can address new modes of cheating (McLafferty & Foust, 2004; Townley & Parsell, 2004).

Faced with a moving situational target, then, it is understandable that much of the recent research is oriented toward the interface between acceptable academic behavior and individual factors, primarily psychological measures. For example, the study by Buckley, Wiese, & Harvey (1998), previously cited for its single situational factor—probability of being caught—measured five individual factors of which aggression/hostility and male gender were linked to unethical behavior. Whitley (1998) too apparently followed up on one of his reported moderate effects—deviant behavior. Blankenship and Whitley (2000) reported that minor forms of deviance, such as engaging in risky driving behaviors and being an unreliable friend or worker, were linked to cheating on exams or making false excuses to avoid taking exams. Wryobeck and Whitley (1999) examined peer perceptions of cheaters and their accomplices, finding that students with a high orientation towards learning would recommend a more severe punishment while students with a high orientation towards grades were more likely to emulate the cheater’s and accomplice’s actions. Finally, Caruana, Ramaseshan, and Ewing (2000) reported a relationship between the Srole measure of anomie (a five-item scale denoting hopelessness and a personal lack of norms) and cheating among a sample of Australian business school students.

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

friend's assignment and submitting it as one's own, receiving and using an e-mail from a friend about questions on an exam just completed, using Internet chat rooms to ask homework related questions, and having a friend e-mail a copy of a completed assignment to use as a framework for one's own work. In these cases, it would seem that the judgments of the Study 1 sample are more critical, based on some general group difference. For the three remaining items, though, the differences in means are reflected in differences in rankings as well. These behaviors include carrying on an instant message conversation while taking a computerized exam, using a Web site or software to format a bibliography, and using free Internet software programs to complete an assignment. The differences in means between Study 1 and Study 2 for these three high-tech activities ranged from .62 to .77 as opposed to .27 to .40 for the other six, thereby effecting a six-place change in each of their rankings as well. While information technology appears to have only facilitated an exchange or transfer of information for the first six items, for the remaining three the behaviors would be impossible to perform without the diffusion of software innovations. Regardless, the high overall correlation between Study 1 and Study 2 ratings suggests that the behaviors listed were reliably evaluated by the two student samples and provides an acceptable framework within which to examine the origins of these ratings.

PREDICTORS OF STUDY 1 RATINGS

As a measure of individual differences, participants in Study 1 were asked to complete the Ethical Position Questionnaire (Forsyth, 1980). On the basis of Davis et al.'s (2001) psychometric analysis, we have generated three scales from the 20-item instrument, representing idealism, relativism, and veracity (as a two-item subscale of relativism). As presented in Table 3, the means for these three scales were 72.7 for idealism, 60.0 for relativism, and 10.72 for veracity, with all three exhibiting acceptable levels of reliability. In addition, they exhibit an interesting set of intercorrelations. Not surprisingly, veracity and relativism are highly correlated ($r = .70$, $df = 208$, $p < .001$) inasmuch as the veracity scale is derived from the ninth and tenth items of the relativism scale. However, it is interesting to note, that while relativism and idealism are also significantly correlated ($r = .30$, $df = 206$, $p < .001$), the correlation between veracity and idealism is virtually nil ($r = -.02$, $df = 219$, *n.s.*), an indication of its psychometric independence.

The efficacy of adding the veracity scale to the analysis is borne out by the set of bivariate correlations (see Table 4) between the ratings of the 24 ethically suspect behaviors and the scores generated by the EPQ. While there is no contesting the primacy of the idealism measure as a significant factor in determining the orientation of the participating students towards these 24 behaviors, the two-item veracity scale scores were significantly correlated with almost half the behavior ratings while the traditional 10-item relativism scale exhibited relationships with only two of the 24 ethically suspect behaviors. Even then the sign was unexpectedly positive, meaning that the more relativistic the students' ethical perspective, the more likely they were to rate these behaviors as serious infractions.

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			
CHANGING a FEW WORDS of a paragraph copied and pasted from the Internet so that the material does NOT have to be CITED.	2.84	13	3.03	11	1.56	1, 424	.213
Using a series of paragraphs that have been copied and pasted from a VARIETY OF INTERNET SITES 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 OF INTERNET SITES					
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					

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

The same norms and individual differences apply to both. Looking back at the results from both surveys, then, there is considerable evidence that both idealism and disinhibition are consistent correlates of attitudes about students using information technology dishonestly in an academic setting. By contrast, the number of correlations exhibited by the relativism and the thrill and adventure seeking scales were surprisingly few. In fact, the simple two-item veracity scale, proposed by Davis et al. (2001), proved to be a more frequent correlate of ratings of unethical uses of information technology than its parent relativism scale.

As in every successful exploratory study, we have been able to replicate the findings of previous research, such as confirming in Study 1 the relationship between idealism and descriptions of unethical behavior. We also extended the boundaries of understanding by establishing new correlates in Study 2, such as the relationship between the personality measure disinhibition and the same set of unethical behaviors used in Study 1. Nevertheless, the results of the two surveys have also generated new questions, which we intend to address before moving on to limitations of the study and implications for future research.

The first of these questions is how to explain mean differences in the ratings of unethical uses of information technology between the Survey 1 and Survey 2. A number of demographic factors offer possible answers. We know that the institutions where the surveys were administered, though not geographically distant, may draw very different student bodies, because one is private and church-affiliated while the other is a state-supported, small rural campus of a major research university. The higher ratings of seriousness occurred at the church-affiliated school. Further, previous research on cheating behaviors (Whitley et al., 1999) has indicated that female students hold more critical attitudes than male students do, and in this case, the church-affiliated school sample was heavily weighted with women. Finally, there is the tantalizing possibility that the 16-month on average period that transpired between administration of the surveys in Study 1 and Study 2 also had a mediating effect on how students viewed some behaviors. This may be especially true as the three exhibiting the greatest change in rankings were all based on software innovations (instant messaging, bibliographic software, and free software downloaded from the Web) which would be difficult to characterize as old forms of questionable behavior using new technologies. Demographic data revealed a higher level of software use for students participating in Study 2 as well.

The second question that looms large in these results is why the idealism scale of the EPQ is consistently associated with ratings of academically dishonest behavior while the relativism scale is not. A careful review of the recent literature, however, suggests that such a result is the norm rather than the exception. Despite Forsyth's theoretical foundations for both measures, the idealism scale alone is the one that dominates results in practice (Davis et al., 1999) when researchers ignore Forsyth's four-category typology. In fact, the weak results of the relativism scale served as motivation for acting on Davis et al.'s (1999) suggestion to parse out the last two items of the EPQ to create the veracity scale. Those results speak for themselves. The veracity scale, which reflects individual attitudes towards bending the truth to accommodate circumstances, was nega-

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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Contributors

Stephanie Etter is an assistant professor of information technology and director of the Title III Project at Mount Aloysius College in Cresson, Pennsylvania. Her current research interests include computer and information security and pedagogical issues, such as distance education, incorporating technology across the curriculum, and academic dishonesty. (Address: Stephanie Etter, DSc, Department of Information Technology, Main 230, Mt. Aloysius College, Cresson, PA 16630; SETter@mtaloy.edu.)

Jackie Cramer is an instructor in accounting at the University of Pittsburgh at Titusville. Her doctoral research focused on how ethical styles and risk-taking behaviors influence student perceptions of academically dishonest uses of information technology. (Address: Jackie J. Cramer, DSc, Accounting and Business Information Systems, Broadhurst Science Center 108, University of Pittsburgh at Titusville, Titusville, PA 16354; jcramer@pitt.edu.)

Seth Finn is a professor of communication at Robert Morris University. His research interests include evaluating alumni perceptions of their participation in college-wide laptop programs and the relationship between unpredictable verbal information and physiological indicators of arousal. (Address: Seth Finn, PhD, School of Communications and Information Systems, 6001 University Boulevard, Robert Morris University, Moon Township, PA 15108; finn@rmu.edu.)

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