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Intelligence Vs. Wisdom: The Love of Money, Machiavellianism, and Unethical Behavior across College Major and Gender

Thomas Li-Ping Tang
Yuh-Jia Chen

ABSTRACT. This research investigates the efficacy of business ethics intervention, tests a theoretical model that the love of money is directly or indirectly related to propensity to engage in unethical behavior (PUB), and treats college major (business vs. psychology) and gender (male vs. female) as moderators in multi-group analyses. Results suggested that business students who received business ethics intervention significantly changed their conceptions of unethical behavior and reduced their propensity to engage in theft; while psychology students without intervention had no such changes. Therefore, ethics training had some impacts on business students' learning and education (intelligence). For our theoretical model, results of the whole sample (N = 298) revealed that Machiavellianism (measured at Time 1) was a mediator of the relationship between the love of money (measured at Time 1) and unethical behavior (measured at Time 2) (the Love of Money → Machiavellianism → Unethical Behavior). Further, this mediating effect existed for business students (n = 198) but not for psychology students (n = 100), for male students (n = 165) but not for female students (n = 133), and for male business students (n = 128) but not for female business students (n = 70). Moreover, when examined alone, the direct effect (the Love of Money → Unethical Behavior) existed for business students but not for psychology students. We concluded that a short business ethics intervention may have no impact on the issue of virtue (wisdom).

KEY WORDS: intelligence, wisdom, love of money, Machiavellianism, unethical behavior, business ethics education, college major (business vs. psychology), gender, moderator

In this article, we examine the efficacy of business ethics intervention, develop and test a theoretical

Thomas Li-Ping Tang (Ph.D., Case Western Reserve University) is a Full Professor of Management in the Department of Management and Marketing, Jennings A. Jones College of Business at Middle Tennessee State University (MTSU). He has taught Industrial and Organizational Psychology at National Taiwan University and at MTSU. Professor Tang teaches, has taught, MBA/EMBA courses in China (Hong Kong and Shanghai), France (Nantes), and Spain (Valencia). He serves, has served, on 6 editorial review boards and reviews papers for 28 journals. His research interests focus upon compensation, the Love of Money, business ethics, pay satisfaction, and cross-cultural issues. He has published more than 100 journal articles in top behavior sciences and management journals (e.g., Journal of Applied Psychology, Personnel Psychology, Human Relations, Journal of Management, Management Research, Management and Organization Review, Journal of Organizational Behavior, and Journal of Business Ethics.) *and presented more than 190 papers in professional conferences and invited seminars. He was the winner of two Outstanding Research Awards (1991,1999) and Distinguished International Service Award (1999) at Middle Tennessee State University. He also received the Best Reviewer Awards from the International Management Division of the Academy of Management in Seattle, WA (2003) and in Philadelphia, PA (2007).*

Yuh-Jia Chen (Ph.D., Columbia University) is an Associate Professor of Business Statistics in the Rinker of School of Business at Palm Beach Atlantic University, West Palm Beach, FL 33416. He has taught statistics at Middle Tennessee State University and Teachers College, Columbia University. His research interests lie in money attitude, choice and decision-making, risk-taking behavior, and compensation. His publications have appeared in behavior sciences and management journals (e.g., Journal of Behavioral Decision Making, Journal of Business and Psychology, and Journal of Business Ethics).

model of unethical behavior, and treat college major (business vs. psychology) and gender (male vs. female) as moderators. We develop our theory from a small set of research ideas presented below.

Management education is a big business in the U.S.A. and around the world (Pfeffer and Fong, 2002) and is more commercialized than other forms of education (*Economist*, 2004). Due to an ever-expanding list of scandals and corruptions (e.g., Enron, Arthur Anderson LLP, Tyco International, Adelphia Communications, and WorldCom), media pundits speak of the lack of business ethics and standards.

Bok (1993) asserted that the lucrative rewards of Wall Street and the high compensation paid to top executives act as a magnet attracting many people to the business field. In 1992–1993, with 89,390 degrees awarded, business administration and management was the most popular undergraduate college major. Many students enter business schools due to their dispositional values, i.e., ''the value of being financially well off'' (McCabe et al., 2006, p. 295), or the love of money (Cunningham et al., 2004; Tang et al., 2006, 2007) and maintain these values over time (Staw, Bell, Clausen, 1986). Years later, business students become business managers and executives.

Ethics education in the business curriculum started as early as the 1970s. Since many executives (former Enron Corporation Chief Financial Officer Andrew Fastow and former Chief Executive Officer Jeffrey Skilling) received their training at the best business schools (Merritt, 2002a), some researchers and executives assert that it is not lack of ''intelligence'' or ''brains'', but lack of ''wisdom'' (Feiner, 2004, p. 85) or ''virtue'' (Giacalone, 2004, p. 417) that caused these scandals. Researchers and executives have serious concerns over management education (Friga et al., 2003; Payne, 2006): What is the efficacy of business ethics training in business schools? This study explores this issue. Further, researchers and executives have tried to identify the causes of these unethical behaviors, scandals, or corruptions.

According to some researchers, one of the real root causes of this ethics crisis is ''the bottom-line-mentality'' (Sims, 1992, p. 508) or ''maximizing shareholder value'' (Kochan, 2002, p. 139). Profit-based mechanisms create pressure (to maximize profits) and opportunity (to earn perverse bonuses) and may have some serious flaws (Honeycutt et al., 2001). Enron's executives were provided with substantial bonuses in the form of stock options. Given the size of the bonus payments, the incentives for unethical behavior are, in hindsight, disturbingly obvious. ''On a more sinister note, since managers typically control the financial reports, there is an incentive to *deceptively manipulate accounting procedures* solely to increase their bonus'' (*The Daily Record*, 2003, p. 1, emphasis added). This leads to several interrelated issues.

First, in America, money-making was the dominant ethic, in contrast to the aristocratic ethic. Hard work and money dominate the minds of most, if not all. De Tocqueville traced love of wealth to the root of all that Americans do. But greed is not good (Sloan, 2002). Recent research supports the notion that ''the love of money is a root of all kinds of evil'' (http://www.biblegateway.com, 1 Timothy, 6:10, New International Version), but money (income) is not (Tang and Chiu, 2003; Tang et al., 2007; Vitell et al., 2006). Further, the adage that '''power corrupts and absolute power corrupts absolutely' once again has proven true'' (Kochan, 2002, p. 139). One puzzling omission is that very little research has studied people's attitude toward money, the love of money, in particular, as related to corruption or unethical behavior. We assert that the love of money is positively related to the propensity to engage in unethical behavior (PUB).

Second, following the idea that executives deceptively manipulate accounting procedures solely to increase their bonus (*The Daily Record*, 2003), it is plausible that high love-of-money executives may have a manipulative and win-at-all-cost disposition (i.e., Machiavellianism, Christie and Geis, 1970) that leads to unethical behaviors. Since ''the love of money is a root of all kinds of evil'' (1 Timothy, 6:10, Tang and Chiu, 2003), we strongly posit that the love of money is a much more basic, fundamental, and deeply rooted value or attitude than Machiavellianism for most people. Therefore, Machiavellianism serves as a mediator of the relationship between the love of money and the PUB. More specifically, in this study, we explore the direct relationship (the Love of Money $\rightarrow$ Unethical Behavior), the indirect relationship (the Love of Money $\rightarrow$ Machiavellianism $\rightarrow$ Unethical Behavior), and other relationships (e.g., Income $\rightarrow$ Unethical Behavior) simultaneously in one theoretical model.

Moreover, we examine the effect of a short ethics intervention on business students' PUB (the experimental group): measured at Time 1 (before the intervention) and Time 2 (after the intervention). We also include non-business (psychology) students without ethics intervention as the control group. Third, with the short ethics intervention, this research attempts to investigate the issue of intelligence versus wisdom (Feiner, 2004, p. 85; Giacalone, 2004, p. 417) by examining the relationship between the love of money and Machiavellianism measured at Time 1 and unethical behavioral intention measured at Time 2 (after business students' ethics intervention). Business students have a much higher level of self-reported cheating than non-business students because business students "see cheating as more acceptable or necessary in order to get ahead" (McCabe et al., 2006, p. 300). After ethics training, female students change and improve ethical behavior, but male students do not (Ritter, 2006). On the basis of these suggestions, we attempt to examine the possible differences between business and non-business students and between male and female students using the same model. Little research, if any, has examined all these issues simultaneously in the literature. This study fills the void. We hope that this research is useful for theory and practice and may make relevant and responsible contributions to the literature (Shapiro et al., 2007).

The present study. We propose a theoretical model (Figure 1) with four constructs: (1) a deeply rooted value or attitude (the love of money), (2) a manipulative disposition (Machiavellianism), (3) self-reported income, and (4) behavioral intention (PUB). We treat college major (business vs. psychology) and gender (male vs. female) as moderators in multi-group analyses using structural equation modeling (SEM). We used behavioral intention, the propensity to engage in unethical behavior, or the PUB interchangeably in this study.

We examine the following research questions: Can ethics intervention change the PUB from Time 1 to Time 2, and are the love of money and Machiavellianism (both measured at Time 1) related to unethical behavior (measured at Time 2)? We assert: The former deals with learning and education (intelligence), whereas the latter is related to virtue (wisdom). Is it a matter of intelligence (education), or wisdom (virtue)? Further, does college major or gender make a difference using this model? We review our literature briefly and provide the logical interconnectedness (Sutton and Staw, 1995) of our theory below.

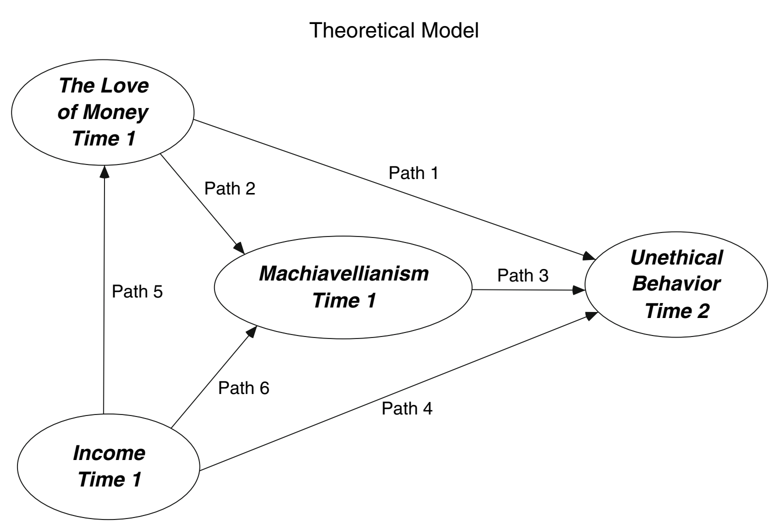

Figure 1 Theoretical model.

Theory and hypotheses

The efficacy of business ethics training

The ''omnipotent view of management'' suggests that managers are directly responsible for an organization's success and failure, whereas the ''symbolic view'' suggests that an organization's success and failure are due to forces beyond managers' control (Robbins and Coulter, 2005, p. 50). This may be applicable to ethics education. We attempt to explore this issue.

On one hand, there is considerable interests in the teaching of ethics (e.g., Evans et al., 2006; Giacalone and Thompson, 2006; McCabe et al., 2006). On the other hand, educators and students are facing an uphill battle related to the ''legitimacy crisis'' of teaching business ethics due to students' negative attitudes toward ethics and other behavioral courses (Rynes et al., 2003, p. 269). Little evidence supports the notion that MBA students who take ethics courses will make ethical decisions (Evans et al., 2006; Weber, 1990). Although teaching ethics is important and worthwhile and will cause some students to move in the right and ethical direction (e.g., Gautschi and Jones, 1998; Giacalone et al., 2003; Hiltebeitel and Jones, 1992; Jurkiewicz et al., 2004), teaching students the rules and guidelines of a particular profession to achieve a certification or license (e.g., accounting) will not ensure students' ethical actions (Luoma, 1989). A course on ethics produces either no significant effect (e.g., Davis and Welton, 1991; Peppas and Diskin, 2000), limited effect on students' attitudes toward ethical decisions (e.g., Duizend and McCann, 1998), or limited effect for females only (not for males) (Ritter, 2006). Thus, the efficacy of a course on ethics is questionable at best.

In this study, we attempt to investigate the effect of a short business ethics intervention on students' PUB. We select students in the Principles of Management course that is the first course offered to juniors in the Department of Management and Marketing. The textbook for the principles course has only one chapter on social responsibility and managerial ethics and has the coverage of ethics in several other later chapters. It should be pointed out that the course or the text has very limited coverage for the topic on ethics and is ''not'' a full one-semester course exclusively on ethics.

Second, we do not claim that this is a strong ethics course or formal ethics training. We attempt to investigate the effect of this relatively short ethics intervention, i.e., the coverage of one chapter (in 1 week time), on students' possible changes of PUB. Compared to other studies mentioned above, the intervention covered in this study is much more limited than others examined in the literature (e.g., Davis and Welton, 1991; Duizend and McCann, 1998; Peppas and Diskin, 2000; Ritter, 2006).

Third, most students in the course are undergraduate students who work part time and do not have real responsibilities in making ethical decisions. Due to the lack of real work experiences, we expect that one chapter on ethics in this course may have very limited impacts, if any, on these students' PUB. Due to mixed results examined above, we investigate this issue on an exploratory basis and tentatively predict that ethics intervention creates positive impacts for business students.

Our theoretical model

According to the theory of reasoned action (TRA, Ajzen and Fishbein, 1980), or the expanded theory of planned behavior (TPB, Ajzen, 1991; Armitage and Conner, 2001), behavior is determined by intention, which is a function of attitude toward the behavior and subjective norms. Attitude toward the behavior deals with the individual's global positive or negative evaluations of performing a particular behavior. Deeply grounded in the theory of reasoned action and the person–situation interactionist model of ethical decision making (Treviño, 1986), researchers have examined characteristics of the individual, e.g., cognitive and moral development (Treviño and Youngblood, 1990), economic, political, and religious value orientation (Hegarty and Sims, 1978), ego strength (Stead et al., 1990), ethical philosophy, locus of control (Jones and Kavanagh, 1996), Machiavellianism (Hegarty and Sims, 1978), nationality, and gender (Stead et al., 1990) as well as organizational characteristics (Sims and Keon, 1999, 2000). Based on our aforementioned research ideas, this study specifically selects and investigates the relationship of the love of money, Machiavellianism, and unethical behavior. We turn to the love of money first.

The love of money

The importance of money

In 1971, only 49.9% of freshmen said the important reason in deciding to go to college is "to make more money." In 1993, that number increased to 75.1% (*The American Freshman*, 1994). In 1978, men ranked pay fifth and women ranked pay seventh in importance among 10 job preferences (Jurgensen, 1978). In 1990, among 11 work goals, pay was ranked second in importance in Belgium, the U.K., and the U.S.A. and first in Germany (Harpaz, 1990). The lack of money is the number-one cause of dissatisfaction among university students (Bryan, 2004). Many people are attracted to the business field due to the lucrative rewards and high compensation (Bok, 1993). Management professors (Gomez-Mejia and Balkin, 1992) and mental health workers (Tang et al., 2000) change jobs to maximize their pay. Money has become very important to people in the U.S.A. and around the world. The importance of money leads to the importance of studying people's attitudes toward money. We present the love-of-money construct below.

The love of money

Researchers in different fields have examined money attitudes, e.g., the psychology of money (e.g., Furnham and Argyle, 1998; Mahoney, 1991; Opsahl and Dunnette, 1966; Tang, 1992; Thierry, 1992; Vohs et al., 2006; Wernimont and Fitzpatrick, 1972), compensation and pay satisfaction (Rynes and Gerhart, 2000; Tang et al., 2006), voluntary turnover (Tang et al., 2000), consumer behavior (Vitell et al., 2006), and subjective well-being (Diener and Seligman, 2004; Srivastava et al., 2001; Tang, 2007). We select the love of money scale (LOM) for this study because LOM (a subset of the money ethic scale, MES) is considered one of the most well-developed and systematically used measures of money attitude in the literature (e.g., Lea and Webley, 2006; Mitchell and Mickel, 1999).

The love of money (LOM) is defined as (1) one's attitudes toward money with affective, behavioral, and cognitive components; (2) the meaning one attributes to money, (3) one's desire for, value of, expectation about, or aspiration for money; (4) not one's need, greed, or materialism; (5) a multi-dimensional individual difference variable; and (6) a second-order latent construct with several first-order latent sub-constructs (Law et al., 1998). Researchers have investigated measurement invariance of the love of money scale across cultures (Luna-Arocas and Tang, 2004; Tang et al., 2005, 2006, 2007); college majors, and genders (Du and Tang, 2005). The measurement and functional equivalence, reliability, and validity of the love of money scale (LOM) and the money ethic scale (MES) have been well established, cited, and published in Chinese, English, French, Italian, Spanish, Romanian, Russian, and many other languages (Luna-Arocas and Tang, 2004) and cited in books (e.g., Furnham and Argyle, 1998; Milkovich and Newman, 2008; Rynes and Gerhart, 2000). We argue that the love of money (one's desire and aspiration for money) is more strongly related to unethical behavior than materialism (one's pursuit of the good life through consumption or possessions). In this study, we select LOM with three sub-constructs: I want to be *rich* (affective), money is a *motivator* (behavioral), and money is *important* (cognitive) (e.g., Tang and Chiu, 2003; Tang et al., 2006, 2007). For example, if money is a motivator (Harpaz, 1990), one may do whatever it takes to make money. Regarding improving performance in organizations, "no other incentive or motivational technique comes even close to money" (Locke, Feren, McCaleb, Shaw, and Denny, 1980, p. 381). Money can also motivate people to behave unethically: In response to a bonus plan that paid people for finding insect parts in a food processing plant, "innovative Green Giant employees brought insect parts from home to add to the peas just before they removed them and collected the bonus" (Milkovich and Newman, 2008, p. xiii).

Unethical behavior

It is difficult to observe and measure people's unethical behaviors directly. However, many are more willing to provide accurate information answering an anonymous paper-and-pencil survey or computer-administered questionnaire than in a face-to-face interview (Richman et al., 1999). The incumbent's self-report and the coworker's peer-report converged significantly on counterproductive work behavior toward other persons and work stressors (Fox et al., 2007). We believe that behavioral intentions and self-reports are adequate surrogate measures of actual unethical behavior (Fox et al., 2007; Jones and Kavanagh, 1996). We acknowledge the significant differences between the two and investigate only behavioral intentions in this study.

Researchers have examined theft (Greenberg, 2002), corruption (Anand et al., 2004), misbehavior (e.g., Ivancevich et al., 2005; Vardi and Weitz, 2004), deviant behavior (Litzky et al., 2006; Robinson and Bennett, 1995), counterproductive behavior (Cohen-Charash and Spector, 2001), whistle blowing (Dozier and Miceli, 1985; Sims and Keenan, 1998), and unethical behavior (e.g., Treviño and Youngblood, 1990). Ivancevich et al. (2005) examined 23 misbehaviors at work and some of those may have nothing to do with the love of money (e.g., sexual harassment). Among many measures, we select the propensity to engage in unethical behavior scale (PUB) with five sub-constructs: *resource abuse, not whistle blowing, theft, corruption*, and *deception* (e.g., Chen and Tang, 2006; Tang et al., 2007) because these constructs are related to publicized scandals and white-collar crime. We turn to our direct path next.

The path of the love of money to unethical behavior

Research suggests that in a nationwide survey, American adult consumers who desire to be rich (factor rich of the love of money scale) are likely to condone questionable consumer activities (Vitell et al., 2006). The love of money is directly (the Love of Money → Unethical Behavior) and also indirectly related to unethical behavior through pay dissatisfaction (the Love of Money → Pay Satisfaction → Unethical Behavior) among professionals in Hong Kong (Tang and Chiu, 2003). Among full-time employees in 30 samples across six continents around the world (N = 6,081), the love of money is positively related to unethical behavior for people in the high (income > \$20,000, n = 1,756) and median (\$5,000–\$20,000, n = 2,371) GDP groups but not for the low (income < \$5,000, n = 1,954) GDP group (Tang et al., 2007). The final *etic* (culture-free) model showed that the love of money is positively related to unethical behavior. On the basis of these empirical findings, we assert that the love of money is positively related to unethical behavior for some people, in general (Path 1).

Hypothesis 1 The love of money is positively related to unethical behavior.

Machiavellianism

Niccolo Machiavelli (1469–1527) wrote *The Prince* (Machiavelli, 1513/1966) advising others on how to acquire and maintain power. Christie and Geis (1970) were the first psychologists to study Machiavellianism. Machiavellianism is based entirely on expediency, manipulation, exploitation, and deviousness and is devoid of the traditional virtues of trust, honor, and decency. The word "ethical" and "unethical" are absent from the definition of Machiavellianism. Barring intent, Machiavellian-type behavior can be viewed as "amoral" (Fraedrich et al., 1989, p. 688). High Machs (people with high Machiavellianism) employ aggressive and devious methods to achieve goals without regard for feelings, rights, and needs of other people (Wilson et al., 1996). High Machs manipulate more, win more, persuade others more (Christie and Geis, 1970; Schepers, 2003), have higher performance (Aziz et al., 2002), higher job strain, lower job satisfaction (Gemmill and Heisler, 1972), steal more, aggress more against a remorseful confederate (Harrell, 1980), and are rejected more as social partners for most relationships (Wilson et al., 1996) than low Machs.

High Machs use impression management tactics rather indiscriminately and are often charming and attractive in short-term social interactions (Bolino and Turnley, 2003). High Machs are associated with antisocial behavior and concerned about extrinsic goal of financial success specifically. Young managers are more Machiavellian than older ones (Hunt and Chonko, 1984; Ross and Robertson, 2003). We turn to the indirect path (the Love of Money → Machiavellianism → Unethical Behavior) and focus on the first part below.

The path of the love of money to Machiavellianism

The love of money reflects an individual's fundamental desire to be rich, motivation to work hard for money, and importance placed on money. Machiavellianism has been examined as one of the individual characteristic variables related to unethical behavior (e.g., Hegarty and Sims, 1978). Machiavellianism is a behavioral disposition that may incite one to employ aggressive, manipulative, exploitive, and devious tactics and strategies in order to achieve one's goals. We assert that the love of money (LOM) is a more fundamental value than Machiavellianism and that LOM may induce people to adopt the win-at-all-cost strategy. The reverse may be true but less likely. The directional causality of the two cannot be determined in a short time period in the literature.

Research suggests that among several constructs, Factor Rich (I want to be rich) is the strongest factor for the love of money scale, LOM (Tang and Chiu, 2003; Tang et al., 2006, 2007). Since, "people who want to be *rich* fall into temptation and a trap and into many foolish and harmful desires that plunge men into ruin and destruction" (1 Timothy, 6:9), we argue: High-love-of-money individuals with "venerated materialistic values" (Giacalone, 2004, p. 417) who want to get "rich" easily and quickly (Factor Rich) may select manipulative strategies and engage in unethical behavior. We predict a significant path from the love of money to Machiavellianism (Path 2).

Hypothesis 2 The love of money is positively related to Machiavellianism.

The path of Machiavellianism to unethical behavior

High Machs are less ethical, accept more unethical behaviors, endorse a wide range of subversive responses to the demand for accountability, and overwhelmingly defect more frequently (do not reciprocate trust) when it is to their advantage to do so in a bargaining game than low Machs (Gunnthorsdottir et al., 2002). MBA students' unethical behavior (i.e., pay kickbacks) is higher when they are rewarded for unethical behavior and are under increased competition than when they are not (Hegarty and Sims, 1978). The interaction between Machiavellianism and situational factors has an impact on willingness to lie (Ross and Robertson, 2000). We predict: Machiavellianism is positively related to unethical behavior (Path 3), in general.

Hypothesis 3 Machiavellianism is positively related to unethical behavior.

Hypotheses 2 and 3 suggest that Machiavellianism mediates the relationship between the love of money and unethical behavior (the Love of Money → Machiavellianism → Unethical Behavior). We now turn to income in our model.

Income

Path of income to unethical behavior

The love of money is related to unethical behavior, but income is not (Tang and Chiu, 2003). Therefore, we predict that income is not related to unethical behavior. We do not propose a null hypothesis for Path 4.

Path of income to the love of money

This path reflects one's subjective evaluation of one's objective income. For full-time employees in developed countries, the relationship between income and the love of money is *negative* among highly paid professionals in Hong Kong (Tang and Chiu, 2003), *non-significant* among adequately paid Spanish professors (Tang et al., 2005) and males and Caucasians in the U.S.A. (Tang et al., 2006), and *positive* among underpaid American professors (Tang et al., 2005) and underpaid females and African-Americans in the U.S.A. (Tang et al., 2006). Thus, the culture at organizational and national levels and one's income may have some impact on one's love of money.

Part-time employees differ from full-time employees regarding income, the love of money, job satisfaction, and quality of life (Tang, 2007). University students usually have part-time jobs and change jobs frequently. Part-time jobs in most cases offer lower pay than full-time jobs. With frequent job changes, these part-time workers are paid adequately at the local market level (Tang et al., 2002). For these part-time people, the relationship between income and the love of money is non-significant (see Tang et al., 2005, 2006). We suspect that, in this study, university students' income has little meaning in our model. On the basis of the above rationale, we predict that Path 5 is not significant.

Path of income to Machiavellianism

The income-to-Machiavellianism relationship is non-significant (e.g., Christie and Geis, 1970; Hunt and Chonko, 1984) or positive (Aziz, 2004). Results are mixed. Following our arguments that the love of money is related to unethical behavior and Machiavellianism, but that money (income) is not, we propose that income is not related to Machiavellianism (Path 6). We turn to the moderators of our model.

Moderator

College major (business vs. psychology)

We speculate the following differences between business and psychology students. First, due to existing dispositional values (Staw et al., 1986), the economic return to an individual of a college education (Bok, 1993), and the attraction–selection–attrition (ASA) process, individuals with a strong love-of-money orientation may enter the business major (Cunningham et al., 2004; McCabe et al., 2006), whereas those with a strong helping orientation may enter the psychology major. Thus, college major is a reflection of students' self-selection and personal values and attitudes.

Second, most people look to the social context and culture to determine what is ethically right and wrong, obey authority figures, and do what is rewarded (Litzky et al., 2006; Treviño and Brown, 2004). The ethics gap found between undergraduate business students and non-business students is discouraging to researchers. Some wonder whether the business curriculum has contributed to it or failed to decrease it (Richards et al., 2002). Moreover, the top business schools not only fail to improve the moral character of students but actually weaken it (Schneider and Prasso, 2002). After taking a single semester of introductory economics, for example, students show a significant decline in honesty and increase in self-interest (Frank et al., 1993). Business students see cheating as more acceptable or necessary in order to get ahead than non-business students (McCabe et al., 2006). It is plausible that people's social environments may shape their attitudes, values, and behavior patterns differently for students in different majors (Litzky et al., 2006; Sims and Keon, 1999, 2000; Treviño and Brown, 2004).

Third, Machiavellianism may be amoral (Fraedrich et al., 1989) and may lead to either ethical or unethical behavior. We assert: The path from Machiavellianism to unethical behavior may depend on several other variables (e.g., college major and gender). We predict that business students with a love-of-money orientation may adopt a "win-at-all-costs" psyche (Giacalone, 2004, p. 418), use Machiavellianism as a manipulation tactic, and engage in unethical behavior (Litzky et al., 2006), whereas psychology students in the helping profession may be "emotionally incapable of hurting others" (Wilson et al., 1996, p. 288), use Machiavellianism as an impression management tactic (Bolino and Turnley, 2003), and may *not* engage in unethical behavior (Path 3). In summary, college major is a moderator. We propose Hypothesis 3A as follows.

Hypothesis 3A Machiavellianism is related to unethical behavior for business students but not for psychology students.

Gender

Males' Machiavellianism scores tend to be higher than (Christie and Geis, 1970), similar to (Webster and Harmon, 2002), or lower than those of their female counterparts (Rayburn and Rayburn, 1996). Results are mixed. However, male students have higher concerns about career advancement and are at least twice as likely to engage in unfair practices as their female counterparts (Betz et al., 1989; Malinowski and Berger, 1996). Female managers are more ethical than their male counterparts regarding unsafe products (Hoffman, 1998), accepting favors for special treatment (Deshpande, 1997), or ethical reasoning (e.g., Beu et al., 2003). Ethics training may have limited effect for female students but no effect for male students (Ritter, 2006). For both males and females, ethical beliefs increase with age (Allmon et al., 2000). Since females tend to hold higher moral standards and are more ethical than males, it is plausible that females' high scores on Machiavellianism may reflect their impression management tactics (cf. Bolino and Turnley, 2003). Since more male students major in business than in psychology and given our Hypothesis 3A, we predict: Machiavellianism is related to unethical behavior for males but not for females (Path 3). In summary, gender is a moderator in our model.

Hypothesis 3B Machiavellianism is related to unethical behavior for males but not for females.

Methods

Background for the research site

We selected business students in the Principles of Management course, offered to juniors by the Department of Management and Marketing in the College of Business (accredited by AACSB-International), as our experimental group (with ethics intervention). This is the first course in this department and a prerequisite for other courses. The topics of business ethics have been covered briefly in many different chapters of the course. Between Time 1 and Time 2, business students studied a specific chapter on social responsibility and managerial ethics and completed a quiz covering four chapters including the ethics chapter. It should be noted that at this institution, the College of Business offers undergraduate degrees and MBA degrees but does not offer Executive MBA programs.

Please recall that a single economics course may cause students to show a significant decline in honesty and increase in self-interest (Frank et al., 1993) and Principles of Economics is a required course for freshmen in the College of Business. In order to avoid students with exposure to business ethics or economics courses, we decided not to use students in this (Principles of Management) course or other business courses as the control group in this study. Further, one of the purposes of this study is to ascertain the possible differences in our model regarding students' college major. Therefore, we selected psychology students in the Basic Statistics for Behavioral Science course, offered to juniors by the Department of Psychology in the College of Education and Behavioral Science, as the control group (without intervention).

Procedure

Business students were asked to complete 22 surveys/activities (with their names on it) in a semester in order to receive in-class participation credits. Among these activities, we asked students to complete two separate research questionnaires. They completed a six-page survey at Time 1 in the beginning of the semester and then a four-page survey at Time 2, 4 weeks later. Volunteers completed the surveys confidentially and were asked to write their personal identification code (using only the initials of their full name and the last four digits of their social security number, e.g., ABC1234) on both surveys in order to match the two parts. These procedures may (1) avoid the possible impacts of fatigue and memory and (2) enhance the psychological separation (Podsakoff et al., 2003). We collected data from 198 business students (male = 128, 64.6%, female = 70) and 100 psychology students (male = 37, 37.0%, female = 63) in several sections of the course taught by the same professors. For the whole sample, there were 165 male and 133 female students. The means, SDs, and correlations of variables are presented in Tables I and II.

Measures

We adopted the love of money scale (LOM, 25 items, Tang and Chiu, 2003; Tang et al., 2006), Machiavellianism (Mach, 20 items, Christie and Geis, 1970) (measured at Time 1), and propensity to engage in unethical behavior (PUB, 32 items, Chen and Tang, 2006) (measured at Time 1 and Time 2), demographic variables (sex; age; years of education; work experience, in both current job and total career; major, whether business or psychology; annual income; etc.), and many other filler items. For the love of money and Machiavellianism, we employed a five-point scale with *disagree strongly* (1), *disagree* (2), *neutral* (3), *agree* (4), and *agree strongly* (5) as anchors. The unethical behavior measure is a measure of self-predictions and is a strong predictor of behavior. We offered the following instructions and used *very low probability* (1), *low* (2), *average* (3), *high* (4), and *very high probability* (5) as anchors: If you were in that

TABLE I

Means, SDs, and correlations of variables for the whole sample

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	22.82	5.61														
2. Sex	.54	.50	−.02													
3. Education	15.08	.99	.45★★	.10												
4. Work (year)	5.96	4.63	.78★★	.04	.30★★											
5. Income	16,741	16,515	.50★★	.13	.22★	.46★★										
6. Major	1.34	.47	.15★	−.24★★	−.26★★	.07	.05									
7. Rich	4.00	.73	.01	.11	−.03	−.02	.08	.04								
8. Motivator	3.81	.85	−.05	.09	−.04	.03	.01	−.15★	.62★★							
9. Important	4.02	.68	−.01	.13★	−.01	−.00	.08	−.03	.65★★	.56★★						
10. Mach	2.76	.68	.07	.19★★	.09	−.00	.00	−.00	.32★★	.30★★	.24★★					
11. Abuse 2	2.36	.93	−.03	.01	−.03	−.03	.01	.07	.10	.09	.07	.09				
12. Whistle 2	1.49	.91	.07	.06	.01	.04	.04	.12★	.07	−.02	.10	.14★	.20★★			
13. Theft 2	1.27	.61	−.04	.08	−.04	−.03	.01	.02	.06	.05	.08	.18★	.33★★	.40★★		
14. Corruption 2	1.48	.71	−.07	.14★	−.05	−.06	−.01	.01	.11	.11★	.14★	.27★	.37★★	.45★★	.64★★	
15. Deception 2	1.32	.67	−.04	.10	−.02	−.04	−.00	.01	.04	.04	.07	.21★	.34★★	.42★★	.72★	.80★★

Note: $N = 299$. Sex: Male = 1, Female = 0; Major: Business = 1, Psychology = 2 (nominal data). ★$p < .05$, ★★$p < .01$.

TABLE II

Means and SDs of variables for major, gender, and time

Variable	*M*	SD	*M*	SD	*F*	*t*
	Business		Psychology			
1. Age	22.10	2.43	24.44	8.95	7.66★★	
2. Sex	.65	.47	.37	.48	19.94★★★	
3. Education	15.26	.73	14.75	1.33	12.27★★★	
4. Work (year)	5.68	2.85	6.89	6.92	2.98	
5. Income	15,377.98	10,830.34	18,393.61	22,859.36	1.58	
MANOVA results: F (5, 192) = 13.16, $p < .001$, Wilks' Lambda = .745, $\partial\eta^2$ = .255						
1. Rich	3.98	.73	4.03	.72	.37	
2. Motivator	3.92	.83	3.64	.86	7.83★★	
3. Important	4.04	.71	3.99	.64	.31	
4. Mach IV	2.75	.66	2.76	.70	.00	
5. Resource abuse	2.31	.96	2.45	.87	1.52	
6. Not whistle blowing	1.41	.88	1.65	.96	4.48★	
7. Theft	1.26	.66	1.29	.50	.14	
8. Corruption	1.48	.76	1.47	.58	.01	
9. Deception	1.32	.68	1.33	.64	.02	
MANOVA results: F (9, 289) = 2.54, p = .008, Wilks' Lambda = .927, $\partial\eta^2$ = .073						

TABLE II

continued

Variable	*M*	SD	*M*	SD	*F*	*t*
	Male		Female			
1. Age	22.76	4.49	22.93	6.83	.15	
2. Education	15.16	1.00	14.97	.98	1.83	
3. Work (year)	6.13	4.32	5.75	5.04	.01	
4. Income	18,068.15	1,726.70	14,441.38	1,422.23	2.44	
MANOVA results: F (4, 193) = 1.91, p = .110, Wilks' Lambda = .962, $\partial\eta^2$ = .038						
1. Rich	4.09	.76	3.94	.71	3.11	
2. Motivator	3.93	.85	3.76	.90	2.43	
3. Important	4.12	.73	3.94	.65	4.81*	
4. Mach IV	2.87	.69	2.60	.66	10.43***	
5. Resource abuse	2.36	.93	2.35	.93	.01	
6. Not whistle blowing	1.54	.98	1.40	.78	1.53	
7. Theft	1.29	.65	1.20	.50	1.61	
8. Corruption	1.54	.74	1.35	.57	5.51*	
9. Deception	1.36	.69	1.23	.55	2.95	
MANOVA results: F (9, 263) = 1.75, p = .079, Wilks' Lambda = .944, $\partial\eta^2$ = .056						
Business sample	Time 1		Time 2		Levene's F^a	t (two-tailed)
Abuse resource	2.31	.95	2.32	.97	.026	.077
Not whistle blowing	1.54	.96	1.41	.90	4.242*	1.389
Theft	1.42	.84	1.26	.67	12.174***	2.119*
Corruption	1.51	.84	1.48	.77	2.416	.625
Deception	1.41	.87	1.31	.69	8.994**	1.404
Psychology sample	Time 1		Time 2		Levene's F^a	t (two-tailed)
Abuse resource	2.45	.97	2.50	.97	.018	−.394
Not whistle blowing	1.57	.99	1.68	1.07	.897	−.501
Theft	1.34	.67	1.33	.57	.340	.160
Corruption	1.43	.69	1.49	.65	.076	−.647
Deception	1.30	.64	1.36	.72	.996	−.567

Note: Sample size: Business = 198, Psychology = 101; Male = 165, Female = 134. *$p < .05$, **$p < .01$, ***$p < .001$.
[a]Levene's F-test for equality of variances.

situation, what is the probability that you would take action as suggested in the vignette?

Based on suggestions in the literature, exploratory factor analysis (EFA) results, and the specific hypotheses of this article, we selected the nine-item, three-factor love of money scale, four-item, one-factor Machiavellianism (two items from Tactics and two items from Views of Human Nature), and 15-item, five-factor unethical behavior. Appendix shows the specific items, first-order latent sub-constructs, second-order latent construct, Cronbach's alpha, and factor loading of confirmatory factor analysis results of all measures.

Definition

We define the issue of intelligence versus wisdom as follows: First, if ethics intervention does (does not) change students' unethical behavior, then unethical behavior is (is not) under professors' control, supporting the omnipotent (symbolic) view, i.e., the issue of intelligence. Second, if the love of money and Machiavellianism (measured at Time 1) are (are not) directly or indirectly related to unethical behavior (measured at Time 2), then the relationship between the love of money and unethical behavior is not (is) under business professors' control, supporting the symbolic (omnipotent) view, i.e., the issue of wisdom.

Results

We collected data from a single source at two time periods and may have a potential problem regarding common method variance (CMV). Although the common method variance (CMV) problem may have been overstated and reached the status of urban legend in the literature, there is little credible evidence that common method variance exists, and much evidence to the contrary (Spector, 2006). We examined this issue in three steps according to suggestions in the literature (Podsakoff et al., 2003).

Harman's single-factor test (Step 1)

We conducted Harman's one-factor test, examined the unrotated factor solution involving 28 items of all three variables of interest in an exploratory factor analysis (EFA), found six factors, and listed the scale (or factors of a scale) and amount of variance explained below: PUB-theft, corruption, and deception (26.52%), LOM (17.60%), PUB-not whistle blowing (6.94%), Machiavellianism (5.86%), PUB-resource abuse (5.40%), and factor with cross loadings (3.77%), respectively. No single factor accounted for the majority of the covariance in the independent and criterion variables. The concern for CMV was not warranted.

Measurement model (Step 2)

We examined the fit between our measurement model and our data and found a good fit (χ^2 = 626.95, df = 342, χ^2/df = 1.83, $p < .01$, TLI = .93, CFI = .94, RMSEA = .05, see Appendix) based on criteria suggested in the literature (χ^2/df < 3, TLI, CFI > .90, RMSEA < .08) (Vandenberg and Lance, 2000). We examined the model across major (business vs. psychology) in a multi-group confirmatory factor analysis (MGCFA) and found a good fit (χ^2 = 1140.71, df = 684, χ^2/df = 1.67, $p < .01$, TLI = .90, CFI = .91, RMSEA = .05).

The effect of a single unmeasured latent method factor (Step 3)

To demonstrate that the results are not due to common method variance (CMV), a measurement model with the addition of a latent common method variance (CMV) factor must not significantly improve the fit over our measurement model without a CMV factor. With a latent common method variance factor, "the variance of the responses to a specific measure is partitioned into three components: (1) trait, (2) method, and (3) random error" (Podsakoff et al., 2003, p. 891). We compared (1) the measurement model *without* CMV (χ^2 = 626.95, df = 342, χ^2/df = 1.83, $p < .01$, TLI = .93, CFI = .94, RMSEA = .05) and (2) the model *with* CMV (χ^2 = 524.41, df = 314, χ^2/df = 1.67, $p < .01$, TLI = .95, CFI = .96, RMSEA = .05) and found that the change of fit index was insignificant (ΔCFI = .02) (Cheung and Rensvold, 2002). This issue was negligible. We turn to the main focus of this study.

Effects of ethics intervention on unethical behavior (PUB)

We compared the PUB at Time 1 and at Time 2. Changes in longitudinal research can be classified as alpha (α, changes in the latent means across time), beta (β, changes in factor variance or factor loadings across time), and gamma (γ, changes in the number of common factors or in the covariances among factors) (Riordan et al., 2001). Further, γ change is the "*second-order* or *frame-breaking* change" (Thompson and Hunt, 1996, p. 856). If γ change exists, it means that the unethical behavior at Time 2 (after the intervention) was no longer comparable with that at Time 1 (before the intervention).

For business students (with intervention), there were significant γ ($\Delta\chi^2$ = 28.17, Δdf = 10) and β

($\Delta\chi^2$ = 36.53, Δdf = 10) changes (Table III). For business students, the variance of factor theft at Time 1 was significantly larger than that at Time 2 and factor theft decreased significantly from Time 1 (1.42) to Time 2 (1.26) (Levene's test for equality of variances: F = 12.174, $p < .001$, and t = 2.119, two-tailed, $p < .05$, see bottom of Table II). The variances of not whistle blowing and deception at Time 1 were also significantly higher than that at Time 2. However, the mean differences of other factors of PUB failed to reach significance. We concluded that business students with ethics intervention had significant γ change and mean change for factor theft only between Time 1 and Time 2.

For psychology students (without intervention), there was a significant β change ($\Delta\chi^2$ = 23.26, Δdf = 10, similar to business students) but no γ change. There were no significant changes in variances or means of these variables between Time 1 and Time 2. Psychology students without the ethics intervention did not have any major changes of PUB from Time 1 to Time 2.

TABLE III

Tests for γ, β, and α change (PUB, Time 1 vs. Time 2)

	χ^2	df	χ^2/df	p	TLI	CFI	RMSEA	$\Delta\chi^2$	Δdf
Whole sample									
$\Delta\gamma$									
Model 1	302.161	148	2.042	.000	.986	.991	.042		
Model 2	329.250	158	2.084	.000	.986	.990	.043	27.089***	10
$\Delta\beta$									
Model 3	346.345	163	2.125	.000	.985	.990	.043		
Model 4	384.525	173	2.223	.000	.984	.988	.045	38.180***	10
$\Delta\alpha$									
Model 5	483.966	193	2.508	.000	.980	.984	.050		
Model 6	490.365	198	2.477	.000	.980	.984	.050	6.399	5
Business sample									
$\Delta\gamma$									
Model 1	298.836	148	2.019	.000	.981	.988	.051		
Model 2	327.007	158	2.070	.000	.980	.987	.052	28.171***	10
$\Delta\beta$									
Model 3	339.620	163	2.084	.000	.980	.986	.052		
Model 4	376.147	173	2.174	.000	.978	.984	.055	36.527***	10
$\Delta\alpha$									
Model 5	461.904	193	2.393	.000	.974	.979	.059		
Model 6	469.351	198	2.370	.000	.974	.979	.059	7.447	5
Psychology sample									
$\Delta\gamma$									
Model 1	249.140	148	1.683	.000	.970	.981	.058		
Model 2	263.679	158	1.669	.000	.970	.980	.058	14.539	10
$\Delta\beta$									
Model 3	277.922	163	1.705	.000	.969	.979	.059		
Model 4	301.181	173	1.741	.000	.967	.976	.061	23.259**	10
$\Delta\alpha$									
Model 5	351.244	193	1.819	.000	.963	.971	.064		
Model 6	362.171	198	1.779	.000	.965	.971	.062	.927	5

Note: Model 1 = equal factor structure between groups (Time 1 and Time 2); Model 2 = Model 1 + equal factor covariances; Model 3 = Model 2 + equal factor variances; Model 4 = Model 3 + equal factor loadings; Model 5 = Model 4 + latent means freely estimated; Model 6 = Model 5 + equal latent means. **$p < .01$, ***$p < .005$.

In summary, business students' ethics intervention has a limited impact on the issue of learning and education (intelligence), whereas psychology students without the ethics intervention do not have any significant changes between Time 1 and Time 2. We examine our theoretical model below from the love of money perspective.

Step 1: The whole sample

Results of Table IV showed a good fit between our model and data (χ^2 = 565.28, df = 362, χ^2/df = 1.56, $p < .01$, TLI = .95, CFI = .96, RMSEA = .04). Path 1 (the Love of Money → Unethical Behavior) was not significant (regression weight = -.05). Path 2 (the Love of Money → Machiavellianism) (.46, $p < .001$; 95% confidence level: .277 to .595) and Path 3 (Machiavellianism → Unethical Behavior) (.35, $p < .001$; 95% confidence level: .101 to .351) were both significant, supporting Hypotheses 2 and 3. As expected, Paths 4–6 were not significant. The love of money is indirectly related to unethical behavior through Machiavellianism (the Love of Money → Machiavellianism → Unethical Behavior).

TABLE IV

SEM results

Path	Regression weight	
Step 1: The whole sample	Whole sample	
1. Love of Money → Unethical Behavior	−.05	
2. Love of Money → Machiavellianism	.46***	
3. Machiavellianism → Unethical Behavior	.35**	
4. Income → Unethical Behavior	.02	
5. Income → Love of Money	.08	
6.Income → Machiavellianism	−.01	
Step 2: Major (Business vs. Psychology)	Business	Psychology
1. Love of Money → Unethical Behavior	.00	−.12
2. Love of Money → Machiavellianism	.45***	.50***
3. Machiavellianism → Unethical Behavior	.40**	.22
4. Income → Unethical Behavior	.07	−.03
5. Income → Love of Money	.02	.13
6. Income → Machiavellianism	.00	−.05
Step 3: Gender (Male vs. Female)	Male	Female
1. Love of Money → Unethical Behavior	.05	.04
2. Love of Money → Machiavellianism	.32**	.53**
3. Machiavellianism → Unethical Behavior	.38**	.08
4. Income → Unethical Behavior	.05	.01
5. Income → Love of Money	.14	.00
6. Income → Machiavellianism	−.08	.05
Step 4: Gender within Business	Male business	Female business
1. Love of Money → Unethical Behavior	.11	.12
2. Love of Money → Machiavellianism	.30**	.35**
3. Machiavellianism → Unethical Behavior	.38**	.16
4. Income → Unethical Behavior	.15	.01
5. Income → Love of Money	.02	.05
6. Income → Machiavellianism	−.12	.07

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

Our results revealed the following interesting findings: When both the direct effect (the Love of Money → Unethical Behavior) and the indirect (the Love of Money → Machiavellianism → Unethical Behavior) were examined simultaneously using the model, the indirect effect (the mediating effect) prevailed, while the direct effect was not significant. Therefore, Machiavellianism serves as a mediator of the relationship between the love of money and the PUB.

The standardized direct effect of Path 1 was −.05. The standardized indirect effect of the love of money on unethical behavior (the Love of Money → Machiavellianism → Unethical Behavior) was .16. Thus, when the love of money goes up by 1 SD, then unethical behavior goes up by .16 SD. The standardized total effect of the love of money on unethical behavior was .11 (i.e., .16 − .05 = .11). The standardized direct effect, indirect effect, and total effect were listed as follows: for the love of money on Machiavellianism: .46, .00, and .46, respectively; and for Machiavellianism on unethical behavior: .35, .00, and .35, respectively. The predictors of unethical behavior explained 10.7% of its variance (squared multiple correlation = .107).

Path of the love of money to unethical behavior

We set all the major paths (i.e., 2–6) to zero and examined only Path 1 (the Love of Money → Unethical Behavior) using the same model (χ^2 = 618.00, df = 367, χ^2/df = 1.68, $p < .01$, TLI = .94, CFI = .95, RMSEA = .05). Path 1 approached significance (.11, C.R. = 1.703, p = .089). Hypothesis 1 was not supported. The love of money alone explained 1.3% of the unethical behavior variance. These findings can be explained further when we compare the model across college majors (in Step 2).

Step 2: College major as a moderator

College major

Multivariate analyses of variance (MANOVAs) showed significant differences between psychology and business students in age (24.44 vs. 22.10), education (14.75 vs. 15.26), and gender (male: 36.6% vs. 64.6%, Table II). Business students considered money a motivator (3.92 vs. 3.64) and were more likely to become whistleblowers (1.41 vs. 1.65) than psychology students. Only two out of nine variables were significantly different.

Business students

We examined business and psychology students simultaneously using a multiple-group analysis (χ^2 = 1101.31, df = 724, χ^2/df = 1.52, $p < .01$, TLI = .91, CFI = .92, RMSEA = .04). For business students, both Path 2 (.45, C.R. = 4.278, $p < .001$; 95% confidence level: .207 to .559) and Path 3 (.40, C.R. = 3.303, $p < .01$; 95% confidence level: .131 to .511) were significant. We presented the standardized direct effect, indirect effect, and total effect as follows: the love of money on unethical behavior (−.00, .18, and .18), the love of money on Machiavellianism (.45, .00, and .45), and Machiavellianism on unethical behavior (40, .00, and .40, respectively). The predictors of unethical behavior explained 16.8% of its variance (squared multiple correlation = .168).

We again examined only Path 1 (χ^2 = 1156.97, df = 734, χ^2/df = 1.58, $p < .01$, TLI = .90, CFI = .91, RMSEA = .04) and found that the love of money is directly related to unethical behavior (.18, C.R. = 2.218, p = .027), supporting Hypothesis 1. The love of money alone explained 3.2% of variance of unethical behavior.

Psychology students

Path 2 (.50, C.R. = 3.499, $p < .001$; 95% confidence level: .286 to .874) was significant, but Path 3 (.22, C.R. = 1.384, $p > .05$; 95% confidence level: −.037 to .217) was not. The standardized direct effect, indirect effect, and total effect were summarized as follows: the love of money on unethical behavior (−.12, .11, and −.01), the love of money on Machiavellianism (.50, .00, and .50), and Machiavellianism on unethical behavior (.23, .00, and .23). The predictors of unethical behavior explained 4.0% of its variance. Again, Path 1, when examined alone (χ^2 = 1156.97, df = 734, χ^2/df = 1.58, $p < .01$, TLI = .90, CFI = .91, RMSEA = .04), was *not* significant (−.01, C.R. = −.106, p = .916). The standardized direct effect of the love of money on unethical behavior was −.01. The love of money alone explained 0% of variance of unethical behavior.

The difference in Path 3 between business students (.40) and psychology students (.22) was significant (C.R. = −1.978, $p < .05$). The indirect path (mediating effect) is applicable to only business students but not to psychology students (Hypothesis 3A). The direct path of the love of money to unethical behavior alone (Path 1) was significant for business students but not for psychology students. These results led to the non-significant Path 1 for the *whole* sample (Step 1). College major was a moderator. For business students, the love of money is indirectly and also directly related to unethical behavior, for psychology students, the direct and indirect effects are not significant.

Step 3: Gender as a moderator

MANOVA results showed that males had higher scores on factor important, Machiavellianism, and factor corruption than females (Table II). Our multi-group analysis across gender (χ^2 = 1120.72, df = 724, χ^2/df = 1.55, $p < .01$, TLI = .98, CFI = .98, RMSEA = .04) showed that the love of money was indirectly related to unethical behavior through Machiavellianism for males only. For females, the path of the love of money to Machiavellianism was significant, but the path of Machiavellianism to unethical behavior was non-significant, supporting Hypothesis 3B. Gender was a moderator. The love of money is indirectly related to unethical behavior for male students but not for female students.

Step 4: Gender differences within the business sample

Due to the results presented in Models 2 and 3 regarding major and gender, we examined gender differences in the business sample specifically (χ^2 = 1170.72, df = 724, χ^2/df = 1.62, $p < .01$, TLI = .96, CFI = .97, RMSEA = .06) and found that the love of money was indirectly related to unethical behavior through Machiavellianism for males only. For females, the path of the love of money to Machiavellianism was significant, but the path of Machiavellianism to unethical behavior was not. Results supported Hypothesis 3B for the business sample. The love of money is indirectly related to unethical behavior for male business students but not for female business students. In summary, our longitudinal analyses of the whole unethical behavior model suggest that business students' ethics intervention has little, if any, or no impact on the issue of virtue (wisdom).

Discussion

This study provides the following theoretical, empirical, and practical contributions to the literature. First, after business students have been exposed to a chapter on social responsibility and managerial ethics, they have reconceptualized the notion of unethical behavior and experienced a significant γ change. This significant frame-breaking change (Thompson and Hunt, 1996) suggests that learning does occur among business students. There are no significant changes for psychology students (without intervention).

Further, business students may have more experiences and opportunities dealing with the issue of theft in their part-time work than psychology students. Thereby, business students may have a high mean score and large variance of factor theft at Time 1. Compared to the data of theft at Time 1 (mean score and variance), the ethics training has significantly reduced business students' propensity to engage in theft (mean score and variance) at Time 2 (see Levene's test for equality of variances, Table II). Due to the lack of possible real experiences and opportunities in dealing with corruption, deception, etc., the ethics intervention may have little impact on these matters. As suggested in the literature, students should learn from their own experiences (Mintzberg and Gosling, 2002). We conclude that this short ethics training may cause undergraduate business students to reconceptualize the notion of unethical behavior but have ‘‘very limited success’’ in reducing students' propensity to engage in all different aspects of unethical behavior. There is only one significant change in the propensity to engage in theft, among five constructs of unethical behavior (PUB). The omnipotent view may be partially supported in these analyses. This reflects students' ability to learn, the effect of training on knowledge in the educational process, and the issue of intelligence.

Second, we employ the love of money and Machiavellianism measured at Time 1 to predict unethical behavior measured at Time 2 using our model. For the whole sample, the love of money is indirectly related to unethical behavior through Machiavellianism (the Love of Money → Machiavellianism → Unethical Behavior). Money (self-reported income) is *not* related to unethical behavior because income has little meaning for part-time students in this sample. Further, the same mediating path (the Love of Money → Machiavellianism → Unethical Behavior) exists for business students but not for psychology students, for male students but not for female students, and for male business students but not for female business students. College major and gender are two moderators. The love of money is directly related to unethical behavior for business students but not for psychology students when Path 1 alone is examined in the model.

The crux of the matter is that we measured unethical behavior at Time 2 after all male and female business students have completed the identical business ethics intervention, yet deeply rooted values at Time 1 (the love of money and Machiavellianism) are still related to the modified unethical behavior at Time 2 for males but not for females. We conclude that despite students' ability to learn and intelligence, the relationship between the love of money and unethical behavior still exists. It should be noted that the differences in our theoretical model come from students' college major and gender, which are beyond business professors' control, supporting the symbolic view. Since students have already learned it in the ethics intervention, it is not the lack of education or learning (intelligence) but the lack of virtue (Giacalone, 2004) or wisdom (Feiner, 2004) that caused the unethical behavior in this study. Results support the notion that the love of money is the root of evil (Tang and Chiu, 2003; Tang et al., 2007).

In summary, a short business ethics intervention may have a limited impact on the issue of learning and education (intelligence) but no impact on the issue of virtue (wisdom). The love of money is directly related to unethical behavior for business students and male business students, in particular. Students' college major (business vs. psychology) is the product of existing dispositional values (Staw et al., 1986) and the self-selection or attraction–selection–attrition process. Gender is a demographic variable. Both are *not* under business professors' control. Our professors' power or ability to influence students may be overrated.

Students enter business schools due to their love of money (Cunningham et al., 2004; McCabe et al., 2006). In this study, business students have a stronger belief that money is a motivator than psychology students, supporting the literature (Tang et al., 2005). Older psychology students have different work experiences and perspectives about ethical behavior that may contribute to their higher moral standards than their business counterparts. More male students are in the business sample (64.6%) than in the psychology sample (37.0%). Males have higher scores on factor important, Machiavellianism, and factor corruption than females, supporting the literature on Machiavellianism (Ross and Robertson, 2003) and the effect of training on ethical behavior (Ritter, 2006). It appears that a short ethical intervention may have very little or no impacts on business students' unethical behavior when we examine the relationship between the love of money, Machiavellianism, and unethical behavior using our theoretical model. Our results in the present study seem to support the notion that it is not lack of ''intelligence'' or ''brains'', but lack of ''wisdom'' (Feiner, 2004) or ''virtue'' (Gaicalone, 2004) that caused these scandals in society.

Limitation

Our data were collected from one source at two points in time and may not provide a cause-and-effect relationship among variables. We employ the following techniques for controlling common method biases: (1) adopt well-developed instruments with proven psychometric properties, (2) introduce a time lag between the predictor and criterion variables, (3) create a psychological separation, (4) protect confidentiality, and (5) select specific items and several statistical remedies in the data analysis: Harman's single-factor test (EFA), a measurement model (CFA), and a measurement model without and with a latent common method variance factor (Podsakoff et al., 2003). Students attend business and psychology classes due to their self-selection and interests but not due to random assignment by researchers. Our convenience samples are relatively small, not perfectly matched, and may not represent the population of all universities or the specific disciplines. We measure only students' PUB and not actual unethical behavior.

Some business students, high Mach students, in particular, may pick up on the hint that they are supposed to pretend to be ethical after the ethics intervention in this study and offer the socially acceptable responses. Ideally, a social desirability scale could have been included as part of the survey. Business students received credits for in-class participation when they completed these surveys in class. It is plausible that these students interpreted the questionnaire as another form of an exam that was already executed pertaining to the material that students gave answers at Time 2 under the impression it was a ''second'' chance to show the professor they understood the material that was being presented in class. With that said, the significant mediating effect still exists for business students and male business students, in particular. It appears that the link between (1) the love of money and Machiavellianism and (2) PUB may be very difficult to break.

Moreover, as mentioned earlier, ''a course'' on ethics produces either no significant effect (Peppas and Diskin, 2000), limited effect on students' attitudes toward ethical decisions (Duizend and McCann, 1998), or limited effect for females only (not for males) (Ritter, 2006). Some researchers may argue that a chapter in a Principles of Management course is not a valid substitute for ethics training. This short coverage on ethics and social responsibility may be labeled as ''teaching about ethics'' but not ''training in ethics''. This business ethics intervention is too brief to be effective. One possible flaw in this study is that most undergraduates have no real management experience, their interpretation is highly suspect as it related to ethical decision making. Researchers may want to incorporate executive MBA (EMBA) students who have many years of full-time work experience in future studies.

Future research

First, is it a matter of education (intelligence) or virtue (wisdom) (Feiner, 2004; Giacalone, 2004)? Can professors change students and future managers' deeply rooted values, behavioral strategies, and ethical decision making while facing the legitimacy crisis of teaching business ethics (Rynes et al., 2003)? The top American business schools may have weakened the moral character of students (Schneider and Prasso, 2002) in that business students' idealistic ambitions to create quality products and deliver customer satisfaction take a back seat to the boosting of share prices 2 years later.

Further, some courses may have a strong emphasis on business ethics, whereas others (e.g., economics) may actually weaken it (McCabe et al., 2006; Schneider and Prasso, 2002). Research suggests that private universities and universities with selective programs and religious affiliations perform better than their counterparts in ethics training (Evans et al., 2006). In a follow-up survey, students reveal a 3–2 ratio in the business curriculum with more courses emphasizing making money than making ethical decisions. Future researchers need to identify specific business courses that will influence students' awareness of business ethics and change strategies accordingly to improve students' ethical beliefs, attitudes, and behaviors. Educators and researchers need to consider not only the quality but also the quantity of ethics coverage in courses and in the business curriculum and examine these issues empirically in the future.

Second, does ethics training start in one's family, church, school, corporation, or society in general? Do these institutions provide a stronger or weaker ethical socialization process now than in the past (Giacalone, 2004)? Can researchers identify the most critical time and methods for teaching business ethics, if they exist at all? Shall we encourage schools to adopt an honors program or code of ethics at a young age in order to get a head start on ethical education? Can schools enforce a code of ethics? Can American corporations balance an ethical corporate culture with maximizing shareholder value (Kochan, 2002)?

Students bring dispositional values (Staw et al., 1986) to the university and maintain these values over time. Most have learned values and ethics before they reach college. Some undisciplined students in a value-neutral education system may want to do whatever they please. We also learned the following perceptions from our students. When the opportunity exists, some students with a ''win-at-all-costs'' psyche may ignore what they have learned and still engage in unethical behavior in order to make money. They want to make money for themselves first. That is why they study business. Then, they may think about the issue of unethical behavior, after the fact, if someone asks them about it. Researchers and managers need to be aware of (1) the huge gaps between what they know and what they actually do in a given situation, between their minds (intelligence) and their hearts (wisdom or virtue) and (2) what people have done (resource abuse, theft, corruption, and deception) and what they have failed to do (not whistle blowing) in organizations. The best predictor of future behavior is past performance. Our students will become managers and executives in the near future. Although we have only one ethics chapter and a 4 weeks time lag between our two measures in one semester, our model in this research may provide a valuable framework for future studies.

On the other hand, some argue that managers can't be created in a classroom. Professors can't teach management to people who aren't managers. People should learn from their own experiences (Mintzberg and Gosling, 2002). Some full-time MBA students are required to visit federal prisons and interview white-collar criminals who are paying their dues to society – often for cooking the books (Kercheval, 2004; Merritt, 2004). Business schools must seek the best balance between theory and practice and may want to adopt experiential approaches that involve students more deeply and create stronger impacts on ethics than other methods (e.g., Giacalone et al., 2003; Jurkiewicz et al., 2004).

Further, we may have to focus on our ethics training for business students in general and male business students in particular, i.e., the bad apples in the barrel (Treviño and Youngblood, 1990). It is estimated that based on results of cluster analysis, about 8.6% of students in our business sample may be labeled bad apples in this study. A small number of bad applies may create huge scandals in society. Further, management educators and researchers must realize that most people do not engage in major scandals and corruptions the very first time they encounter the opportunity and the pressure in their careers. However, they do start with something real small and trivial. Inch by inch, they dig deeper and deeper into a hole of which they cannot get out (Burton, 2004). Research suggests that most students and managers do look to the social context and culture to determine what is ethically right and wrong (Litzky et al., 2006; Treviño & Brown, 2004). Further, corporate ethical values have a positive ''double-whammy'' effect: increasing managers' ethical behavior and reducing their job stress (Tang et al., 2007). It is plausible that university and business school's strong ethical culture, value, and/or code of ethics may deter students' unethical behavior. Immediate actions are needed so that today's students will not be tomorrow's criminals (Merritt, 2002b).

Business schools and managers may consider (1) prevention, to identify and reject business or MBA-applicants, job applicants, and employees who are prone to engage in unethical behaviors; (2) control, the use of normative force (code of ethics, internal control systems, a role model, and a social norm) and instrumental force (proper checks and balances, electronic surveillance devices, and reward and punishment); and (3) deterrence: dismissing students in business programs or providing a strong response to harmful misbehavior that will promote ethical behaviors and deter unethical behaviors (Ivancevich et al., 2005; Merritt, 2003). Business schools need to invest in ethics education (Merritt, 2003), support research on ethics, raise the bar for admission, sift for and expel bad apples, and satisfy all stakeholders in society (e.g., business, students, media, AACSB International, and business school; Pfeffer and Fong, 2002; Trank and Rynes, 2003). Others argue that bad business students are the ones who need ethics training the most. Dismissing these bad apples may make the situation worse than it should be in society and does not seem to serve the purposes of enhancing business ethical decision making.

Can colleges and universities make vicious students virtuous or stupid students wise (Colson, 1999)? With a legitimacy crisis, faculty can not afford to throw out the baby with the bath water but need to make low-priority ''warm and fuzzy,'' non-quantitative behavioral, ethics courses more relevant to students (Prahad, 1997; Rynes et al., 2003). We should focus on what is important: For where your treasure is, there your heart will be also.

Although we cannot change people's ethical orientation overnight, we hope that repetition may reinforce and crystallize ethics in one's academic journey. Besides laws and the legal system, a sea change of the ethical social norm in schools, organizations, and society (Kleiner, 2005), or ethical community-building (McCabe et al., 2006), is needed to fight against unethical behavior. Educators need to incorporate, in their ethics education, value orientation and virtue in a materialistic world: What is the purpose of life (Warren, 2002)?

"People do work for money – but they work even more for meaning in their lives" (Pfeffer, 1998, p. 112). What has meaning (Ashmos and Duchon, 2000) and matters most in life? Who will judge and by whose standard (the world's standard or the Highest Creator's standard)? We need recognized moral imperatives or ethical foundations for students and managers. Students will learn the simple truth, or principle, and what really matters in life: Productivity and profit are consistent with virtuous behavior (Giacalone, 2004; Locke, 2002). Research based on managers in six continents around the world supports the precept of doing well by doing good: High corporate ethical values and low love of money are related to high ethical behavior, low stress, and high life satisfaction (Tang et al., 2007).

It may be difficult to separate ethical behavior from morality, values, religion, and spirituality at work (Delbecq, 2005; Kernochan et al., 2007; Steingard, 2005). Ultimately, the combination of "head" and "heart" will be the competitive advantage (Ashmos and Duchon, 2000). These suggestions offer us hope: We hope to identify strategies to not only open one's "mind" (head) to enhance learning (intelligence) but also one's "heart" to elevate virtue (wisdom). Moreover, future students, managers, and executives in organizations may become the masters of money, make good judgments based on intelligence, creativity, courage, and wisdom (the most important element) (Sternberg, 2003) and become great leaders, follow Hudson's (2006) twist on John F. Kennedy's famous inaugural address: "Ask not what God can do for your life plan, ask what your life can do for God's plan", become purpose-driven and virtuous human beings, and take active roles in serving humanity. This is very difficult to achieve because many are invited, but few are chosen (Matthew, 22, p. 14). This study provides a useful preliminary framework for future research and exploration in this area. More research is needed in this direction.

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Appendix

Items of major variables, Cronbach's alpha, and confirmatory factor analysis results

Item		Factor loading
The love of money (LOM) (Time 1)		
Factor rich	α = .803	
1. I want to be rich		.86
2. It would be nice to be rich		.70
3. Having a lot of money (being rich) is good		.76
Factor motivator	α = .867	
4. I am motivated to work hard for money		.72
5. Money reinforces me to work harder		.88
6. I am highly motivated by money		.90
Factor important	α = .752	
7. Money is good		.73
8. Money is important		.70
9. Money is valuable		.71
Machiavellianism (Mach) (Time 1)	α = .677	
1. The best way to handle people is to tell them what they want to hear		.67
2. It is hard to get ahead without cutting corners here and there		.47
3. Never tell anyone the real reason you did something unless it is useful to do so		.48
4. It is safest to assume that all people have a vicious streak and it will come out when they are given a chance		.55

Appendix *(Continued)*

Item		Factor loading
Propensity of unethical behavior (PUB) (Time 2)		
Factor resource abuse	α = .730	
1. Use office supplies (paper and pen), Xerox machine, and stamps for personal purposes		.64
2. Make personal long-distance (mobile phone) calls at work		.69
3. Waste company time surfing on the Internet, playing computer games, and socializing		.74
Factor not whistle blowing	α = .934	
4. Take no action against shoplifting by customers		.89
5. Take no action against employees who steal cash/merchandise		.99
6. Take no action against the fraudulent charges made by one's company		.86
Factor theft	α = .886	
7. Borrow $20 from a cash register overnight without asking		.88
8. Take merchandise and/or cash home		.91
9. Give merchandise away to personal friends (no charge to the customers)		.81
Factor corruption	α = .746	
10. Abuse the company expense accounts and falsify accounting records		.85
11. Receive gifts, money, and loans (bribery) from others due to one's position and power		.60
12. Lay off 500 employees to save the company money and increase one's personal bonus		.68
Factor deception	α = .903	
13. Overcharge customers to increase sales and to earn higher bonus		.82
14. Give customers "discounts" first and then secretively charge them more money later (bait and switch)		.88
15. Make more money by deliberately not letting clients know about their benefits		.91

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Thomas Li-Ping Tang
Department of Management and Marketing,
Jennings A. Jones College of Business,
Middle Tennessee State University,
P.O. Box 516 Murfreesboro, TN 37132, U.S.A.
E-mail: ttang@mtsu.edu

Yuh-Jia Chen
Rinker School of Business,
Palm Beach Atlantic University,
West Palm Beach, FL 33416, U.S.A.
E-mail: yuhjia222@yahoo.com