

# Temptation, Monetary Intelligence (Love of Money), and Environmental Context on Unethical Intentions and Cheating

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**Abstract** In Study 1, we test a theoretical model involving temptation, monetary intelligence (MI), a mediator, and unethical intentions and investigate the direct and indirect paths simultaneously based on multiple-wave panel data collected in open classrooms from 492 American and 256 Chinese students. For the whole sample, temptation is related to low unethical intentions indirectly. Multi-group analyses reveal that temptation predicts unethical intentions both indirectly and directly for male American students only; but not for female American students. For Chinese students, both paths are non-significant. Love of money contributes significantly to MI for all students. In Study 2, using money as a temptation and giving them opportunities to cheat on a matrix task, most Chinese students (78.4 %) do not cheat in open classrooms; supporting survey and structural equation modeling (SEM) results in Study 1. However, students in private cubicles cheat significantly more (53.4 %) than those in open classrooms (21.6 %). Finally, students' love of money attitude predicts cheating. Factor rich predicts the cheating amount, whereas factor motivator predicts the cheating percentage. Our results shed new light on the impact of temptation and love of money as

dispositional traits, money as a temptation, and environmental context (public vs. private) on unethical intentions and cheating behaviors.

**Keywords** Temptation · Dispositional trait · Monetary intelligence (MI) · Love of money · Environmental context · Public vs. private · Unethical intentions · Cheating · Gender · Cross-cultural · Multiple-panel · Self-control · Cognitive impairment · Good/bad apples/barrels

And lead us not into temptation, but deliver us from evil.

Matthew 6: 13.

Those who want to get rich are falling into temptation and a trap and into many foolish and harmful desires, which plunge them into ruin and destruction. For the love of money is the root of all evils.

1 Timothy 6: 9–10.

In the US and around the world, scholars and executives have witnessed numerous cases of corruption, scandals, and unethical behaviors involving large corporations (Enron, Worldcom) and many individuals (e.g., Bernie Madoff) (Ashforth et al. 2008; Gino et al. 2011). This world-wide phenomenon deserves researchers' attention (Fisman and Miguel 2007; Tang et al. 2011) because approximately \$3.5 trillion (5 % of global annual revenues) were lost due to various forms of corruption or unethical behaviors (Association of Certified Fraud Examiners 2012). Researchers attempt to investigate these unethical and deviant behaviors from the perspectives of bad apples (individual), bad cases (issue), and bad barrels (environment) (Kish-Gephart et al. 2010).

Theory of planned behavior (TPB, Ajzen 1991) suggests that attitude toward the behavior, social norm, perceived

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behavioral control are related to behavioral intention that, in turn, leads to behavior. Among individual difference variables, individuals' money attitudes [e.g., love of money (LOM)] contribute to unethical intentions and behavior (Tang and Chiu 2003). Based on theory of free will (Baumeister et al. 2008), scholars have investigated temptation (Holub et al. 2005; Hudmon et al. 1997) and unethical behaviors (Mead et al. 2009; Restubog et al. 2011). Further, research in cognitive neuroscience suggests that "emotion" and "reason" activate different areas of the brain (Greene et al. 2001). Tang et al. (2013b) assert that feelings of pay dissatisfaction (Locke 1969) (negative affect) provoke long, angry, and destructive *emotions* which excite some individuals to act impulsively (Loewenstein et al. 2001) and steal in the name of justice (Greenberg 1993); whereas pay satisfaction (positive affect) helps others reason reflectively with self-control and executive functions (Hofmann et al. 2009). Thus, researchers may study temptation from the reflective-impulsive perspective of decision making.

Tang and Sutarso (2013) followed TPB (Ajzen 1991) and developed a measure to assess temptation as a dispositional trait. Results of their theoretical model involving temptation, monetary intelligence (MI), and unethical intentions suggest that for the *positive indirect* path, yielding to temptation (e.g., high cognitive impairment and lack of self-control) leads to poor MI (low stewardship behavior but high cognitive meaning) that, in turn, leads to high unethical intentions (theft, corruption, and deception). For the *negative direct* path, those who do not fall into temptation (with no cognitive impairment and strong self-control) have high unethical intentions. Furthermore, there is a negative direct path for males, but a positive indirect path for females. Gender is a moderator.

Following suggestions in the literature (Greene et al. 2001; Loewenstein et al. 2001; Hofmann et al. 2009), the negative direct path reflects evaluative reason and reflective temptation, whereas the positive indirect path suggests emotional reactions and impulsive temptation (Tang et al. 2013b). Furthermore, gender differences reported in Tang and Sutarso (2013) reveal that males' actions mirror reflective temptation, while females' behaviors represent emotional impulse. Since both falling (positive indirect path) and not falling (negative direct path) into temptation lead to unethical intentions, we must keep ourselves away (or escape) from temptations to avoid doing unethical (evil) things.

Following Tang and Sutarso's (2013) new theoretical development in measuring and studying temptation, our first aim is to establish the configural and metric measurement invariance of temptation scale (reflective vs. formative, Figs. 1, 2) across cultures, based on our multiple-wave panel data collected in open classrooms from 492 American and 256 Chinese students (Study 1). Our second aim is to explore our

modified theoretical (SEM) model of temptation with temptation, unethical intentions, and MI (as a mediator) and investigate the direct and indirect paths simultaneously for the whole sample and using multi-group analyses to explore culture and gender as moderators. We present our present findings below: *Falling* into temptation (cognitive impairment and lack of self-control) is related to *low* unethical intentions *indirectly* through MI (high LOM motive and low cognitive meaning of money), but not to unethical intentions *directly*. Subsequently, falling into temptation is related to unethical intentions indirectly, whereas not falling into temptation is related to unethical intentions directly. This pattern fits male students in the US only, but not for females (Figs. 3, 4), suggesting that male students are more unethical than female students. For the Chinese sample, however, both direct and indirect paths are non-significant (Figs. 5, 6). Our results partially support Tang and Sutarso's findings. In both cultures, however, the LOM motive is significantly related to the MI.

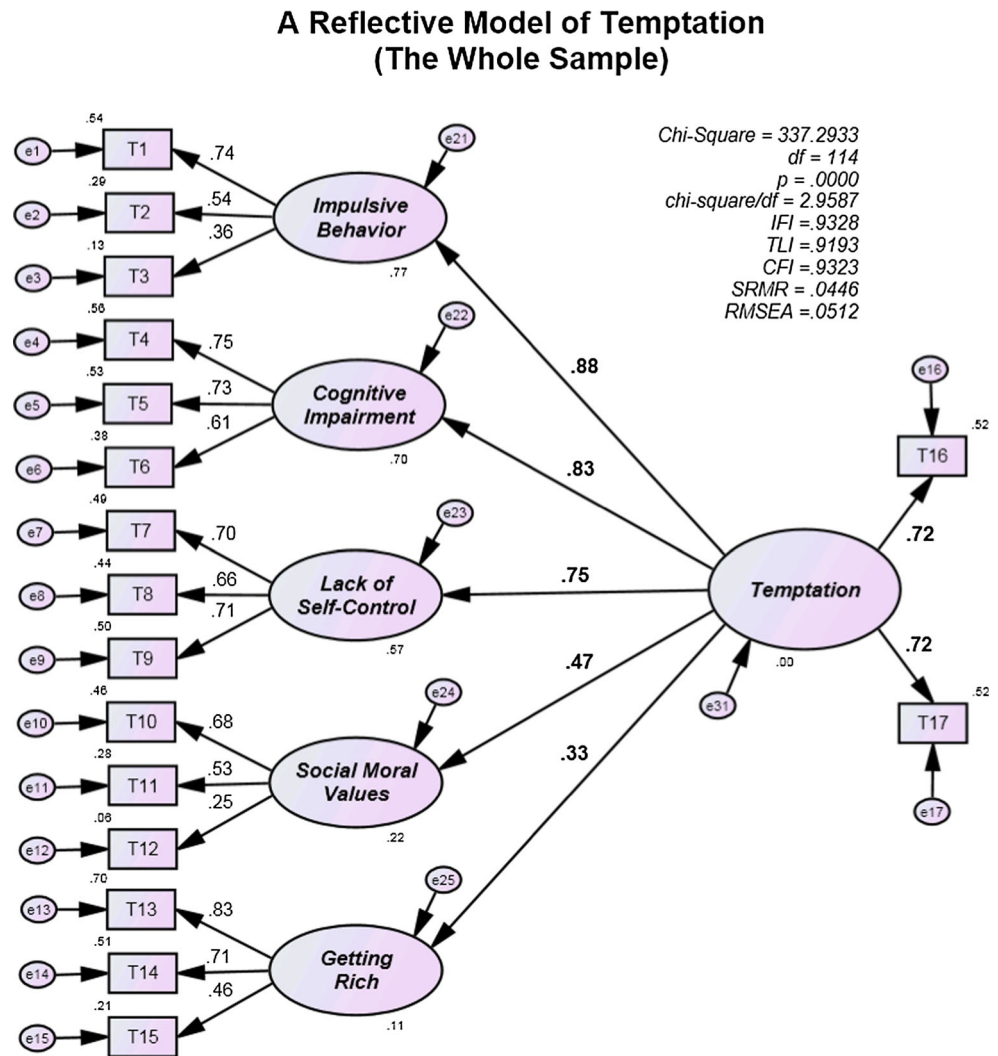
Due to these non-significant paths for Chinese students, our third aim is to verify our Study 1's survey and SEM results in two laboratory experiments in China (Study 2). We collect data in open classrooms (Experiment 1) and in private cubicles of a laboratory (Experiment 2). After completing a survey on LOM, Chinese students are paid based on their performance of a matrix task. Using money as a temptation and giving them the opportunity to cheat, 78.4 % Chinese students in an open classroom (Experiment 1), similar to open classrooms of Study 1, do "*not*" cheat; supporting Study 1's theoretical SEM model. Students (53.6 %) in private cubicles of a laboratory, however, cheat significantly more (Experiment 2, "bad" barrels) than those in open classrooms (Experiment 1, "good" barrels). When tempted with money for the matrix task, students' LOM motive (factors rich and motivator) predicts cheating (amount and percentage, respectively) in these two experiments. In summary, we demonstrate that temptation and LOM (dispositional traits) predict unethical intentions and cheating behaviors. Individuals' LOM and temptation dispositions ("good/bad apples") and public/open versus private/opaque experimental contexts ("good/bad barrels") have significant impacts on cheating. We trust that our novel findings make significant theoretical, empirical, and practical contributions (Colquitt and Zapata-Phelan 2007) to the literature related to psychology of money and business ethics.

## Study 1

### Temptation

Temptation, from the Greek word *Peirasmos*, is the state of being enticed, allured, or seduced. It carries two meanings—being misled into sin or enticed to do wrong, or

**Fig. 1** A reflective model of temptation



being put to the test (Tang and Sutarso 2013). We study temptation from the perspectives of consumer behavior and business ethics. First, consumers’ impulsive consumption leads to instant gratification (Tice et al. 2001) but causes great guilt later. Second, when most people are *tempted*, they are willing to be a little dishonest, regardless of the risks. People *rationalize their dishonesty* easily when cheating is one step removed from cash (Ariely 2008). Compared to strong temptation, the weak temptation has an inhibiting effect on self-regulation process, forming a bigger threat for long-term goal attainment (Kroese et al. 2011). People’s temptation to break small rules is titillating due to its power to *temporally* bring a sense of excitement to life and can be rationalized easily. Resisting temptation takes a lot of will-power, clear thinking, and self-control that may or may not deliver us from evil.

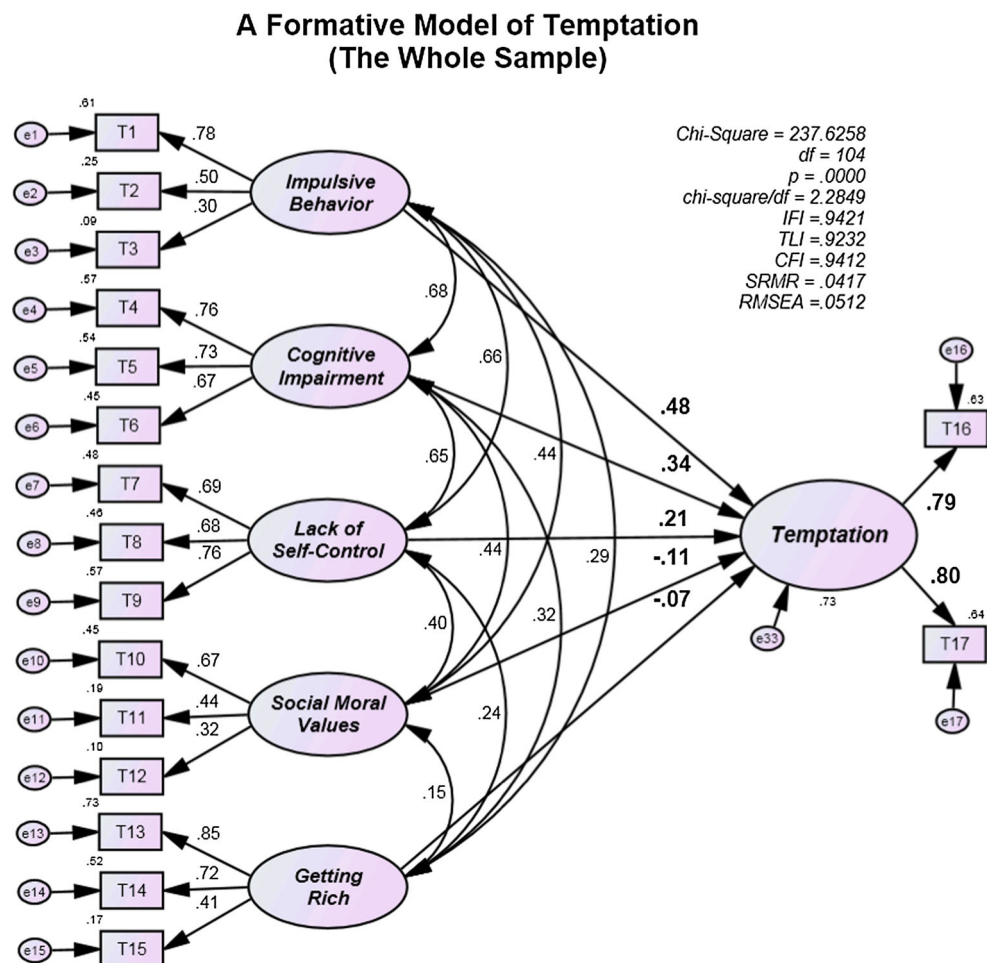
Adopting the framework of TPB (Ajzen 1991), the ABC model of an attitude (Bagozzi et al. 1979), and theory of free will (Baumeister 2002), Tang and Sutarso (2013) identified five sub-components (or antecedents) that cause people to

fall into temptation: (1) getting rich (affective), (2) impulsive behavior (behavioral), (3) cognitive impairment (cognitive), (4) social moral values (social norm), and (5) lack of self-control (perceived control). The first three sub-constructs represent the ABC components of an attitude, whereas the remaining two are the social norm and perceived control components of the TPB. Using a formative model, they theorize that these five first-order sub-constructs define the second-order latent construct—temptation. We present a brief review of these components, below.

First, individuals who want to be rich have high Machiavellianism, take risks, and engage in unethical behaviors (Tang et al. 2011). Given the size of the bonus payments in the form of stock options, Enron executives’ “temptation” to engage in unethical behavior was, in hindsight, disturbingly obvious (*The Daily Record* 2003). From the business ethics perspective, unethical behavior is directly and/or indirectly related to personal (financial) gain.

Second, in our everyday life, some people cannot delay the fulfillment of their needs and desires, follow their

**Fig. 2** A formative model of temptation



hearts, and seek instant gratification (Stolarski et al. 2011; Tice et al. 2001; Zimbardo and Boyd 1999). Advertisements in media encourage consumers to capture the moment, consume products and services, and enjoy it instantly. Domain-specific temptation explained 40 % of the unique within-individual variance in impulsive behavior (Tsukayama et al. 2012). When opportunities exist, some may engage in unethical behavior, cheat just a little, and take the advantages of the situation impulsively. From the perspective of consumer behavior and business ethics, impulsive behavior is related to temptation.

Third, cognitive impairment contributes significantly to temptation. On the one hand, when crucial self-regulatory resources have been depleted, some people become weak physically, psychologically, and spiritually, leading to cognitive impairment. Sleep deprivation, for example, causes workplace deviance due to the depletion of self-regulatory resources (Baumeister 2002; Christian and Ellis 2011). In this situation, the spirit is willing, but the flesh is weak.<sup>1</sup> On the other hand, scandals and corruption are *not*

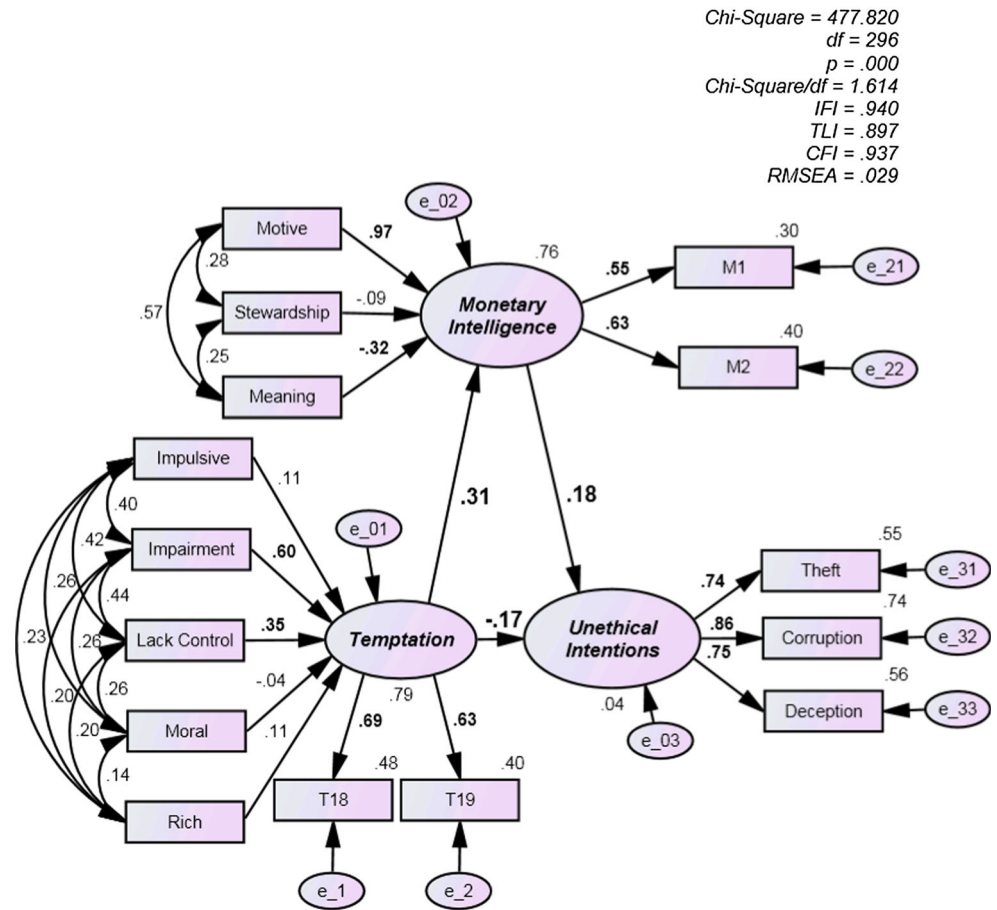
caused by executives' lack of "intelligence" or "brains", nor accidents, honest mistakes, or cognitive impairment; but rather by their malicious intent, self-interests, and lack of "wisdom", "virtue" (Feiner 2004; Tang and Chen 2008). Executives and individuals in recent scandals strategically planned, cleverly organized, deceitfully misled, and carefully executed their unethical acts with concerted efforts and executive function. Those who suffer cognitive impairment may not have the mental competencies or capacities to engage in these deviant scandals. In other words, unethical intentions, behaviors, and corruption are results of purposeful acts and deliberate deeds. Thus, we have mixed arguments and expectation in the context of business ethics.

The fourth factor is related to people's social and moral values (social norm of TPB). Individuals' behaviors are caused by the interaction between the person and the environment. Most people do look to the social context to determine what is ethically right or wrong, obey authority figures, and do what is rewarded in organizations. For example, getting Harvard, MIT, Yale, and Princeton students to contemplate their own ethical values by

<sup>1</sup> Matthew 26:41.

**Fig. 3** Results of our theoretical model (the American male sample)

**A Theoretical Model of Temptation, Monetary Intelligence, and Unethical Behavior Intentions (The American Male Sample)**



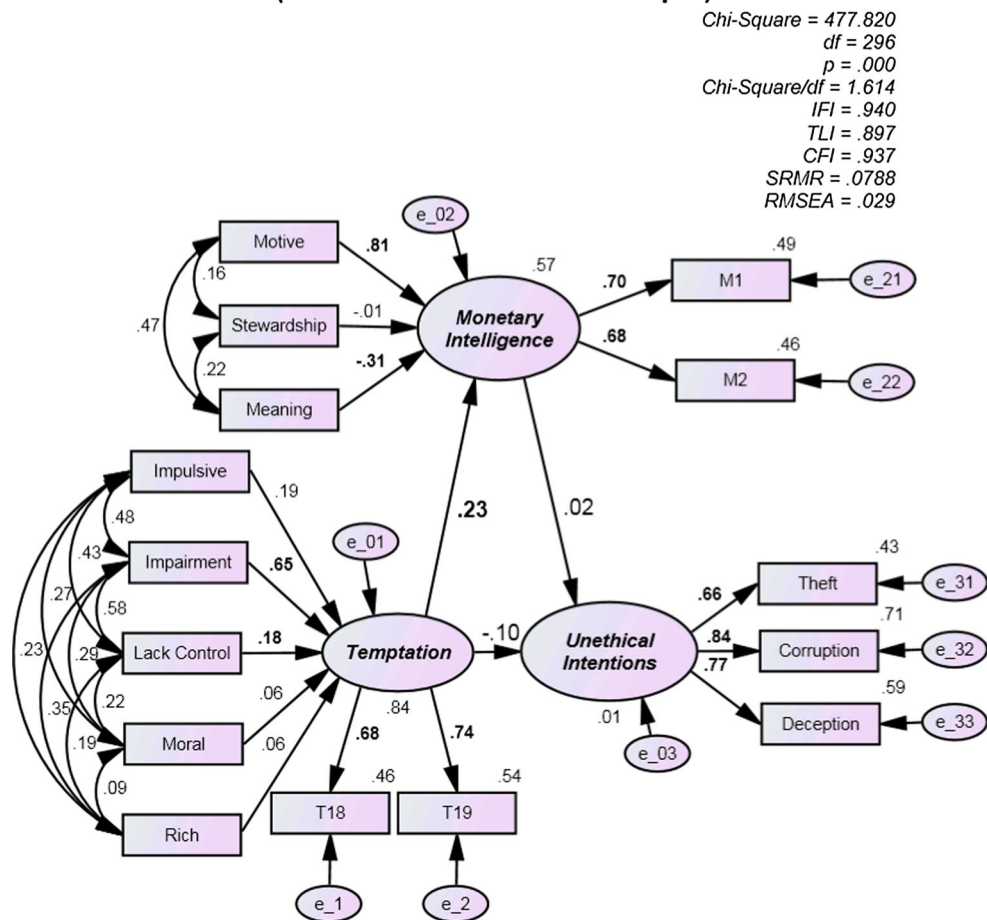
“recalling the Ten Commandments or signing an honor code” eliminates cheating completely, while offering “poker chips” to redeem for cash, a few seconds later, *doubles* the level of cheating (Ariely 2008, p. 24; see also Aquino et al. 2009; Tang 2012). Supervisors with a high (or low) level of behavioral integrity (Simons et al. 2007) curb (or incite) deviant behavior (Dineen et al. 2006). People with high LOM but low perceptions regarding the authenticity of supervisor’s personal integrity and character (ASPIRE) had the highest unethical behavior intentions; whereas those with high LOM and high ASPIRE had the lowest (Tang and Liu 2012). Thus, supervisor’s authentic personal integrity and character (ASPIRE) make a difference. One possible implication is that most people’s ethical intentions and behaviors are influenced by ethical values and cultures at the individual and organization levels. The Ten Commandments and poker chips signify *sacred* and *secular* values, or good and bad “barrels”, respectively. Messages/temptations presented positively or negatively in the social context

contribute to individuals’ *ethical* or *unethical* intentions and behaviors, respectively (Kouchaki et al. 2013; Tang et al. 2011, 2013b; Yang et al. 2013). Since “recalling the Ten Commandments or signing an honor code” eliminates cheating completely, ethical social norm may prevent people from falling into temptation.

Finally, self control plays a critical role in temptation and is “the ability to override or change one’s inner responses, as well as to interrupt undesired behavioral tendencies (such as impulses) and refrain from acting on them” (Baumeister et al. 1998; Tangney et al. 2004, p. 274). Acts of self-regulation *without* rest or replenishment (Baumeister et al. 1998; Muraven and Baumeister 2000) “impair subsequent self-regulatory efforts” (Gino et al. 2011, p. 192). People who are on a diet, for example, tend to eat more pieces of candy when given the opportunity in an experiment than those who are not (Baumeister 2002). Both trait self-control and self-control depletion predict impulsive cheating behavior on a problem-solving task (de Ridder et al. 2012; Muraven et al. 2006;

**Fig. 4** Results of our theoretical model (the American female sample)

**A Theoretical Model of Temptation, Monetary Intelligence, and Unethical Behavior Intentions (The American Female Sample)**



Rosenbaum 1993). High self-control individuals have less aggressive or deviant behaviors. Self-control is the poorest among people who have performed a prior act of self control.<sup>2</sup> Nordgren and Chou (2011) suggested that in a “cold” non-visceral state, the presence of temptation prompts cognition to support self-control; whereas in a “hot” visceral state, temptation prompts the same cognitive processes to support impulsive behavior. Some cold-hearted individuals seize the opportunity to become corrupt or cheat for financial gains, but do not do it impulsively to make them feel better (Tice et al. 2001).

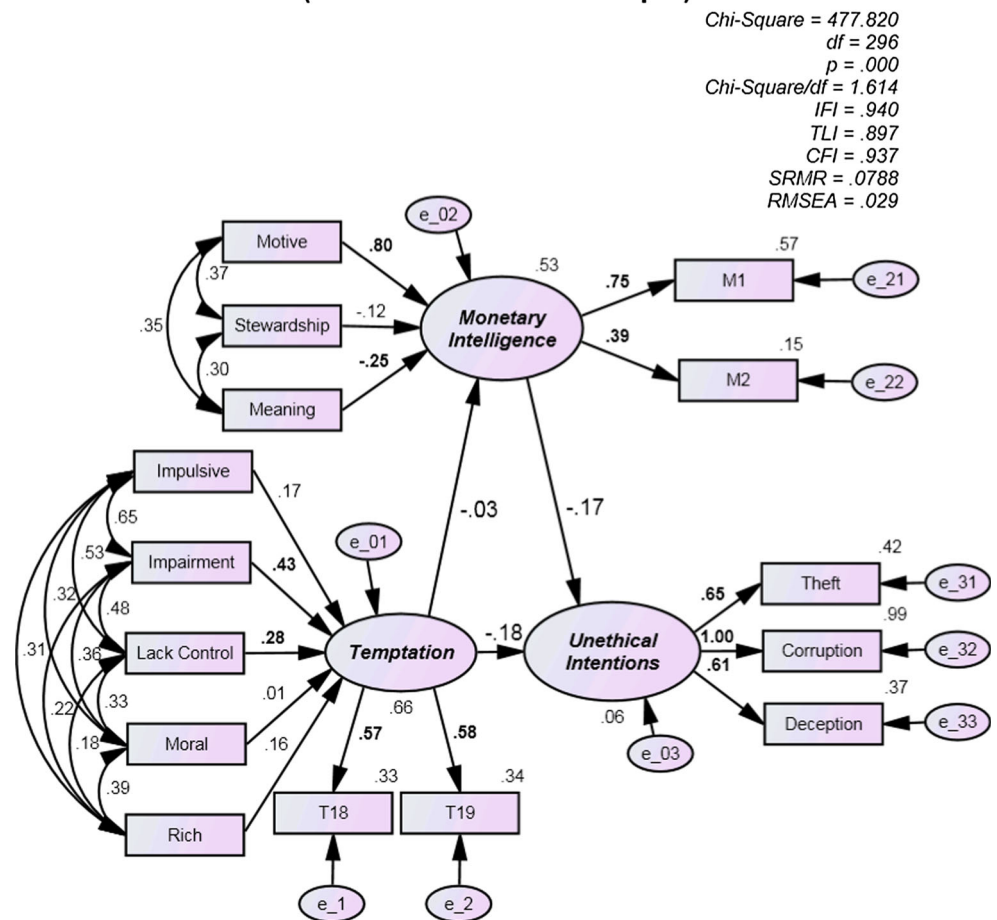
In summary, these five sub-constructs (antecedents) make independent contributions to temptation. Temptation is conceptualized as an individual’s dispositional trait. We

posit that individuals have high desire to become rich, seek instant gratification, experience high cognitive impairment, follow the social norm, and have a low level of self-control are likely to fall into temptation. In their SEM results, Tang and Sutarso (2013) proposed the two faces of temptation—a direct path and an indirect path, simultaneously. First, counter-intuitively, a negative direct path between temptation and unethical intentions suggests that those who fall into temptation (with high cognitive impairment and lack of self-control) have low unethical intentions. In other words, these cold-hearted individuals who engage in unethical behaviors (destructive and malicious temptation) have a clear mind set and strong self-control. Second, the positive indirect path suggests that falling into temptation leads to poor MI (poor stewardship behavior, a mediator) which, in turn, leads to unethical behavior. Falling into temptation leads individuals to “many foolish and harmful desires” which lead to unethical intentions and behaviors. The temptation construct or trait (“good/bad apples”) is related to individuals’ unethical intentions and behaviors.

<sup>2</sup> Now the serpent was the most cunning of all the animals that the Lord God had made. The serpent asked the woman, “Did God really tell you not to eat from any of the trees in the garden?” The woman answered the serpent: “We may eat of the fruit of the trees in the garden; it is only about the fruit of the tree in the middle of the garden that God said, ‘You shall not eat it or even touch it, lest you die.’” But the serpent said to the woman: “You certainly will not die!” (Genesis 3:1–4).

**Fig. 5** Results of our theoretical model (the Chinese male sample)

**A Theoretical Model of Temptation, Monetary Intelligence, and Unethical Behavior Intentions (The Chinese Male Sample)**



**Unethical Behavior Intentions**

Researchers cannot directly measure managers’ actual unethical behaviors performed in private, except in formal criminal investigations and laboratory experiments. People are willing to provide accurate information for specific questions in an anonymous survey (Richman et al. 1999; Schoorman and Mayer 2008). The convergence of the incumbent’s self-report and others’ peer-report on counterproductive behavior suggests that self-reported unethical intention is a reasonable surrogate measure of behavior (De Jonge and Peeters 2009; Fox et al. 2007).

Among workplace deviance (Bennett and Robinson 2000), counterproductive behavior (Cohen-Charash and Spector 2001; Spector and Fox 2010), corruption, and misbehavior, researchers have examined people’s propensity to engage in unethical behaviors (PUB) (Chen and Tang 2006; Tang and Chiu 2003) a subset of organizational deviances (Robinson and Bennett 1995). This PUB construct involves the misuse of position, power, or authority for personal or organizational gain (receiving

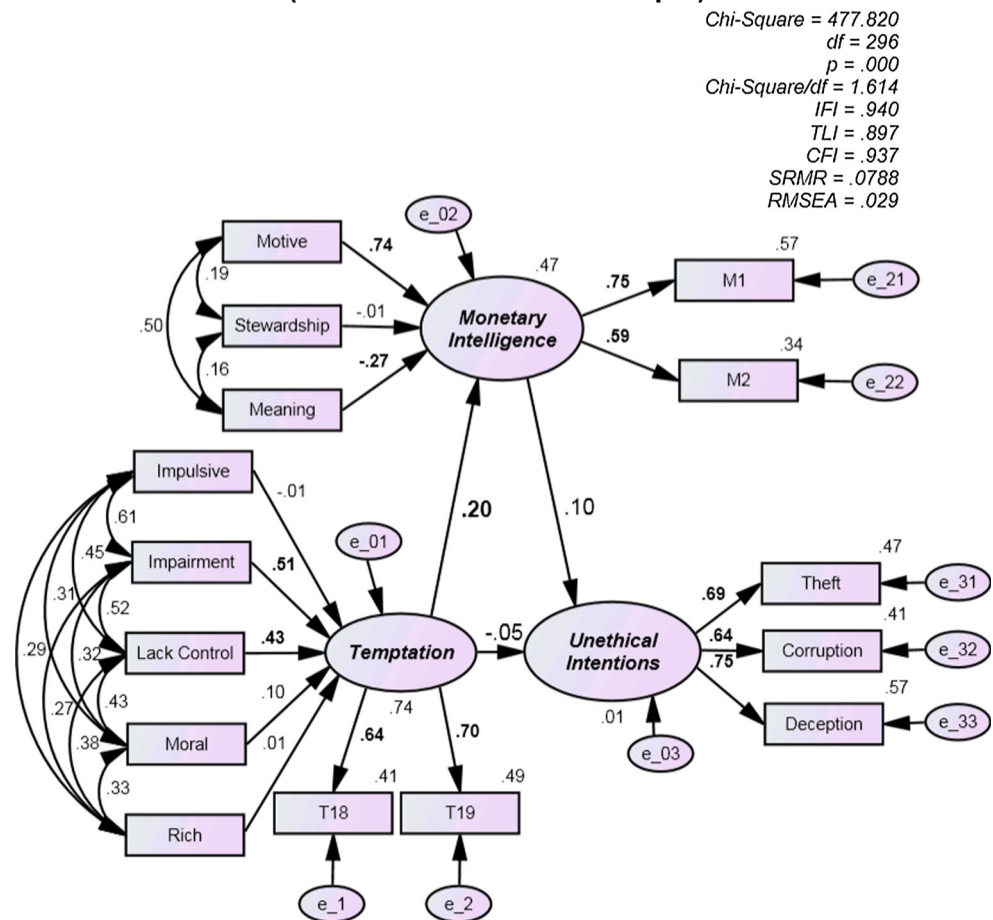
gifts, money, bribery, and kickbacks); acts committed against the company due to unfair treatment (sabotage and theft); acts conducted on behalf of the organization (lay off employees to save the company money and increase one’s personal bonus), and deception (bait and switch and cheating for personal gain). This construct (PUB) has been tested empirically in China (Du et al. 2007), Hong Kong (Tang and Chiu 2003), Macedonia (Sardzoska and Tang 2012), the US (Piffa et al. 2012), and more than 31 geopolitical entities/countries across six continents (Tang et al. 2011, 2013a) and cited in review articles (e.g., Kish-Gephart et al. 2010) and textbooks (Bateman and Snell 2013). We turn to the multiple impacts of temptation on unethical intentions and the direct and indirect paths of our model next.

**Temptation to Unethical Behaviors (Path 1)**

We assert that scandals, corruption, and unethical behaviors are “not” accidents or honest mistakes and are not caused by people’s *cognitive impairment* and *lack of self-*

**Fig. 6** Results of our theoretical model (the Chinese female sample)

**A Theoretical Model of Temptation, Monetary Intelligence, and Unethical Behavior Intentions (The Chinese Female Sample)**



*control*. Those who have a clear mind and strong self-control do not fall into temptation. Their maliciously controlled motive leads them to engage in unethical acts and obtain financial gains. They do it “on purpose”. For example, Bernard Madoff’s massive Ponzi scheme (\$50 billion fraud or “one big lie”) was not an accident or honest mistake (Voreacos and Glovin 2008). High LOM individuals have high Machiavellianism (Christie and Geis 1970), high risk tolerance (Tang et al. 2008a), and high unethical intentions. Males tend to be less ethical and more likely to engage in unethical behaviors than females (Hoffman 1998; Tang and Chen 2008). The impact of temptation on unethical intentions is stronger for males than for females (Tang and Chen 2008; Tang and Sutarso 2013). Intentional (malicious) intent is related to unethical intentions. In other words, those who engage in unethical behavior are in a “hot” visceral state (cf. Nordgren and Chou 2011). We test Hypothesis 1 below.

**Hypothesis 1** Temptation is directly and negatively related to unethical intentions.

### Monetary Intelligence (MI)

Among numerous money-related constructs (Furnham and Argyle 1998; Mitchell and Mickel 1999; Srivastava et al. 2001; Yamauchi and Templer 1982), the Money Ethic Scale (MES, Tang 1992; Tang 1993) or the LOM construct, a subset of MES (Tang and Chiu 2003; Tang and Chen 2008; Tang et al. 2006, 2011) has become one of the most cited and *systematically* used money attitudes in the literature. This construct is mildly related to materialism (Belk 1984; Tang et al. 2013a), is related to a *winner-take-all mentality*—the Matthew effect (Merton 1968; Tang 1996),<sup>3</sup> and predicts voluntary turnover (Tang et al. 2000) and unethical behavioral intentions in cross-sectional studies (Tang and Chiu 2003) and multiple-wave panel studies (Tang and Chen 2008; Tang and Liu 2012). This construct has been substantiated in empirical studies across

<sup>3</sup> To anyone who has, more will be given, and he will grow rich; from anyone who has not, even what he has will be taken away (Matthew 13:12).



almost three dozen entities around the world (Gbadamosi and Joubert 2005; Lim and Teo 1997; Nkundabanyanga et al. 2011; Tang et al. 2006, 2011, 2013a; Vitell et al. 2006; Wong 2008) and cited in influential reviews (Kish-Gephart et al. 2010; Lea and Webley 2006; Mickel and Barron 2008; Mitchell and Mickel 1999; Zhang 2009) and in numerous books (Colquitt et al. 2013; Furnham and Argyle 1998; McShane and Von Glinow 2013; Milkovich et al. 2014; Rynes and Gerhart 2000).

MI (money smart) is a multi-dimensional individual difference variable with three sub-constructs: people's perceptions of their ability to (1) appraise the LOM motive (affective: rich, motivator, and importance), (2) regulate money-related intentions or behaviors (behavioral: make, budget, donate, and contribute), and (3) prioritize its cognitive importance (cognitive: respect, achievement, and power). On the basis of 6,586 managers in 32 geopolitical entities across six continents, Tang et al. (2013c) showed that money smart (high MI) managers simultaneously focus on their intellectual virtues of prudence and "fulfillment"—enhancing stewardship behavior (the works) and "contentment"—reducing affective motive (LOM) and keeping cognitive meaning in perspective which are associated with enviable higher pay satisfaction than life satisfaction. GDP per capita is related to life satisfaction, but not to pay satisfaction; while income is related to both. These findings suggest that money smart people tend to have high satisfaction with pay and life because they have low (negative) LOM motive (Tang et al. 2013c). Further, temptation is related to poor MI (negative stewardship behavior) which, in turn, leads to unethical intentions (Tang and Sutarso 2013). The antecedents and consequences of MI vary due to different outcome variables examined in these studies (i.e., satisfaction with pay and life vs. unethical intentions, respectively).

#### Monetary Intelligence (MI) as a Mediator

##### *Temptation to MI (Path 2)*

Falling into temptation causes people to focus on selfish goals, spend their money spontaneously, and become poor stewards of money (Tang and Sutarso 2013; Tang et al. 2013b). People lose track of their self-control, become cognitively impaired, and spend their money impulsively. Materialistic consumers tend to experience the dark side of financial dream (Arndt et al. 2004; Kasser and Ryan 1993; Tang et al. 2013a), high debt, high financial worries, low money-management skills, and a great tendency toward compulsive buying and over spending (Gardarsdottir and Dittmar, 2012). That is why the US saving rates dropped to all time low at "−0.5 %" in 2006, since the Great Depression. Only 14 % of Americans have confidence in

their ability to retire comfortably. University students with greater debt reported greater stress and decreased financial well being (Norvilitis et al. 2006). Those with financial hardship are obsessed with money and want to become rich (Lim and Teo 1997). Choices made after losses are *riskier* than those after gains (Gehring and Willoughby 2002; Jia et al. 2013). Following a vicious cycle; falling into temptation leads to poor MI—poor stewards of money and possibly strong affective motive (LOM) or aspiration for money.

**Hypothesis 2** Temptation is related to poor MI.

##### *MI to Unethical Intentions (Path 3)*

Money is often associated with achievement and recognition, status and respect, freedom and control, and power (Tang 1992). Those who consider money as a sign of their achievement have low satisfaction with pay and life (Fishbach et al. 2003; Srivastava et al. 2001; Tang 1992, 2007). Pay dissatisfaction causes people to become corrupt in the name of justice (Greenberg 1993), equity (Gino and Pierce 2009), revenge (Ashforth and Anand 2003), or retaliation (Skarlicki and Folger 1997). The presence of money triggers the *emotion* of *envy* and activates feelings of *self-sufficiency* (Vohs et al. 2006). Seeing green (money) triggers a business decision frame and unethical outcomes (Kouchaki et al. 2013). Exposure to "dirty money" lowered moral standards and reduced positive attitudes toward fairness and reciprocity (Yang et al. 2013). Those who manage their money carefully (Dew and Xiao 2011; Mickel et al. 2003) have high satisfaction with pay and life (Tang et al. 2013c), whereas those who do not have low fulfillment, many foolish and harmful desires, and high unethical intentions (Tang and Chiu 2003). Love of money predicts unethical intentions in cross-sectional studies and multiple panel experiments (Tang and Chen 2008; Tang and Liu 2012). Taken together, MI is a mediator of the temptation to unethical intentions relationship. The suppression effect exists when the indirect effect has the opposite sign of the direct effect (Shrout and Bolger 2002). We present Hypothesis 3 below.

**Hypothesis 3** MI is related to unethical intentions.

#### Culture

People in individualistic cultures are primarily concerned with their own interests and the interests of their immediate family, whereas those in collectivist cultures belong to various in-groups (Hofstede 1991). "Face" is conceptualized as individuals' cognitive response to social evaluation of their conduct in a particular situation in the Chinese culture. According to Hwang (2006), social face is gained

through status achieved or the status ascribed by one's consanguineous relationships, whereas moral face is related to social evaluation of one's integrity of personality. "An individual may choose not to strive for social face, but must protect moral face in all situations" (Hwang 2006, p. 227). Chinese college students feel that they "have face" the most when they do well in their academic performance, followed by being morally upright. However, people may have a more intense feeling of "having no face" in incidents of *negative morality* than in incidents of *negative achievement* (Hwang 2006). American students adopt a consistent standard to judge the wrongness of violating laws regardless of their relationships with the transgressor. However, students in Taiwan tend to judge the same violation differently—more lenient toward the misconduct of parents to save face but more harsh toward their children to discipline them and other people outside the family. Due to cultural differences (Hofstede 1991), Chinese have a higher concern for their moral face, perceived surveillance, experimenter interests, and respect for teachers (Tang and Baumeister 1984; Zhong et al. 2010) than Americans (Ho 1976; Hui and Bond 2009). Chinese students have lower unethical behavior intentions or behaviors than their American counterparts to avoid "having no face" in school and/or experiencing guilt and shame in the culture (Bedford 2004; Fung 1999). Thus, the negative (dark) impact of temptation on unethical behavior is smaller for Chinese students than for American students.

**Hypothesis 4** The negative impact of temptation on unethical intentions is stronger for American students than for Chinese students.

## Method

### Procedure

We conducted this study at a regional state university in the southeastern US with about 950 full-time faculty and 26,000 students. The College of Business, with over 100 faculty members, 3,000 undergraduate and 300 graduate students, is accredited by AACSB-International. This research project was approved by the university's Institutional Review Board. The principle investigator and graduate and undergraduate assistants completed one short online training course and followed all ethical standards and procedures in treating human subjects. Students' confidentiality was assured. Junior and senior students in the principles of management course, offered by the Department of Management and Marketing, completed a series of one-page surveys "in class" (with about 90 students). We used students' full name to match these nine-panel survey

data and incorporated them as a part of students' in-class participation course grades. All these measures were distributed to students about 2 weeks apart in a 16-week semester. Some were measured at multiple times. We collected data from 492 students (male = 309, 62.8 %; female = 181, 37.2 %).

We followed similar procedures, adopted the questionnaire validated in the Chinese context (Tang and Chiu 2003; Tang et al. 2006, 2011, 2013b), or followed the multi-stage translation/back-translation procedure to develop the Chinese version using a focus group (professors and graduate students), and collected data from 256 juniors (male = 98, 38.3 %; female = 158, 61.7 %) at a highly selective university on the east coast of China. The university has 2,873 faculty members and over 43,000 students (1,500 international students, 18,000 undergraduate students, and 24,000 graduate students—including MBA and EMBA students). The College of Economics and Management offered junior courses to students from the Engineering School. We measured temptation, MI, and unethical intention twice in a semester and selected measures from different panels (at least 2 weeks apart) to avoid fatigue, memory, common method variance (CMV) bias, and enhanced the psychological separation of predictors and criteria. American and Chinese students completed surveys in regular classrooms and were fully aware of other students in the same room. Professors were blind regarding students' survey results and debriefed students at the end of the semester.

### Measures

We adopted the 15-item, 5-factor Temptation Scale (from the 48-item pool, Tang and Sutarso 2013), the 30-item, 10-factor MI Scale (Tang et al. 2013c), and three sub-constructs (theft, corruption, and deception) of the 15-item, 5-factor Propensity to engage in Unethical Behavior Scale (PUB) (Chen and Tang 2006) (see "Appendix" section). We used a 5-point Likert scale with *strongly disagree* (1), *disagree* (2), *neutral* (3), *agree* (4), and *strongly agree* (5) as anchors for temptation and MI. For the PUB scale, we used a different set of anchors: *very low probability* (1), *low probability* (2), *average* (3), *high probability* (4), and *very high probability* (5) and provided the following instructions. If you were given the opportunity in your work environment, what is the probability that you may engage in these activities. We collected demographic variables (gender and age). We used the following criteria for configural invariance (passing 5 out of 6 criteria): (1)  $\chi^2$  and degrees of freedom ( $\chi^2/df$ ), (2) incremental fit index (IFI > 0.90), (3) Tucker–Lewis Index (TLI > 0.90), (4) Comparative Fit Index (CFI > 0.90), (5) standardized root mean square residual (SRMSR < 0.10), and (6) root mean

**Table 1** Mean, standard deviation, Cronbach's alpha, composite reliability, and correlations of variables (Study 1)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Age	22.32	4.58										
2. Sex (male %)	0.54	0.50	0.09*									
3. Temptation	3.57	0.54	-0.10**	0.00								
4. T-spontaneous	3.66	0.70	-0.08*	0.00	0.78**							
5. T-impaired	3.22	0.85	-0.05	0.00	0.76**	0.51**						
6. T-control	3.50	0.79	-0.04	0.02	0.79**	0.55**	0.56**					
7. T-moral	3.70	0.65	-0.13*	-0.01**	0.65	0.42**	0.31**	0.38**				
8. T-rich	3.77	0.73	-0.10*	-0.02	-0.64**	0.38**	0.27**	0.33**	0.35**			
9. MI	3.55	0.46	0.07	0.14**	0.19**	0.17**	0.17**	0.17**	0.10**	0.08*		
10. Unethical	1.65	0.67	-0.21**	0.03	0.02	-0.05	-0.01	0.01	0.08*	0.05	-0.04	
Cronbach's $\alpha$					0.80	0.55	0.74	0.73	0.43	0.70	0.86	0.89
Composite reliability					0.80 <sup>†</sup>							

*N* = 748

*MI* monetary intelligence

<sup>†</sup> Composite reliability for temptation (reflective model, Fig. 1) = [(sum of standardized loading)<sup>2</sup>/((sum of standardized loading)<sup>2</sup> + sum of indicator measurement error)]. [Indicator measurement error = 1 - (standardized loading)<sup>2</sup>]

\* *p* < 0.05

\*\* *p* < 0.01

square error of approximation (RMSEA < 0.10) (Vandenberg and Lance 2000). We achieve metric invariance when the differences between unconstrained and constrained multi-group confirmatory factor analyses are not significant ( $\Delta$ CFI,  $\Delta$ RMSEA  $\leq$  0.01, Cheung and Rensvold 2002). Table 1 shows mean, standard deviation, and correlations of major variables for the whole sample and Cronbach's alpha (0.80) and composite reliability (0.80) for temptation.

#### Reflective vs. Formative

For *reflective* and *formative* models (Edwards and Bagozzi 2000), paths emanating from a miss-specified construct may lead to Type I errors, whereas paths leading to a miss-specified construct may lead to Type II error (Jarvis et al. 2003; MacKenzie et al. 2005, 2011). We compare reflective and formative models of temptation. To achieve *model identification*, a formative construct must emit paths to (1) at least two unrelated latent constructs with reflective indicators, (2) at least two theoretically appropriate reflective indicators, or (3) one reflective indicator and one latent construct with reflective indicators (Jarvis et al. 2003). We included two theoretically appropriate reflective indicators for our reflective and formative models (Fig. 1, items 16 and 17, "Appendix" section). Our formative model of temptation "avoids" the shortcomings of formative models and replaces formative measures with facet constructs and multiple reflective measures (cf. Edwards 2011, p. 384; Fig. 6). A construct is "nothing more than a

label for its dimensions considered collectively" (p. 384). For a reflective (formative) model, the direction of the relationship flows from the temptation (sub-constructs) to sub-constructs (temptation). For our SEM model, we select two outcomes (Fig. 3, T18 and T19) and two additional constructs for temptation: MI (formative) and unethical intentions (PUB) (reflective). Our two outcomes of MI (Fig. 3, M1 and M2; see "Appendix" section, items 31 and 32) were different from that of Tang and Sutarso's (2013): Machiavellianism.

#### Results

##### The Temptation Scale (Reflective vs. Formative)

Our formative model of temptation (Fig. 2; Table 2: Model 6) for the whole sample (the US and China combined) was (slightly) better than the reflective model (Fig. 1, Model 1), based on the differences between these two models (significant for  $\Delta\chi^2/\Delta$ df = 99.6675/10; but non-significant for  $\Delta$ CFI = 0.0089 and  $\Delta$ RMSEA = 0.00). For our reflective model of temptation, we presented the sub-constructs below according to the descending order of factor loadings: impulsive behavior (0.88), cognitive impairment (0.83), lack of self-control (0.75), social moral values (0.47), and getting rich (0.33). All factor loadings were significant including the two outcomes of temptation: T16 (0.72) and T17 (0.72). For the formative model, correlations among all these five sub-constructs were low (< .80). Impulsive behavior (0.48), cognitive impairment (0.34), and lack of self-control (0.21)

contributed positively to temptation, whereas social moral values ( $-0.11$ ), and getting rich ( $-0.07$ ) contributed negatively to temptation. The negative contribution from social moral values to temptation may be explained by the following item: temptations presented positively (the Ten Commandments, honor code) reduce cheating and lying. These negative sub-constructs contributed to temptation were not significant. Temptation was strongly related to the two outcomes: T16 (0.79) and T17 (0.80).

We achieved configural (factor structure) invariance and metric invariance (factor loading) for our reflective (Models 2–5) and formative models (Models 7–10) across cultures. Our reflective model of temptation at Time 1 was significantly related to that at Time 2 (0.43) for the whole sample (Table 2, Model 11). Due to our longitudinal multiple-panel data, CMV should *not* be a concern (Podsakoff et al. 2003; Spector 2006). Our Harman’s single-factor test, which examined the *unrotated* factor solution involving 57 items and all three variables of interest in an exploratory factor analysis (EFA), identified 14 factors with eigenvalue greater than one. We listed the scale and amount of variance explained (total = 64.34 %) below: MI (13.25 %), PUB (10.45 %), temptation (8.62 %), MI (5.14 %), MI (4.49 %), MI (3.55 %), and other items with

cross-loadings (3.00, 2.90, 2.64, 2.32, 2.19, 2.05, 1.94, and 1.80 %), respectively. No single factor accounted for the majority of the covariance in the independent and criterion variables. CMV was not a concern in this research.

#### Our Theoretical Model

RMSEA tends to over-reject a true model due to “small sample size” and “model complexity” (Tang et al. 2006, p. 446). To maintain a large sample size to item ratio and reduce model complexity for the whole sample and subsequent multi-group analyses across cultures, we established a *parsimonious* model using 5 parcels for temptation with 2 outcome items, 3 parcels for MI with 2 outcome items, and 3 parcels for unethical intentions. The sample size to item ratio was 50 ( $748/15 = 49.87$ ).

*The Whole Sample* Our results (Table 2: Model 12) revealed that temptation was not significantly related to unethical intentions (Path 1 =  $-0.01$ ,  $p = 0.757$ ). Hypothesis 1 was not supported. Our significant, *positive* indirect path suggested that a high level of temptation (high cognitive impairment and lack of self-control) was related to poor MI (high LOM motive but low cognitive meaning)

**Table 2** CFA results (Study 1)

Model	$\chi^2$	df	$p$	$\chi^2/df$	IFI	TLI	CFI	SRMR	RMSEA	Models	$\Delta CFI$	$\Delta RMSEA$
<b>Temptation—reflective model</b>												
1. Whole (The US + China)	337.29	114	0.000	2.96	0.93	0.92	0.93	0.04	0.05			
Configural invariance												
2. The US	273.14	114	0.000	2.40	0.93	0.92	0.93	0.05	0.05			
3. China	204.99	114	0.000	1.80	0.92	0.91	0.92	0.06	0.05			
Metric invariance												
4. Multi-group	418.01	228	0.000	2.10	0.93	0.92	0.93	0.06	0.04			
5. Multi-group + constrain	525.24	238	0.000	2.21	0.92	0.90	0.92	0.05	0.04	5 vs. 6	0.01	0.00
<b>Temptation—formative model</b>												
6. Whole	282.64	104	0.000	2.96	0.93	0.92	0.93	0.04	0.05			
Configural invariance												
7. The US	237.63	104	0.000	2.28	0.94	0.92	0.94	0.04	0.05			
8. China	159.70	104	0.000	1.53	0.95	0.94	0.95	0.06	0.05			
Metric invariance												
9. Multi-group	397.37	208	0.000	1.91	0.95	0.93	0.94	0.04	0.03			
10. Multi-group + constrain	443.80	218	0.000	2.04	0.94	0.92	0.93	0.05	0.04	9 vs. 10	0.01	0.01
11. Temptation test–retest reflective model	1,388.13	516	0.000	2.68	0.90	0.89	0.90	0.05	0.05			
<b>SEM (temptation, MI, unethical intentions)</b>												
12. Whole	309.51	74	0.000	4.18	0.93	0.89	0.93	0.07	0.07			
13. Multi-group (US China)	269.80	148	0.000	1.82	0.96	0.94	0.96	0.03	0.03			
14. Multi-group (US China $\times$ gender)	477.82	296	0.000	1.61	0.94	0.90	0.94	0.03	0.03			

Sample size: whole = 748, the US = 492, China = 256

(Path 2 = 0.215,  $p < 0.001$ ) that, in turn, was related to low unethical intentions (Path 3 =  $-0.186$ ,  $p < 0.001$ ) (all significant results in Figs. are printed in bold face). Hypotheses 2 and 3 were supported. Since we had data from both the US and China, our results were different from that of Tang and Sutarso (2013).

Due to the direct and indirect paths and multiple faces of temptation, the overall impact from temptation to unethical intentions was negative: The standardized total impact ( $-0.054$ ) was the sum of the direct impact ( $-0.014$ ) and the indirect impact [ $-0.040 = (0.215) \times (-0.186)$ ] suggesting that carefully controlled malicious temptation creates a dark impact on unethical intentions in the whole sample. The independent contributions of all five sub-constructs to temptation were as follows: cognitive impairment (0.53), lack of self-control (0.34), impulsive behavior (0.12), social moral values (0.03), and getting rich (0.05). Affective motive (0.86), cognitive meaning of money ( $-0.35$ ), and stewardship behavior (0.08) contributed to MI. Regarding unethical intentions, deception (0.80), theft (0.79), and corrupt intent (0.77) were all prevalent.

**Multi-group Analysis Across Culture** For the US sample, multi-group analysis across culture revealed some interesting results (Table 2: Model 13). Path 1 was not significant ( $-0.071$ ,  $p = 0.187$ ), Hypothesis 1 was not supported. For the indirect path, both Path 2 (0.217,  $p < 0.001$ ) and Path 3 (0.126,  $p < 0.032$ ) were significant, supporting Hypotheses 2 and 3. MI was a mediator. Notice that the sign of Path 3 in this analysis was positive for American students but negative for the whole sample. The standardized total impact from temptation to unethical intention was negative [total impact ( $-0.044$ ) = direct impact ( $-0.071$ ) + indirect impact ( $0.027 = 0.217 \times 0.126$ )]. American students' malicious temptation has a dark impact on unethical intentions. Corrupt intent (0.87) had the strongest factor loading, followed by deception (0.76) and theft (0.72). The motive (0.91,  $p < 0.001$ ) and cognitive meaning contributed significantly ( $-0.32$ ,  $p < 0.001$ ) to MI.

For the Chinese sample, all three paths failed to reach significance (Path 1 = 0.068,  $p = 0.386$ ; Path 2 = 0.054,  $p = 0.463$ ; Path 3 =  $-0.091$ ,  $p = 0.386$ , respectively). The standardized total impact from temptation to unethical intention was positive [total (0.063) = direct (0.068) + indirect ( $-0.005 = (0.054) \times (-0.091)$ )]. The factor loadings were corrupt intent (0.80), deception (0.67), and theft (0.66). Results support Hypothesis 4. Thus, temptation is significantly related to unethical intentions indirectly for American students (62.8 % male), but not for Chinese students (38.3 % male) at all.

**Multi-group Analysis Across Culture and Gender** Due to gender differences (Tang and Sutarso 2013), we explored both culture and gender using a multi-group analysis

(Table 2: Model 14). Among these four groups [American male ( $n = 309$ ), American female (183), Chinese male (98), and Chinese female (158)], only American male had a significant negative direct path and a positive indirect path (Fig. 3): Not falling into temptation led to unethical intentions directly, whereas falling into temptation also led to unethical intentions indirectly through poor MI, supporting Hypotheses 1, 2, and 3, and Tang and Sutarso's two faces of temptation. For American females, only Path 2 was significant (Fig. 4). For Chinese males, all paths failed to reach significant (Fig. 5) due to small sample size. For Chinese females, only Path 2 was significant (Fig. 6). Females American and Chinese students do fall into temptation and have poor MI, but they do not show unethical intentions. We listed the total impacts below: American male ( $-0.115$ ), American female ( $-0.092$ ), Chinese male ( $-0.176$ ), and Chinese female ( $-0.028$ ). Temptation predicts unethical intentions for students in the US (male students only), but not in China (neither males nor females).

## Study 2

Our survey results of Study 1 revealed that temptation is a predictor of unethical intentions for American male sample only, but not for the female sample. Temptation is not related to unethical intentions directly or indirectly for the Chinese sample. It is possible that Chinese students have low unethical intentions because they complete the survey in open classrooms where it may cause them to "have no face". In Study 2, we have a two-fold purpose. First, we explore the extent to which Chinese students display different patterns of cheating behavior in an open classroom (Experiment 1) and in private cubicles of a laboratory (Experiment 2) when the temptation of making additional money exists. Second, the LOM motive contributes significantly to MI for both American and Chinese students. Using money as a temptation, we test the relationship between LOM motive and actual cheating behavior.

**Hypothesis 5** Chinese students in open classrooms (Experiment 1) cheat much less than those in private cubicles of a laboratory (Experiment 2).

**Hypothesis 6** Using money as a temptation, the LOM motive predicts cheating behavior.

### Experiment 1

#### Participants

We obtained valid data from 29 junior undergraduate students in two required management courses for course credits, offered by the College of Economics and

Management to students who just transferred from the Engineering School, in the same Chinese university. Students' age varied from 20 to 24 ( $M = 20.93$ ,  $SD = 1.22$ ) and were mostly male (55.2 %). Although all participants can see each other in a regular classroom, the experimenter, a female graduate student, asked them *not* to seat too closely together and not to talk to each other during the experiment, similar to the situation in classrooms (Study 1).

### Task

We adopted the matrix task. For each matrix, students have to find two three-digit numbers (from a set of 12) that add up to 10. This matrix task is good in cheating experiment (Mazar et al. 2008). It is a search task. Although it may take some time to find the right answer, once found, the respondents can unambiguously evaluate whether they have solved the problem correctly without the need for a solution sheet and the possibility of a hindsight bias (Fischhoff and Beyth 1975). Further, in a pilot study, Chinese students did not consider this task as a measure of their math ability or intelligence. We adopted carbonless copy paper method to measure possible cheating behavior (Ruedy and Schweitzer 2011) which has several advantages over prior measures of unethical behavior: First, it measures intentional act that cannot be misattributed to inattention or mistakes. Second, it records unethical actions at the individual level in an inconspicuous manner. Third, it can be administered to a group.

### Procedure

The experimenter stated that all students had an opportunity to earn ¥1 (Chinese Yuan/RMB or, USD\$0.16) for each correct answer on a matrix task. In Step 1, she asked participants to complete a survey questionnaire: LOM (the affective component of MI), similar to Study 1: three items for factor rich ("Appendix" section), two items for factor motivator (I am motivated to work hard for money and I am highly motivated by money), and two items for factor importance (money is valuable and money is important). In Step 2, the female experimenter announced that students had 3 min to solve these 20 matrices which were stapled on a folder. At the end of the 3 min, a timer sounded. The experimenter stated that due to insufficient time, all participants must stop working on the task and detach the first matrices sheet (regular paper) from the folder. She collected students' survey results and the folders which, unbeknownst to participants, contained an imprint of participants' original work of the first matrix task on the second matrix task (carbonless copy paper) stapled at all four corners on the folder. The experimenter gave each participant the scoring key, asked them to score their own work, and did not monitor

the activities. Students reported the number of correct answers for payment without submitting the first matrices sheet to the experimenter. Researchers identified the differences between (1) the reported correct answers for payment and (2) the true performance on the imprints of carbonless copy paper—the amount of cheating, and debriefed the students at the end of the semester.

### Results

Among 29 participants, only four (13.8 %) cheated at least one item on the task. Their cheating amount ranged from 1 to 5 items. The mean of their cheating was 0.41 ( $SD = 1.21$ ). Among 13 females, only two (15.4 %) cheated. Among 16 males, two (12.5 %) cheated. There was no significant difference in cheating between females and males [ $\chi^2(1) = 0.44$ ,  $p > 0.10$ ].

### Experiment 2

#### Participants and Procedure

We obtained data from 58 undergraduate students in Engineering School of the same Chinese university [age ranged from 18 to 29 ( $M = 21.14$ ,  $SD = 2.05$ ), male = 72.4 %]. All 22 private cubicles in the laboratory face the front of the room where the experimenter offers instructions, similar to a regular classroom. Due to partitions in all three directions and a door at the eye-level, a student in one private cubicle cannot see other students *clearly* (except a part of other students' head). In each session, a graduate female experimenter announced to about 8 to 10 students in the laboratory that they would receive (1) ¥5 (USD\$0.80) for their participation in this study and (2) an opportunity to earn ¥1 (USD\$0.16) for each correct answer on a matrix task. Students in Experiment 2 performed the exact same experimental tasks as those in Experiment 1, independently in private cubicles.

### Results

Among 58 participants in the laboratory experiment, 31 (53.4 %) cheated. Their cheating ranged from 1 to 6 items. The mean of their cheating amount was 1.59 ( $SD = 1.97$ ). Among 16 females, 11 (68.8 %) cheated. Among 42 males, 20 (47.6 %) cheated. No significant differences in cheating between females and males existed [ $\chi^2(1) = 2.08$ ,  $p > 0.10$ ]. We analyzed our data from both experiments further, below.

#### Comparisons of Experiment 1 and Experiment 2

First, there was a significant difference in cheating between Experiments 1 and 2 [ $\chi^2(1) = 12.64$ ,  $p < 0.001$ ]. The

**Table 3** Mean, standard deviation, correlations, and Cronbach's alpha among variables among Chinese students (Study 2)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Age	21.07	1.81									
2. Gender (male %)	0.67	0.47	−0.05								
3. LOM	3.84	0.55	−0.03	0.21 <sup>†</sup>							
4. Rich	3.85	0.65	−0.00	0.30**	0.85**						
5. Motivator	3.82	0.69	0.02	−0.01	0.76**	0.43**					
6. Importance	3.84	0.71	−0.10	0.17	0.81**	0.53**	0.50**				
7. True performance	12.33	4.39	0.09	0.18 <sup>†</sup>	−0.03	0.07	−0.14	−0.04			
8. Cheating (amount)	1.20	1.83	0.05	−0.09	0.18 <sup>†</sup>	0.22*	0.16	0.03	0.01		
9. Cheating (%)	0.08	0.13	0.00	−0.16	0.19 <sup>†</sup>	0.19 <sup>†</sup>	0.25*	0.03	−0.19 <sup>†</sup>	0.93**	
Cronbach's $\alpha$					0.79	0.68	0.58	0.59			

*N* = 87

<sup>†</sup>  $p < 0.10$

\*  $p < 0.05$

\*\*  $p < 0.01$

amount of cheating in Experiment 1 ( $M = 0.41$ ,  $SD = 1.21$ ) was significantly less than that in Experiment 2 (1.59, 1.97) [ $t(85) = 3.43$ ,  $p < 0.001$ ]. Hypothesis 5 was supported. Students in Experiment 1 had significantly lower true performance ( $M = 9.38$ ,  $SD = 3.94$ ) than those in Experiment 2 ( $M = 13.81$ ,  $SD = 3.84$ ) [ $t(85) = 5.03$ ,  $p < 0.001$ ]. We generated a cheating percentage (cheating divided by sum of true performance and cheating). The percentage of cheating in Experiment 1 was lower ( $M = 0.046$ ,  $SD = 0.13$ ) than that in Experiment 2 ( $M = 0.098$ ,  $SD = 0.12$ ) [ $t(85) = 1.82$ ,  $p < 0.10$ ]. Since there were no significant differences in students' affective motive and its factors between Experiments 1 and 2, we combined these two samples together. Table 3 shows that the overall LOM was mildly related to the percentage of cheating ( $p < 0.10$ ). Factor Rich was significantly correlated with the amount of cheating ( $p < 0.05$ ) and mildly related to the percentage of cheating ( $p < 0.10$ ). Factor motivator was significantly correlated with the cheating percentage ( $p < 0.05$ ). Hypothesis 6 was supported. The sum of true performance and cheated amount was around 13.53. Students earned about ¥13.53 (US\$2.00).

## Discussion

In Study 1, we use survey questionnaires and explore the relationship between temptation and unethical behavior, treat MI as a mediator and gender and culture as moderators based on multi-panel data collected from 748 university business students in the US and China. In Study 2, we conducted two experiments and examined Chinese students' LOM and cheating behavior: one in open classrooms

and the other in a laboratory with private cubicles. We present theoretical, empirical, and practical contributions below.

### Theoretical Contributions

First, in Study 1, the reflective model of temptation has five strong factor loadings for its sub-constructs. For the formative model, the correlations among five sub-constructs are low, suggesting that these five sub-constructs make significant, separate, and independent contributions to the overall temptation construct and are not interchangeable. Eliminating sub-constructs may change the overall construct. We also establish measurement invariance of the temptation scale across culture (the US and China) and adopt the formative model for additional data analyses.

Second, for the *positive* indirect path, people fall into temptation—lack of self-control and cognitive impairment—display poor MI (high affective motive—LOM, but low cognitive meaning of money) that, in turn, leads to *low* unethical intentions. This finding supports the “cold” non-visceral state. For the negative *direct* path, not falling into temptation—strong self-control and low cognitive impairment—is not related to unethical intentions. This is due to the combined American and Chinese samples in the SEM analysis. Our results do not support the findings of Tang and Sutarso completely, in this analysis.

Third, we find a significant positive indirect path for American students but no significant paths for Chinese students. Further, only American male students have both the negative direct path and the positive indirect path. A positive indirect path and a negative direct path lead to a

suppression effect, supporting “hot” visceral states. Because the overall impact is negative, male American students’ malicious temptation (lack of cognitive impairment and strong self-control) leads to unethical intentions. Our multiple faces of temptation for male American students support the findings of Tang and Sutarso. However, American female students and Chinese (male and female) students do not display significant direct or indirect paths in our model.

Our negative direct path and positive indirect path reflect individuals’ “reflective” and “impulsive” decision making and temptation, respectively (Hofmann et al. 2009; Loewenstein et al. 2001; Tang et al. 2013b). Female (American and Chinese) students are more likely to fall into temptation impulsively, yet their monetary intelligence (LOM) does not lead to unethical intentions. Females are more ethical than males, supporting the literature (Tang and Chen 2008).

Fourth, in Study 2, using *money* as a *temptation*, only 13.8 % (Experiment 1) and 53.4 % (Experiment 2) of Chinese students cheat. The amount and percentage of cheating are small. Chinese students’ low cheating in Study 2 supports Study 1—temptation is *not* related to unethical behavior intentions. Temptation as a trait (Study 1) and using money as a temptation (Study 2) produce similar results in our research, supporting literature (de Ridder et al. 2012).

Fifth, Chinese students have significantly lower levels of true task performance and cheating in an open classroom (Experiment 1) than those in private cubicles of a laboratory (Experiment 2). We selected Chinese participants in Study 1 and Study 2 from the same student population of a highly selective university. These students have similar abilities and aptitudes due to the same rigorous standardized national college entrance examination in China.<sup>4</sup> The difference between Experiments 1 and 2 is the environmental context: one in a regular classroom and the other in private cubicles of a laboratory which provides important implications.

First, students in Experiments 1 and 2 have similar concerns regarding perceived surveillance, experimenter interests (Tang 1987; Tang and Baumeister 1984), respect for teachers, and their desire to have not only social face but also moral face (Hwang 2006). Second, open classrooms and private cubicles serve as good and bad “barrels”, respectively, in these two experiments. Reducing surveillance of self-interests in private cubicles promotes cheating (Zhong et al. 2010). More research is needed in this area to explore the effects of contextual variables (clean and corrupt cultures, or Corruption Perceptions Index) on temptation, unethical intentions, and behaviors.

<sup>4</sup> This university is ranked as the third best university in China in some rankings (equivalent to the MIT in the US).

Third, the low amount and rate of cheating support Mazar et al.’s (2008, p. 633) notion that “people behave dishonestly enough to profit but honestly enough to delude themselves of their own integrity”. Fourth, only a few high love-of-money Chinese students (“bad apples”) cheat. Only a few “bad apples” take the advantage of the situation in “bad barrels” (low perceived surveillance).

Sixth, our counterintuitive and interesting findings reveal that students’ true performance in Experiment 1 is significantly lower than that in Experiment 2. There are several possibilities. First, due to China’s collective culture, students may focus more on *equality* than equity. Second, they may have the abilities to do well on a matrix task but no motivation to compete especially for *money* in a “classroom setting”. Third, since students in Experiment 1 participate in the experiment for course credits, making money in an experiment does not make them look good, or have face, in front of their fellow students. It is *not* desirable to cheat in order to make money.

Seventh, factor rich predicts the cheating amount, whereas factor motivator predicts the cheating percentage. Our constructs (monetary intelligence and LOM) predict unethical intentions and cheating behavior, revealing predictive validity. Our theoretical model supports the proposition that “those who want to get rich are falling into temptation” and that “the love of money is the root of all evils” and TPB.

Eighth, our findings do not completely support Tang and Sutarso’s findings but follow the same spirit. Due to different outcome items used in the SEM model (for the MI construct) and different samples and cultures, we reveal novel results. We illustrate contributions of formative models for temptation and MI in our SEM model.

Ninth, cognitive impairment and lack of self-control make the most significant contributions toward temptation. Further, affective motive contributes positively while cognitive meaning of money contributes negatively toward monetary intelligence. The antecedents and consequences of temptation and monetary intelligence may change according to the outcome variables examined in a theoretical model (Tang and Sutarso 2013; Tang et al. 2013c).

## Empirical Contributions

Our very well developed theoretical constructs match with systematically applied and highly cited measures in the literature and samples of university students in the US and China. We can’t provide counterintuitive, interesting, and novel discoveries without collecting data using good constructs and samples. We demonstrate temptation’s strong reliability (Cronbach’s  $\alpha$  and composite reliability), validity, and rigorous measurement invariance results across culture. Results enhance the generalizability of our findings and



provide confidence to future researchers in conducting cross-cultural research in under-researched areas of the world.

### Practical and Actionable Implications

Very little research has combined the fields of consumer behavior, psychology of money (monetary intelligence), and business ethics to investigate the temptation to unethical intentions and cheating relationships. When constructs—that do not normally come near one another—collide, the ultimate novelty of the solution will be greater (Amabile 1998; Tang 2010). We apply multiple lenses and provide a new, cross-disciplinary, and cross-cultural perspective by infusing theory of free will—constructs traditionally dominated by scholars in the economic psychology and consumer behavior—into the business ethics domain. We demonstrate the complexity of identifying both positive and negative paths for the whole sample and across culture using a very simple yet elegant and sophisticated theoretical model. We apply the carefully developed theory and constructs with solid psychometric properties to assess intra-personal, inter-personal, and cross-cultural differences in temptation. Future researchers may develop training programs to help people assess and understand cognitive impairment and lack of self-control aspects of temptation, money smart, unethical intentions, and other new constructs, propose possible changes to improve actionable behaviors, and enhance satisfaction in different aspects of their lives.

The self-control and cognitive thinking aspects of temptation serve as a double-edge sword because strong self-control and cognitive ability are associated with unethical intentions, but lack of self-control and cognitive impairment are related to poor monetary intelligence. Falling into (impulsive) temptation causes people to increase their aspiration for money (LOM) which leads to deviant intentions and cheating. Maliciously controlled (reflective) temptation leads to deviant intentions directly. Falling into temptation causes people to increase their aspiration for money (LOM) for female students in the US and in China.

Recent scandals are *not* caused by executives' lack of "intelligence", brains, accidents, mistakes, or cognitive impairment; but rather, by their lack of "wisdom", virtue (Feiner 2004, p. 85; Tang and Liu 2012) and by their malicious intent. Most cold-hearted executives and individuals with self-control and executive functions seize the opportunity to engage in unethical behaviors for financial gains. Alternatively, mentally challenged individuals probably cannot execute unethical acts properly. Our temptation construct as a trait is different from the trait self-control construct. Acts of self-regulation *without* rest or replenishment impair subsequent self-regulatory efforts (Baumeister 2002; Christian and Ellis 2011), as a consequence, they are more likely to yield to temptation and act

impulsively. Some are too tired to tell the truth (Mead et al. 2009). Future researchers may want to explore these constructs simultaneously and empirically.

Our results help us understand the deeper meaning of The Lord's Prayer (also called the Pater Noster or Our Father) (Tang and Sutarto 2013). This leads to one actionable implication for all of us. In order to deliver us from evil, we must remove ourselves away from "the darkness" or secrecy—a secular environment polluted with materialism, temptations, and selfish desires.<sup>5</sup> If we remove ourselves away from evil/desires, then, we do not have to face constant self-control of our desires which may lead us to temptation. The notion "lead us not into temptation" means do not "permit" us, to be tempted to sin.

We must face "the light"<sup>6</sup> (The Ten Commandments, Ariely 2008; Tang 2012)—pay attention to a sacred milieu. Religion may be one of the last resorts for teaching business ethics and promoting ethical decision making (Chen and Tang 2013; Ritter 2006; Tang and Tang 2010). It is "natural" to tell the truth and "unnatural" to tell a lie (Heney 2012). Educators, managers, and average citizens may simply adopt the following four ways to start this grand challenge by (1) praying a little more to develop a deep conversation with our God—8 min in the morning and 8 min in the evening, per day, (2) studying the faith and reading the Bible more—five more pages a day, (3) giving a little more of ourselves and donating generously—1 or 2 % more than before to our churches or charities, and (4) sharing the truth a little more and becoming an evangelist—to one more person a day than before (Sappenfield 2012). The first two deal with "love your God" and the latter two "love your neighbor" (Tang et al. 2008b). That is, to "love one another" or "love your enemies" (Chen and Tang 2013). Reciting the Ten Commandments (Ariely 2008), starting a new day with a prayer in the morning or in a business meeting, and signing "the honor code" at the beginning rather than at the end (Shu et al. 2012) may have the potential to set an ethical tenor for the event/day, enhance corporate ethical cultures, and reduce managers' unethical behavior intentions in organizations. A sea change of the ethical social norm in schools, organizations, and society, or ethical community-building, is needed to fight against unethical behaviors.

### Limitations

Although we have provided good Cronbach's alpha and composite reliability for the temptation construct, two sub-constructs of temptation have weak reliability measures.

<sup>5</sup> In the process of performing miracles, Jesus said, "Take away the stone" (John 11:39). To heal a deaf man, "He took him off by himself away from the crowd" (Mark 7:33).

<sup>6</sup> "The Lord is my light" (Psalm 27:1). See also John 8:12.

Researchers may want to enhance and fine tune these sub-constructs. Further, we collected multiple panel data with a reasonable sample size from one institution in the US and one in China. The sample size for Chinese students (male Chinese students in particular) is smaller than that for American students. In Study 2, we didn't use any personal identification and collected data in one sitting. The love-of-money is related to cheating behavior for only few students. Scholars may want to test our theoretical models in other institutions, cultures, and countries to enhance the generalizability of constructs examined in the present study.

## Conclusion

In Study 1, the *positive indirect* path suggests: Yielding to temptation—high cognitive impairment and lack of self-control—is related to poor monetary intelligence—high motive but low cognitive meaning—that, in turn, is related to high unethical intentions. Our counterintuitive *negative direct* path reveals that maliciously controlled temptation is related to deviant intentions. This pattern of results fits male students in our American sample. In the combined sample, yielding to temptation leads to low unethical intentions. In Study 2, results of our two experiments suggest that Chinese students, who have high concerns over their moral face and perceived surveillance, have significantly lower levels of task performance and cheating in a classroom setting than in private cubicles of a laboratory. Among Chinese students, a few high love-of-money individuals tend to cheat. Our counterintuitive, novel, and original theoretical, empirical, and practical contributions may spark curiosity and add new vocabulary to the conversation regarding temptation, money attitudes, consumer psychology, and business ethics.

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## Appendix

### Temptation

#### Factor 1: Impulsive/Spontaneous Behavior

1. Temptations provoke us to think and act irrationally.
2. Temptations motivate us to behave spontaneously and impulsively.
3. Temptations persuade us to follow our feelings and hearts at the moment and take action right away.

#### Factor 2: Cognitive Impairment

4. Temptations corrupt us and cause us to make inappropriate decisions.
5. Temptations control our thoughts and behaviors and prevent us from concentrating on anything else.
6. Temptations make us feel weak physically, psychologically, and spiritually.

#### Factor 3: Lack of Self-Control

7. Temptations prevent us from thinking clearly about goals, ideals, and plans.
8. Temptations weaken the control of our emotions, desires, urges, or itch.
9. Temptations cause us to lose track of our own behaviors.

#### Factor 4: Social Moral Values

10. Temptations persuade our role models (stars/CEOs) with status and power to “cave in” to them.
11. Temptations are easier to accept when our friends and peers are doing them.
12. Temptations presented positively (the Ten Commandments, honor code) reduce cheating and lying.

#### Factor 5: Getting Rich

13. Temptations are more prominent to those who want to get rich.
14. Temptations are more salient (important) to those who have a high love-of-money orientation.
15. Temptations are more powerful to those who want to take risks.

#### Consequences of Temptation—A (Reflective vs. Formative)

16. Temptations provoke us to become selfish and ignore others' needs, rights, and concerns.
17. Temptations stimulate us to get carried away and overlook (ignore) all other important matters.

#### Consequences of Temptation—B (SEM Model)

18. Temptations lead us to foolish and harmful desires that plunge men into ruin and destruction.
19. Temptations corrupt our moral beliefs or ethical standards.

#### Monetary Intelligence (MI)

#### *Affective Motive of Money*

#### Rich

1. I want to be rich.
2. It would be nice to be rich.

3. Having a lot of money (being rich) is good.

#### Motivator

4. Money reinforces me to work harder.  
5. I am motivated to work hard for money.  
6. I am highly motivated by money.

#### Importance

7. Money is valuable.  
8. Money is important.  
9. Money is good.

#### *The Behavioral Stewardship of Money*

#### Make Money

10. I find smarter and better ways of making money.  
11. I look for new and legal ways to make money.  
12. I am proud of my ability to make money.

#### Budget Money

13. I budget my money very well.  
14. I use my money very carefully.  
15. I am proud of my ability to save money.

#### Donate Money to Charity

16. I give generously to charitable organizations.  
17. I believe in charitable giving.  
18. I give money to the Church (religious organization(s)).

#### Contribute-The Matthew Effect

19. More money should be paid to people with higher quality of performance.  
20. More money should be paid to people with more talent.  
21. More money should be paid to people with higher merit (performance).

#### *Cognitive Meaning of Money*

#### Respect

22. Money makes people respect me in the community.  
23. Money helps me gain respect.  
24. Money allows me to express myself.

#### Achievement

25. Money represents my achievement.  
26. Money is a symbol of my success.  
27. Money reflects my accomplishments.

#### Power

28. Money is power.  
29. Money gives one considerable power.

30. Money controls and manipulates your behavior, when you are paid.

#### *Consequences of Monetary Intelligence—(SEM Model)*

31. Money motivates people to perform unethically.  
32. Money is a major cause of people's unethical and evil acts.

#### Unethical Behavior Intentions (PUB)

#### Theft

1. Borrow \$20 from a cash register overnight without asking.  
2. Take merchandise and/or cash home.  
3. Give merchandise away to personal friends (no charge to the customers).

#### Corrupt Intent

4. Abuse the company expense accounts and falsify accounting records.  
5. Receive gifts, money, and loans (bribery) from others due to one's position and power.  
6. Lay off employees to save the company money and increase one's personal bonus.

#### Deception

7. Overcharge customers to increase sales and to earn higher bonus.  
8. Give customers "discounts" first and then secretly charge them more money later (bait and switch).  
9. Make more money by deliberately not letting clients know about their benefits.

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