

# The Augmentation, Substitution, and Competition between Money and Self-Esteem

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## Abstract

The present research explores the relationship between money and self-esteem in decision making: augmentation, substitution, and competition. People desire for both money and self-esteem, and each constitutes an important type of utility. Money implied positive or negative information to the receivers' self-concept, and the utility of self-esteem added to the total utility derived from the money. The source of money and social comparison influenced the augmentation between money and self-esteem (Experiments 1-4). If an outcome included money and other factors producing utility of self-esteem, the abundance of one type of utility partially substituted for the lack of the other (Experiments 5). Money and self-esteem competed against each other when people had to choose between the two. Situational need for money, trait self-esteem, and the financial value of an option influenced people's choices between money and self-esteem (Experiments 6-9). This research provides an integrative perspective in understanding human choices.

**Key Words: Money, Self-Esteem, Utility, Exchange, Decision Making**

## **The Augmentation, Substitution, and Competition Between Money and Self-Esteem**

Utility is the satisfaction that people attain from an option (Bentham, 1907/1789). Money is an important type of utility in human choices. People commit effort in improving their financial well-being. In economics, money often serves as a benchmark of rational decisions (Rubinstein, 1982; von Neumann & Morgenstern, 1944). Despite its valuable role in human decision making, people frequently violate the rule of money maximization (Camerer & Thaler, 1995; Fisher & Ury, 1991; Gth, 1995; Gth, Schmittberger, & Schwarze, 1982; Roth, 1995; Thaler, 1988; Zhang & Baumeister, 2006). In psychology, research shows that people want to maintain their self-esteem (Baumeister, 1998; Crocker & Park, 2004; Greenwald, 1980; James, 1890; Steele, 1988; Taylor & Brown, 1988). Research has accumulated impressive evidence on how self-esteem shapes cognitive biases (Baumeister, 1998; Greenwald, 1980; Taylor & Brown, 1988). The present research explores how the desire for self-esteem influences people's evaluation of utility in an option and their financial choices. Recent research suggests that violations of financial rationality may be related to people's concern for their self-esteem (Zhang, 2004; Zhang & Baumeister, 2006). The present research addresses the relationship between money and self-esteem in human choices.

Money and self-esteem may augment one other. Money may indicate a person's competence (Lea & Webley, 2006; Prince, 1993; Zhang & Loewenstein, 2006). The positive information implicated in money enhances the satisfaction derived from its instrumental functioning of purchasing. Money and self-esteem may partly substitute for one another due to their common features. Both of them produce satisfaction and motivate desirable behavior (Deci, Koestner, & Ryan, 1999; Henderlong & Lepper, 2002; Kennedy & Willcutt, 1964; McGrade, 1966; Spear, 1970). Money and self-esteem may compete against each other because each of them has irreplaceable functions. People have to decide between money and self-esteem when they encounter two options: one containing more monetary utility and the other carrying more utility of self-esteem. People may choose money at the expense of utility of self-esteem, and vice versa. The present research explores factors that influence the augmentation, substitution, and competition between money and self-esteem.

### **Money**

Money is a common currency in financial transactions (Carruthers & Babb, 1996; Mishkin 1992). People need money to buy consumption goods. In modern society, people use money to satisfy their basic needs, such as feeding. They spend money on entertainment, such as traveling. They utilize money to fulfill their high-level goals, such as education. The instrumental function of money cannot be replaced by the function of self-esteem.

Money is also valued because it indicates the owners' competence (Lea & Webley, 2006; Prince, 1993; Zhang & Loewenstein, 2006). People are often paid based on their contribution. Their salaries may reflect their status in organizations. Research suggests that people pursue money partly because it implies competence and status (Goldbart, Jaffe, & DiFuria, 2003; Lim & Teo, 1997; Srivastava, Locke, & Bartol, 2001; Tang & Gilbert, 1995). Thus, the meaning of money has positive or negative implications to the receivers' self-esteem. The symbolic meaning of money builds an important connection between money and self-esteem.

### **Self-Esteem**

Self-esteem is a person's subjective evaluation of the self (Baumeister, 1998; Crocker & Park, 2004; Campbell & Sedikides, 1999; Greenwald, 1980; James, 1890; Steele, 1988; Taylor & Brown, 1988). Classic essays in psychology address the importance of self-esteem in shaping human behavior (Adler, 1924, 1930; A. Freud, 1937; S. Freud, 1926; James, 1890; White, 1957, 1959). People gain satisfaction from their positive self-image. Research shows that praise bolsters self-esteem and serves as an effective reinforcement in shaping desirable behavior (Deci, Koestner, & Ryan, 1999; Henderlong & Lepper, 2002; Kennedy & Willcutt, 1964; McGrade, 1966; Spear, 1970). Classic essays in economics also discussed pride as a type of utility (Bentham, 1907/1789; Smith, 1976/1759). Recently, the importance of self-esteem in human choices in economics has started to regain attention (Koszegi, 2006; Lea & Webley, 1997; Loewenstein, 1999). The present research addresses the relationship between utility of self-esteem and monetary utility in decision making.

### **Augmentation, Substitution, and Competition**

The present paper proposes that the relationship between money and self-esteem includes augmentation, substitution, and competition. When the utility (satisfaction) of a payment is assessed, money may imply positive or negative meanings to the receivers' self-esteem. The utility of self-esteem implicated in the payment adds to its total utility. When an option contains money and other factors that produce utility of self-esteem, the abundance of one type of utility may partially substitute for the scarcity of the other. Each of money and self-esteem has its unique functions that are not replaced by the other. When people choose between two options: one carrying more monetary utility and the other containing more utility of self-esteem, money and self-esteem compete against each other.

The source of money may influence the money's implications to the receivers' self-esteem. The results from field surveys in economics demonstrate that unemployed people are miserable even if they receive generous unemployment compensations. In other words, the money provided by the unemployment office seems to produce less satisfaction than the same amount of earned money. Furthermore, unemployment damages life satisfaction even after people's absolute income is statistically controlled (Clark & Oswald, 1994; Darity & Goldsmith, 1996; Di Tella, MacCulloch & Oswald, 2001; Frey & Stutzer, 2002). Field correlational studies also suggest that unemployment harms self-esteem (Amundson, 1994; Amundson & Borgen, 1987; Feather & O'Brien, 1986; Gurney, 1980; Sheeran & Abraham, 1994; Waters, 2000; Winiefield, Tiggemann, & Winefield, 1992; Zhang & Loewenstein, 2006). The augmentation between money and self-esteem suggests that unemployment threatens people's self-esteem, and the disutility of self-esteem reduces the satisfaction derived from unemployment compensations. The present research tests directly the idea that the source of money may produce utility or disutility of self-esteem. It also examines whether the utility of self-esteem influences the total satisfaction derived from a fixed amount of money.

Research suggests that social comparison has impact on the meaning of money (Brown, Gardner, Oswald, & Qian, 2005; Campbell, Converse, & Rodgers, 1976; Lyubomirsky & Ross, 1997; Luttmer, 2005; Michalos, 1985; Solberg, Diener, Wirtz, Lucas, & Oishi, 2002; Srivastava, Locke, & Bartol, 2001). People perceive bolstered self-esteem when they perform better than others do (Festinger, 1954; Wills, 1981). Earning money is an important domain for people to demonstrate their competence. Thus, their self-esteem may be boosted if they earn more than others. Research demonstrates that comparative income, such as wage rank, had a stronger effect on satisfaction than absolute income (Blanchflower & Oswald, 2004; Diener & Biswas-Diener,

2002; Diener, Suh, Lucas, & Smith, 1999; Easterlin, 1973, 1995, 2001; Oswald, 1997). It is possibly because comparative income provides more information about a person's competence than absolute income does. Research also shows that the impact of financial outcomes on satisfaction is partly mediated by perceived self-control, which is related to self-esteem (Johnson & Krueger, 2006; Taylor & Brown, 1988). Studies on longitudinal household data show that people's satisfaction with their income is negatively related to the average income of their neighbors, even after their absolute income is statistically controlled (Brown, Gardner, Oswald, & Qian, 2005; Clark & Oswald, 1996; Luttmer, 2005; Neumark & Postlewaite, 1998). These findings suggest that social comparison influences utility of self-esteem carried by pay and its total utility.

The symbolic meaning of money may explain a man's reaction when his wife earns more than he does. From the financial perspective, a man's satisfaction with his spouse's income should be positively related to the amount of money his wife earns. However, the results of correlational data suggest that men may be unsatisfied if their spouses bring more money home than they do (Neumark & Postlewaite, 1998). Research shows that people perceive threats to self-esteem when their spouses work better in domains that are important to their self-concept (Tessor, 1988). Earning money to support a family is an important domain for men to demonstrate their competence (Waters & Moore, 2002; Wood, Conway, Pushkar, & Dugas, 2005). Therefore, men may perceive threatened self-esteem when their wives earn more than they do. Women are more likely to have interdependent self-construal than men (Cross & Madson, 1997). They may care more about warmth than competence when they judge themselves in a relationship (Judd, James-Hawkins, Yzerbyt, & Kashima, 2005). The present research examines how gender and the relative income between a wife and a husband influence the utility of self-esteem and the total satisfaction that people attain from their spouses' income.

The augmentation between money and self-esteem suggests that people may perceive a small amount of bonus to be insulting. They may infer from the low bonus that they are not valued by their organizations. They may even think that they are not as competitive as they had thought of themselves. Therefore, a low bonus may generate disutility of self-esteem. Employees may even be less satisfied if they receive a small amount of bonus than if they do not receive any bonus. This prediction runs counter to financial rationality. The present research tests this hypothesis.

The connection between money and self-esteem may be strengthened or weakened. For instance, research shows that money may crowd out children's intrinsic motivation in learning (Deci & Ryan, 1985, 2000; Lepper, Greene, & Nisbett, 1973). However, money does not harm intrinsic motivation when children are told that their monetary rewards indicate their competence (Deci & Ryan, 1985, 2000; White, 1959). Therefore, the saliency of the association between money and competence promotes the utility of self-esteem and the total utility carried by a favorable pay.

The saliency of the connection between money and its meaning may reduce the total satisfaction derived from a payoff when the payoff carries negative implications to the receivers' self-concept. In organizational settings, it can be addressed explicitly that bonus is distributed based on employees' performance. People who receive a zero bonus may view their payment to be insulting when the negative meaning of their bonus is made salient. People with a zero bonus may not perceive ego-threatening information if they are not informed of the bonus. The present research examines whether the saliency of the association between money and competence exacerbates the disutility of self-esteem implicated in a payment with no bonus.

Monetary utility and utility of self-esteem may partially compensate for one another because their functions overlap. The attainment of either money or self-esteem produces satisfaction. Both money and self-esteem motivate desirable behavior. Research shows that the satisfaction derived from self-esteem stimulates learning in the absence of monetary rewards (Deci, Koestner, & Ryan, 1999; Henderlong & Lepper, 2002; Kennedy & Willcutt, 1964; McGrade, 1966; Spear, 1970). When their payment is held constant, the pride derived from being a valuable member of a company promotes productivity (Shamir, Arthur, & House, 1994; Shamir, House, & Arthur, 1993). Utility of self-esteem may take the place of money in rewarding desirable behavior in certain situations.

Money may somewhat compensate for the lack of utility of self-esteem in an option. Research shows that people actively seek positive information about the self in another domain after they receive ego-threats in one domain (Steele, 1988; Tesser, Martin, & Cornell, 1996). The flexibility in maintaining self-esteem provides a psychological basis for the substitution between money and self-esteem. If people value their competence in improving their financial well-being, money may partly substitute for the scarcity of utility of self-esteem carried by an option. For instance, it is observed in economics that some jobs are rated as low status jobs in a society. However, their wages are high, which are considered to compensate for the low social status (Brennan & Pettit, 2004). Classic research in psychology suggests that high status bolsters self-esteem (Sherif & Cantril, 1947). For instance, people commit self-serving bias when they evaluate their standing in a society. More people identify themselves with middle class than their income guarantees (Centers, 1948). The present research examines whether either high status or high income implies positive information to the receivers' self-concept. Furthermore, it tests whether high wages partly substitute for the lack of utility of self-esteem implied in low status jobs.

Money and self-esteem compete against each other because each of them has distinctive functions. For instance, the satisfaction with a positive self-image does not feed a hungry person. Money may not comfort the loss of self-esteem produced by failure in fulfilling a person's moral standards. The responder's choice in the ultimatum game illustrates a situation in which people have to decide between money and self-esteem (Camerer & Thaler, 1995; Henrich, et al, 2005; Güth, 1995; Güth, Schmittberger, & Schwarze, 1982; Roth, 1995; Thaler, 1988; Zhang, 2004). The ultimatum bargaining game is a widely used experimental paradigm in the research on negotiation. In the ultimatum game, two players, a proposer and a responder, divide a fixed sum of money. The proposer makes an offer on how to allocate the money. The responder decides whether to accept or to reject the offer. If the responder accepts the offer, the money is distributed according to the proposer's offer. If the responder rejects the offer, neither of the players receives anything. If the responder follows financial rationality, he/she should accept any nonzero offer. However, responders frequently turn down proportionally low offers. Responders may perceive the small offers to be insulting based on the social comparison between the proposers' benefits and the responders' profits. They may reject the low offers to defend their self-esteem (Thaler, 1988; Zhang, 2004). The present research examines directly whether the responder's choice in the ultimatum game involves the conflict between money and self-esteem.

Situational need for money may promote the choice of financial benefits at the expense of self-esteem. Money satisfies more basic human needs than self-esteem does (Maslow, 1943, 1954, 1962, 1971). Money is used to buy living necessities, but self-esteem cannot function this way. Thus, money may be a primary goal when people need it to purchase their food. The present research tests whether responders in the ultimatum game are more likely to accept an

insulting offer when they need the money for their survival than when they are not in such a deprived situation.

The amount of money at stake may influence the choice between money and self-esteem. Research suggests that the acceptance rate of a proportionally low offer was positively related to the monetary value of the offer (Munier & Zaharia, 2002). There are two possibilities of this finding. First, the absolute financial value may buffer the insult carried by a proportionally small offer. Second, an offer is perceived insulting as far as it is proportionally low, but its financial value promotes the choice of money at the expense of self-esteem. The present research explores whether the monetary value of a proportionally low offer alters the insult implicated in the offer or the responders' choices or both.

Trait self-esteem may have impact on the choice between money and self-esteem. People with high trait self-esteem usually think well of themselves (Baumeister, 1998; Greenwald, 1980; James, 1890; Taylor & Brown, 1988). They may think that they deserve more rewards than those with low trait self-esteem. Therefore, proposers with high trait self-esteem may keep more money for themselves than those with low trait self-esteem. Research suggests that people with high trait self-esteem have more resources to assure their positive self-image than those with low trait self-esteem (Cohen, Aronson, & Steele, 2000; Steele, 1988; Steele, Spencer, & Lynch, 1993). Therefore, trait self-esteem buffers the effect of potential ego-threatening information (Josephs, Larrick, Steele, & Nisbett, 1992; Larrick, 1993; Steele, 1988). For instance, the prospect of making a bad decision challenges a person's positive self-image. Research shows that people low in trait self-esteem are less likely to make risky choices when they expect to receive feedback about their choices than when they do not know their decision outcomes. However, people high in trait self-esteem are not influenced by the feedback of their choices (Josephs, Larrick, Steele, & Nisbett, 1992). In the ultimatum game, people may perceive negative information about the self when they receive a proportionally low offer. People high in trait self-esteem are less likely to become defensive than those low in trait self-esteem. Furthermore, the offer carries financial benefits despite its insulting message. Therefore, people with high trait self-esteem may be more likely to accept the offer than those with low trait self-esteem.

### **The Present Research**

The present research examines the relationship between money and self-esteem: augmentation, substitution, and competition. Money and self-esteem may augment one another due to the dual functions of money. Money is used to purchase material products. It may also signify the competence of its owner. The utility of self-esteem adds to the satisfaction that people gain from the money's purchasing power. Experiments 1-4 tested how the meaning of money influenced its implications to the receivers' self-esteem and its total utility. Experiment 1 examined how the source of money (reward versus unemployment compensation) shaped the money's implications to the receivers' self-esteem and its total utility. Experiment 2 examined how gender and the relative income between a husband and a wife influenced the utility of self-esteem and the satisfaction that people derived from their spouses' income. Experiment 3 examined whether a payment with a small bonus was perceived insulting. It also tested whether people were less satisfied with the payment with a small bonus than a payment with no bonus. Experiment 4 examined how the method to deliver a payment influenced the receivers' satisfaction. It tested whether people gained less satisfaction from a payment with a zero bonus

when the connection between bonus and competence was made salient than when the bonus was not mentioned.

Money and self-esteem carried by the same option may partially substitute for one another. An option may include money and other factors that produce utility of self-esteem. If people are satisfied with any type of utility, money and self-esteem can replace one another. However, money and self-esteem have unique functions. Therefore, money and self-esteem can only partially substitute for one another. Experiment 5 tested people's satisfaction when their jobs provided an abundant utility of either money or self-esteem or both.

Money and self-esteem compete against each other when people choose between two options: one containing money, and the other carrying utility of self-esteem. Experiments 6-9 examined the competition between money and self-esteem, and these studies applied the experimental paradigm of the ultimatum game. Experiment 6 examined whether responders in the ultimatum game assessed a proportionally low offer to be insulting. Furthermore, it tested whether responders believed that acceptance of the low offer harmed their self-esteem. Experiment 7 explored whether situational need for money reduced the perceived insult implicated in a small offer. Furthermore, it examined whether responders were more likely to accept the low offer when they needed money to purchase necessities than when they were not in such a deprived condition. Experiment 8 examined whether responders were more likely to accept a proportionally low offer when the absolute monetary value of the offer was large than when its monetary value was small. Furthermore, it explored whether the financial value of the offer changed responders' perceived insult implied in the offer, or their choices, or both. Experiment 9 examined how trait self-esteem influenced the proposers' offers and the responders' decisions in the ultimatum game. The prediction was that proposers high in trait self-esteem kept more money for themselves than those low in trait self-esteem. Responders with high trait self-esteem were more likely to accept a proportionally low offer than those with low trait self-esteem.

## **Experiment 1**

Experiment 1 tested the augmentation between money and self-esteem. Specifically, it examined how the source of money, e.g. reward versus unemployment compensation, influences its implications to the receivers' self-esteem and the total satisfaction derived from the money.

### ***Method***

#### ***Participants***

Ninety-one undergraduate students (65 females, 25 males, 1 person did not report his/her gender) participated in this study as a class exercise. This experiment was a one-factor (money-as-reward versus money-as-unemployment-compensation) between-subject design.

#### ***Procedure***

All participants read a scenario in which they received 900 *yuan*, but the source of money was different. In the money-as-reward condition, participants were told that they received 900 *yuan* as the reward for their excellent work that month. In the money-as-unemployment-compensation condition, participants were told that they received 900 *yuan* as the compensation for their continual unemployment that month.

All participants rated the satisfaction that they gained from the 900 *yuan*, the scale ranged from 1 (very dissatisfied) to 9 (very satisfied). They assessed how useful the 900 *yuan* was, and the scale ranged from 1 (not useful at all) to 9 (very useful). They evaluated the money's implications to their self-esteem, and the scale ranged from 1 (self-esteem threatened) to 9 (self-esteem boosted). They then filled out their demographic information. Participants were debriefed.

### ***Results***

Analysis of Variance (ANOVA) was used to analyze the data. The results showed that the source of money influenced its total utility. Participants who attained the money as a reward for their excellent work gained more satisfaction from the money ( $M = 6.98, SD = 1.58$ ) than people who received the money as their unemployment compensation ( $M = 5.10, SD = 2.19$ ),  $F(1, 89) = 22.57, p < .001$ . The effect size  $f$  was .65. According to Cohen (1988), effect size  $f$  equal to .10 was small,  $f$  equal to .25 is medium, and  $f$  equal to .40 is large. Therefore, the effect size of .65 was large.

The source of money did not alter the usefulness of the money,  $F < 1, ns$ .

The source of money influenced its utility of self-esteem. People who attained the money as their reward for excellent work rated more positively the money's implications to their self-esteem ( $M = 6.73, SD = 1.56$ ) than participants who received the money as their unemployment compensation ( $M = 4.43, SD = 1.99$ ),  $F(1, 89) = 38.27, p < .001$ . The effect size  $f$  was .69.

### ***Discussion***

The findings of Experiment 1 supported the basic assumption of the augmentation between money and self-esteem. Money implied positive or negative information to the receivers' self-concept, and the utility of self-esteem contributed to the total satisfaction derived from the money. The results showed that the source of money influenced its utility of self-esteem and its total utility. Even though participants in both conditions rated an amount of money to be equally useful, participants in the money-as-unemployment-compensation condition gained less utility of self-esteem than those in the money-as-reward condition. As a result, people who received the money as their unemployment compensation derived less satisfaction from the fixed amount of money than participants who attained the money as reward.

## **Experiment 2**

Social comparison may have impact on the meaning of money and its total utility. Experiment 2 was designed to test how gender and the relative income between a wife and a husband influenced people's satisfaction with their spouses' income. The prediction was that men, instead of women, perceived disutility of self-esteem if their spouses earned more than they did. The disutility of self-esteem reduced the satisfaction that men gained from their spouses' income.

### ***Method***

#### ***Participants***

Seventy-six undergraduate students (45 females, 28 males, 3 people did not report their gender) in two classes participated in this study as a class exercise. This experiment was a 2 (gender: male versus female) X 2 (the relative income: spouse-earn-more versus spouse-earn-less) between-subject design.

### ***Procedure***

All participants read a scenario. They were told that their own income was about the same amount as they expected. Participants were randomly assigned to the spouse-earn-more condition and the spouse-earn-less condition. In the spouse-earn-more condition, participants were told: “You are married. Your income is about the same amount of money that you have expected. Your spouse earns twice as much as you do.” In the spouse-earn-less condition, participants were told: “You are married. Your income is about the same amount of money that you have expected. Your spouse earns half of what you earn.”

All participants completed a survey on satisfaction with their spouses’ income and the utility of self-esteem produced by their spouses’ income. a) They answered the question, “How satisfied are you with the income of your spouse?”, and the scale ranged from 1 (very unsatisfied) to 9 (very satisfied). b) They rated, “How satisfied are you with the monetary value of your spouse’s income?”, and the scale ranged from 1 (very unsatisfied) to 9 (very satisfied). c) They answered, “How does the income of your spouse influence your self-esteem?”, and the scale ranged from 1 (my self-esteem is threatened) to 9 (my self-esteem is boosted). d) They assessed, “How satisfied are you with the overall income of your household (including you and your spouse)?”, and the scale ranged from 1 (very unsatisfied) to 9 (very satisfied). e) They rated, “How satisfied are you with the relative income between you and your spouse?”, and the scale ranged from 1 (very unsatisfied) to 9 (very satisfied). f) They answered, “How satisfied are you with your marriage overall?”, and the scale ranged from 1 (very unsatisfied) to 9 (very satisfied). f) They assessed, “How confident are you with the stability of your marriage?”, and the scale ranged from 1 (not confident at all) to 9 (very confident). Participants then filled out their demographic information. They were debriefed.

### ***Results***

The results showed that the relative income, gender, and the interaction between gender and the relative income had significant effects on participants’ satisfaction with their spouses’ income. Participants in the spouse-earn-more condition were more satisfied with their spouses’ income ( $M = 6.77$ ,  $SD = 1.73$ ) than those in the spouse-earn-less condition ( $M = 4.89$ ,  $SD = 2.59$ ),  $F(1, 69) = 8.81$ ,  $p = .004$ . The effect size  $f$  was .46. Female participants were less satisfied with their spouses’ income ( $M = 5.36$ ,  $SD = 2.59$ ) than males ( $M = 6.50$ ,  $SD = 1.90$ ),  $F(1, 69) = 4.71$ ,  $p = .033$ . The effect size  $f$  was .37.

Importantly, the interaction between gender and the relative income on participants’ satisfaction with their spouses’ income was significant,  $F(1, 69) = 14.95$ ,  $p < .001$ . The effect size  $f$  was .57. Males were slightly less satisfied with their spouses’ income when their spouses’ income was twice their own income ( $M = 6.29$ ,  $SD = 1.98$ ) than when their spouses’ income was half of their own income ( $M = 6.71$ ,  $SD = 1.86$ ). Females were much more satisfied with their spouses’ income when their spouses earned twice their own income ( $M = 7.10$ ,  $SD = 1.51$ ) than when their spouses earned half of their own income ( $M = 3.83$ ,  $SD = 2.37$ ).

The relative income had a significant effect on participants’ satisfaction with the monetary value of their spouses’ income. Participants in the spouse-earn-more condition were

more satisfied with the monetary value of their spouses' income ( $M = 6.83$ ,  $SD = 1.69$ ) than those in the spouse-earn-less condition ( $M = 4.87$ ,  $SD = 2.47$ ),  $F(1, 69) = 10.62$ ,  $p = .002$ . The effect size  $f$  was .53. The main effect of gender was not significant,  $F < 1$ , *ns*. The interaction between gender and the relative income on participants' satisfaction with the monetary value of their spouses' income was significant,  $F(1, 69) = 12.66$ ,  $p = .001$ . The effect size  $f$  was .59. Males were slightly less satisfied with the monetary value of their spouses' income when their spouses earned twice their own income ( $M = 6.00$ ,  $SD = 1.66$ ) than when their spouses earned half of their own income ( $M = 6.14$ ,  $SD = 2.21$ ). Females were much more satisfied with the monetary value of their spouses' income when their spouses earned twice their own income ( $M = 7.38$ ,  $SD = 1.50$ ) than when their spouses earned half of their own income ( $M = 4.13$ ,  $SD = 2.35$ ).

The main effect of the relative income on how their spouses' income influenced participants' self-esteem was not significant,  $F(1, 69) = 1.94$ ,  $p = .168$ . The main effect of gender on how their spouses' income influenced participants' self-esteem was also not significant,  $F < 1$ , *ns*.

Most importantly, the interaction between gender and the relative income on participants' self-esteem was significant,  $F(1, 69) = 6.99$ ,  $p = .01$ . The effect size  $f$  was .39. Males perceived more ego-threat when their spouses earned twice their own income ( $M = 4.36$ ,  $SD = 2.21$ ) than when their spouses earned half of their income ( $M = 6.14$ ,  $SD = 1.61$ ). Females perceived a similar level of self-esteem boost in the spouse-earn-more condition ( $M = 5.76$ ,  $SD = 1.67$ ) and in the spouse-earn-less condition ( $M = 5.21$ ,  $SD = 1.87$ ).

The relative income had a significant effect on participants' satisfaction with the overall income of the household. Participants were more satisfied with the overall income of the household when their spouses earned twice their income ( $M = 7.00$ ,  $SD = 1.39$ ) than when their spouse earned half of their income ( $M = 5.50$ ,  $SD = 2.14$ ),  $F(1, 69) = 8.47$ ,  $p = .005$ . The effect size  $f$  was .45. Gender did not have any main effect on participants' satisfaction with the overall income of their household,  $F(1, 69) = 1.07$ ,  $p = .304$ . The interaction between gender and the relative income was significant,  $F(1, 69) = 7.51$ ,  $p = .008$ . The effect size  $f$  was .41. Males were not more satisfied with the overall income of the household when their spouses earned twice their own income ( $M = 6.57$ ,  $SD = 1.45$ ) than when their spouses earned half of their own income ( $M = 6.50$ ,  $SD = 1.99$ ). Females were more satisfied with the overall income of the household when their spouses earned twice their own income ( $M = 7.29$ ,  $SD = 1.31$ ) than when their spouses earned half of their own income ( $M = 4.92$ ,  $SD = 2.04$ ).

Neither gender nor the relative income had any significant main effect on participants' satisfaction with the relative income between them and their spouses,  $F_s < 1$ , *ns*.

Importantly, the interaction between gender and the relative income on participants' satisfaction with the relative income in a household was significant,  $F(1, 69) = 9.57$ ,  $p = .003$ . The effect size  $f$  was .49. Males were less satisfied with the relative income between themselves and their spouses when their spouses earned twice their own income ( $M = 4.21$ ,  $SD = 1.53$ ) than when their spouses earned half of their own income ( $M = 5.93$ ,  $SD = 2.17$ ). Females were more satisfied with the relative income between themselves and their spouses when their spouses earned twice their own income ( $M = 5.62$ ,  $SD = 2.11$ ) than when their spouses earned half of their own income ( $M = 4.33$ ,  $SD = 2.08$ ).

Neither gender nor the relative income had any main effect on participants' satisfaction with their marriage,  $F_s < 1$ , *ns*.

The interaction between gender and the relative income on participants' satisfaction with their marriage was significant,  $F(1, 69) = 9.73$ ,  $p = .003$ . The effect size  $f$  was .49. Males were

less satisfied with their marriage when their spouses earned twice their own income ( $M = 5.64$ ,  $SD = 1.28$ ) than when their spouses earned half of their income ( $M = 6.86$ ,  $SD = 1.70$ ). Females were more satisfied when their spouses earned twice their own income ( $M = 6.67$ ,  $SD = 1.59$ ) than when their spouses earned half of their own income ( $M = 5.42$ ,  $SD = 1.82$ ).

The relative income did not have any main effect on participants' confidence of the stability of their marriage,  $F < 1$ , *ns*. Gender did not have any main effect on participants' confidence of the stability of their marriage,  $F(1, 69) = 1.66$ ,  $p = .202$ .

As predicted, the interaction between gender and the relative income on participants' confidence of the stability of their marriage was significant,  $F(1, 69) = 25.86$ ,  $p < .001$ . The effect size  $f$  was .78. Males were less confident about the stability of their marriage when their spouses earned twice their own income ( $M = 4.86$ ,  $SD = 1.96$ ) than when their spouses earned half of their own income ( $M = 7.50$ ,  $SD = 1.61$ ). Females were more confident about their marriage when their spouses earned twice their own income ( $M = 6.62$ ,  $SD = 1.72$ ) than when their spouses earned half of their own income ( $M = 4.54$ ,  $SD = 2.23$ ).

### ***Discussion***

The findings of Experiment 2 supported the idea that money and self-esteem augmented one another. The utility of self-esteem implicated in money added to its total utility. The results showed that men perceived threats to their self-esteem when their spouses earned more than they did. The disutility of self-esteem reduced the satisfaction that men derived from their spouses' income.

### **Experiment 3**

The augmentation between money and self-esteem suggests that an additional amount of money does not necessarily promote satisfaction. For instance, a small bonus carries financial benefits, but it may imply negative information to the receivers' self-concept. Experiment 3 was designed to test whether people perceived a payment with a low bonus to be insulting. It also examined whether the low bonus reduced people's satisfaction with their payment.

### ***Method***

#### ***Participants***

Forty-five undergraduate students participated in this study. They were recruited from a webpage to post advertisements on campus. They first completed this experiment and then took part in an irrelevant study. The total experimental time was about 30 minutes. Participants received 10 *yuan* as their payment. This experiment was a one-factor (a small bonus versus control) between-subject design.

#### ***Procedure***

Participants were randomly assigned to the small bonus condition or the no bonus condition. In the low bonus condition, participants were told, "You have worked in a company for a year. You receive your regular salary every month. At the end of this year, you receive a bonus of ¥ 9." In the control condition, participants were told, "You have worked in a company for a year. You receive your regular salary every month."

All participants rated satisfaction with their payment and the payment's implications to their self-esteem. a) They answered, "How satisfied are you with the payment?", and the scale ranged from 1 (very dissatisfied) to 9 (very satisfied). b) They assessed, "How do you feel about the payment?", and the scale ranged from 1 (insulting) to 9 (flattering). c) They rated, "How satisfied are you with the monetary value of the payment?", and the scale ranged from 1 (very dissatisfied) to 9 (very satisfied). d) They answered, "Do you want to leave the company in a year?", and the scale ranged from 1 (a little bit) to 9 (very much). They then filled out their demographic information. Participants were debriefed.

### ***Results***

As predicted, participants in the low bonus condition perceived their payment to be more insulting ( $M = 3.86$ ,  $SD = 1.96$ ) than those in the control condition ( $M = 5.04$ ,  $SD = 1.55$ ),  $F(1, 43) = 5.04$ ,  $p = .03$ . The effect size  $f$  was .37.

Participants in the low bonus condition were less satisfied with their payment ( $M = 3.64$ ,  $SD = 1.89$ ) than those in the control condition ( $M = 4.74$ ,  $SD = 1.63$ ),  $F(1, 43) = 4.40$ ,  $p = .042$ . The effect size  $f$  was .32.

Participants in the low bonus condition were less satisfied with the monetary value of their payment ( $M = 3.45$ ,  $SD = 1.63$ ) than those in the control condition ( $M = 5.22$ ,  $SD = 1.51$ ),  $F(1, 43) = 14.26$ ,  $p < .001$ . The effect size  $f$  was .80.

Participants in the low bonus condition wanted more to leave the company in a year ( $M = 5.27$ ,  $SD = 1.93$ ) than those in the control condition ( $M = 3.96$ ,  $SD = 1.43$ ),  $F(1, 43) = 6.79$ ,  $p = .013$ . The effect size  $f$  was .48.

### ***Discussion***

The findings of Experiment 3 supported the hypothesis based on the augmentation between money and self-esteem. A low bonus produced insulting information to the receivers' self-concept, and the disutility of self-esteem reduced the satisfaction derived from the payment. The results showed that a payment with a small bonus was more insulting than a payment with no bonus. People were less satisfied with their payment if they received a low bonus than if they did not receive any bonus. People in the low bonus condition wanted more to leave the company than those in the no bonus condition.

## **Experiment 4**

The augmentation between money and self-esteem may be strengthened when the meaning of money is made salient. Experiment 4 tested whether the saliency of the meaning of money exacerbated the disutility of self-esteem implicated in a payment with a zero bonus, though it did not alter the utility of self-esteem implicated in a payment with a moderate bonus. The predication was that a payment with a zero bonus was more insulting when the bonus's meaning was addressed explicitly than when it was not mentioned.

### ***Method***

#### ***Participants***

Ninety-two undergraduate students (56 females, 34 males, 2 people did not report their gender) in two classes participated in this study as a class exercise. This experiment was a 2 (the meaning of bonus: salient versus control) X 2 (the amount of bonus: zero versus 900 *yuan*) between-subject design.

### ***Procedure***

Participants were randomly assigned to one of the four conditions. In the saliently no bonus condition, participants were told: “You have worked in a company for a year. Besides a regular salary of ¥ 60,000/year, you may receive some bonus that depends on your performance. At the end of the year, you do not receive any bonus.” In the no bonus control condition, participants were told, “You have worked in a company for a year. You receive your regular salary of ¥ 60,000/year.” In the salient bonus condition, participants were told: “You have worked in a company for a year. You receive your regular salary of ¥ 60,000/year, you may receive some bonus that depends on your performance. At the end of this year, you receive a bonus of ¥ 900.” In the bonus control condition, participants were told, “You have worked in a company for a year. You receive your regular salary of ¥ 60,000/year. At the end of this year, you receive a bonus of ¥ 900.”

All participants then rated satisfaction with their payment, satisfaction with the monetary value of their payment, and their payment’s implications to their self-esteem. a) They answered, “How satisfied are you with the payment?”, and the scale ranged from 1 (very dissatisfied) to 9 (very satisfied). b) They rated, “How do you feel about the payment?”, and the scale ranged from 1 (insulting) to 9 (flattering). c) They assessed, “How satisfied are you with the monetary value of the payment?”, and the scale ranged from 1 (very dissatisfied) to 9 (very satisfied). d) They answered, “Do you want to leave the company in a year?”, and the scale ranged from 1 (a little bit) 9 (very much). They also filled out their demographic information. Afterwards, participants were debriefed.

### ***Results***

The results showed that the saliency of the meaning of bonus had a marginally significant effect on the disutility of self-esteem implicated in a payment. Participants in the saliency condition rated their payment to be more insulting ( $M = 4.40$ ,  $SD = 1.45$ ) than those in the control condition ( $M = 5.27$ ,  $SD = 1.63$ ),  $F(1, 88) = 3.65$ ,  $p = .059$ . The effect size  $f$  was .19. The amount of bonus had a significant effect on participants’ perception of their payment. Participants in the zero bonus condition perceived their payment to be more insulting ( $M = 4.51$ ,  $SD = 1.72$ ) than those in the bonus condition ( $M = 5.16$ ,  $SD = 1.40$ ),  $F(1, 88) = 6.95$ ,  $p = .01$ . The effect size  $f$  was .34. The interaction between saliency and the amount of bonus was marginally significant,  $F(1, 88) = 3.79$ ,  $p = .055$ . The effect size  $f$  was .20. When they received a zero bonus, participants perceived their payment to be more insulting when the meaning of bonus was made salient ( $M = 3.84$ ,  $SD = 1.43$ ) than when the bonus was not mentioned ( $M = 5.27$ ,  $SD = 1.72$ ). When they received a bonus of 900 *yuan*, participants perceived their payment to be similarly flattering regardless of whether the bonus was explicitly mentioned ( $M = 5.05$ ,  $SD = 1.21$ ) or not ( $M = 5.26$ ,  $SD = 1.57$ ).

The saliency of the meaning of bonus influenced participants’ evaluation of the monetary value of their payment. Participants in the saliency condition ( $M = 4.40$ ,  $SD = 1.45$ ) were less satisfied with the monetary value of their payment than those in the control condition ( $M = 5.16$ ,  $SD = 1.61$ ),  $F(1, 88) = 5.28$ ,  $p = .024$ . The effect size  $f$  was .27. The amount of bonus had neither

main effect nor interaction effect with saliency on participants' evaluation of the monetary value of their payment,  $F_s < 1$ , *ns*. Neither saliency nor the amount of bonus had any main effect or interaction effect on participants' willingness to leave the company,  $F_s < 1$ , *ns*.

The saliency of the meaning of bonus had a significant main effect on participants' satisfaction with their payment. Participants in the saliency condition were less satisfied with their payment ( $M = 3.94$ ,  $SD = 1.75$ ) than those in the control condition ( $M = 5.07$ ,  $SD = 2.14$ ),  $F(1, 88) = 8.03$ ,  $p = .006$ . The effect size  $f$  was .38. The amount of bonus (0 versus 900) did not have any main effect on participants' satisfaction with their payment,  $F < 1$ , *ns*. The interaction between saliency and the amount of bonus was marginally significant,  $F(1, 88) = 3.97$ ,  $p = .05$ . The effect size  $f$  was .21. When the bonus was zero, participants were less satisfied with their payment when the meaning of bonus was made salient ( $M = 3.52$ ,  $SD = 1.61$ ) than when the bonus was not mentioned ( $M = 5.41$ ,  $SD = 2.04$ ). When the bonus was 900 *yuan*, participants in the saliency condition were as satisfied with their payment ( $M = 4.41$ ,  $SD = 1.82$ ) as those in the control condition ( $M = 4.74$ ,  $SD = 2.03$ ).

### ***Discussion***

The finding of Experiment 4 supported the hypothesis that the saliency of the meaning of money strengthened the augmentation between money and self-esteem. The results showed that the saliency of the meaning of bonus influenced the payment's implications to the receivers' self-esteem. Participants who received a zero bonus perceived their payment to be more insulting when the connection between bonus and competence was addressed explicitly than when the bonus was not mentioned. Therefore, the method to deliver a payment with a zero bonus influenced the disutility of self-esteem implied in the payment.

### **Experiment 5**

The abundance of one type of utility may partly compensate for the scarcity of the other when an option contains monetary utility and utility of self-esteem. Experiment 5 tested the substitution between money and self-esteem. In the assessment of the total utility of a job, salary carried monetary utility, and status produced utility of self-esteem. Experiment 5 examined how salary and status influenced the total utility of a job.

### ***Method***

#### **Participants**

Ninety-one people (63 females, 28 males, 2 people did not report their gender) participated in this study as a class exercise. This experiment was a 2 (salary: high versus low) X 2 (status: high versus low) between-subject design.

#### ***Procedure***

Participants were informed of their salary and job status. Participants were randomly assigned to the high status condition or the low status condition. In the high status condition, participants were told, "Your job type is M, which is considered by the society as a high status job. It is one of the 10 jobs that people want to do. When others ask you what you do, you are proud to tell them." In the low status condition, participants were told, "Your job type is M, which is considered by the society as a low status job. It is one of the 10 jobs that people do not want to do. When others ask you what you do, you are reluctant to tell them."

They were randomly assigned to the high salary condition or the low salary condition. In the high salary condition, participants were told, “You receive a much higher salary than an average person in the society. Your income is twice the income of an average person.” In the low salary condition, participants were told, “You receive a much lower salary than an average person in the society. Your income is half of the income of an average person.”

All participants rated satisfaction with their jobs, satisfaction with the monetary payoff of their jobs, and the jobs’ implications to their self-esteem. First, they rated, “How satisfied are you with your job overall?”, and the scale ranged from 1 (very dissatisfied) to 9 (very satisfied). Second, they answered, “How satisfied are you with the monetary payoff of the job?”, and the scale ranged from 1 (very dissatisfied) to 9 (very satisfied). Third, they assessed how their jobs influenced their self-esteem, and the scale ranged from 1 (threatened) to 9 (boosted). Fourth, they answered, “How do you evaluate the *relative* strength between your desire for money and your desire for self-esteem?”, and the scale ranged from 1 (stronger desire for money) to 9 (stronger desire for self-esteem). Participants then filled out their demographic information. Afterwards, they were debriefed.

### ***Results***

The results showed that both salary and status had significant main effects on the total utility of a job. A high salary produced more satisfaction ( $M = 6.28$ ,  $SD = 1.92$ ) than a low salary ( $M = 3.91$ ,  $SD = 2.16$ ),  $F(1, 89) = 48.72$ ,  $p < .001$ . The effect size  $f$  was .68. A high status job generated more satisfaction ( $M = 5.46$ ,  $SD = 2.32$ ) than a low status job ( $M = 4.56$ ,  $SD = 2.33$ ),  $F(1, 89) = 18.02$ ,  $p < .001$ . The effect size  $f$  was .59. Salary and status did not have any interaction effect on the total utility of a job,  $F < 1$ , *ns*.

The main effect of salary on the monetary utility of a job was significant. Participants who received a high salary were more satisfied with their monetary payoff ( $M = 7.00$ ,  $SD = 1.45$ ) than those with a low salary ( $M = 2.51$ ,  $SD = 1.57$ ),  $F(1, 89) = 180.25$ ,  $p < .001$ . The effect size  $f$  was .68. Job status did not have any main effect on the monetary utility of a job,  $F < 1$ , *ns*. Job status and salary did not have any interaction effect on the monetary utility of a job,  $F_s < 1$ , *ns*.

Both salary and status had significant main effects on a job’s utility of self-esteem. A high salary implicated more positive information to participants’ self-esteem ( $M = 5.46$ ,  $SD = 2.15$ ) than a low salary did ( $M = 4.60$ ,  $SD = 2.29$ ),  $F(1, 89) = 16.25$ ,  $p < .001$ . The effect size  $f$  was .57. A job with high status implied more positive information to participants’ self-esteem ( $M = 5.96$ ,  $SD = 2.01$ ) than a job with low status did ( $M = 3.72$ ,  $SD = 1.91$ ),  $F(1, 89) = 45.99$ ,  $p < .001$ . The effect size  $f$  was .68. Salary and status did not have any interaction effect on a job’s utility of self-esteem,  $F < 1$ , *ns*.

Neither salary nor status had any main effect or interaction effect on participants’ relative strength of the desire for money and the desire for self-esteem,  $F_s < 1$ , *ns*. Therefore, participants in the four different conditions were in the same motivational state when they assessed the utility of a job.

### ***Discussion***

The findings of Experiment 5 supported the idea that money and self-esteem partially substituted for one another. The results showed that people were satisfied when their jobs provided abundant utility of either money or self-esteem. A job implied positive information to people’s self-esteem when it provided either a high salary or a high status. The finding that a high pay was flattering to the self also supported the augmentation between money and self-

esteem. People were satisfied with the monetary utility only if their jobs offered a high salary. Therefore, monetary utility and utility of self-esteem in part compensate for one another.

## **Experiment 6**

Money and self-esteem may compete against each other when people decide whether to accept or to reject an insulting but profitable offer in negotiation. People may accept the profit, but they have to endure the disutility of self-esteem. They may reject the offer to protect their self-esteem, but they suffer financial losses. Experiment 6 tested whether responders in the ultimatum bargaining game perceived a proportionally low offer to be insulting. Furthermore, it examined whether the acceptance of a low offer harmed the responders' self-esteem.

### **Method**

#### ***Participants***

Eighty-three undergraduate students (49 females, 30 males, 4 people did not report their gender) in two classes participated in this study as a class exercise. This experiment was a 2 (role assignment: proposer versus responder) X 2 (the responder's decision: acceptance versus rejection) between-subject design.

#### ***Procedure***

Participants played the role of proposers and responders in a scenario. They were told that they and another person in the class would be randomly paired to play the decision game. The two of them would divide 10 *yuan*. One person played the role of the proposer and the other person was the responder. The proposer would make an offer on how to divide the 10 *yuan*, and the responder would decide whether to accept or to reject the offer. If the responder accepted the offer, the 10 *yuan* would be split according to the proposed offer. If the responder rejected the offer, neither the proposer nor the responder would receive anything. They were told that the proposer and the responder would be kept anonymous throughout and after the experiment.

Participants were randomly assigned to be proposers or responders. All participants were told that the proposer in the scenario proposed to give the responder 1 *yuan* and to keep the remained money to himself/herself.

Participants were randomly assigned to the acceptance condition or the rejection condition. In the acceptance condition, participants were told that the responder in the scenario accepted the offer. As a result, both the proposer and the responder received their money based on the proposer's offer. In the rejection condition, they were told that the responder rejected the offer, and thus neither the proposer nor the responder received anything.

All participants rated how the responder perceived the offer, and the scale ranged from 1 (insulting) to 7 (flattering). They assessed the responder's self-esteem after the responder made his/her decision, and the scale ranged from 1 (self-esteem threatened) to 7 (self-esteem boosted). They also answered a few questions about another study. They then filled out their demographic information. Participants were debriefed.

### ***Results***

The results showed that role assignment had a significant effect on participants' perception of the offer. The proposers perceived the small offer to be less insulting ( $M = 3.11, SD = 1.79$ ) than the responders did ( $M = 2.23, SD = 1.27$ ),  $F(1, 79) = 6.51, p = .013$ . The effect size  $f$  was .34. The responder's decision did not have any significant effect on how participants perceived the insult of the offer, though participants perceived the offer to be somewhat less insulting ( $M = 2.98, SD = 1.72$ ) when the responder accepted the offer than when the responder rejected the offer ( $M = 2.38, SD = 1.46$ ),  $F(1, 79) = 2.94, p = .091$ . The effect size  $f$  was .16. Role assignment and the responder's decision did not have any interaction effect on participants' perception of the offer,  $F(1, 79) = 1.13, p = .29$ .

The responder's decision had a significant main effect on how participants evaluated the decision's implications to the responder's self-esteem (Eighty-two participants answered this question). The responder's acceptance of the offer was perceived to be more ego-threatening ( $M = 3.07, SD = 1.52$ ) than the responder's rejection of the offer ( $M = 4.56, SD = 1.93$ ),  $F(1, 78) = 16.38, p < .001$ . The effect size  $f$  was .61. Role assignment did not have any main effect,  $F < 1, ns$ . The interaction between role assignment and the responder's decision was marginally significant,  $F(1, 78) = 3.84, p = .054$ . The effect size  $f$  was .21. The effect of the responder's decision influenced the responders' perception to a larger degree than its influence on the proposers' perception. The proposers rated that acceptance ( $M = 3.55, SD = 1.63$ ) harmed the responder's self-esteem slightly more than rejection did ( $M = 4.33, SD = 2.13$ ). The responders rated that acceptance harmed the responder's self-esteem much more ( $M = 2.57, SD = 1.25$ ) than rejection did ( $M = 4.83, SD = 1.69$ ).

## ***Discussion***

The findings of Experiment 6 supported the idea that responders in the ultimatum bargaining game encountered the choice between money and self-esteem when they decided to accept or reject a proportional low offer. The results showed that responders perceived low offers to be insulting. They rejected the small offers to protect their self-esteem.

## **Experiment 7**

Money serves more basic functions for human beings than self-esteem does. People may choose money at the cost of self-esteem when they need the money for their survival. Experiment 7 tested whether the responders in the ultimatum bargaining game were more likely to accept a proportionally low offer when they needed the money to buy food than when they were not in such a deprived condition. Furthermore, it explored whether the need for money altered the responders' perception of the offer, or their choices, or both.

## ***Method***

### ***Participants***

Fifty-eight undergraduate students (32 females, 26 males) in two classes participated in this study as a class exercise. This experiment was a one-factor (the need for money condition versus the control condition) between-subject design.

### ***Procedure***

Participants were told that they were randomly paired to play a decision game. Each pair of participants divided 100 *yuan*. In this game, one person played the role of the proposer, and the other person was the responder. The proposer would make an offer on how to divide the 100 *yuan*, and the responder would decide either to accept or to reject the offer. If the responder accepted the offer, the 100 *yuan* would be split according to the proposed offer. If the responder rejected the offer, neither the proposer nor the responder would receive anything.

Actually, all participants were responders. Participants were randomly assigned to the need for money condition or the control condition. In the need for money condition, participants were told, “The proposer offers you 1 and keeps the remaining money for himself/herself. You are in a situation in which that you need 1 to buy the essential food to survive for a couple of days. You have not found other opportunities to get the money.” In the control condition, participants were told, “The proposer offers you 1 and keeps the remaining money for himself/herself.” All participants then decided whether to accept or to reject the offer.

After they made their decisions, participants answered what the relative strength of the following motivations on their decision was, and the scale ranged from 1 (desire for money) to 9 (desire for self-esteem). They rated how they perceived the proposer’s offer, and the scale ranged from 1 (insulting) to 9 (flattering). Participants then filled out their demographic information. Afterwards, they were debriefed.

### ***Results***

Consistent with the manipulation, participants in the need for money condition reported a stronger desire for money ( $M = 2.45, SD = 2.23$ ) than those in the control condition ( $M = 6.00, SD = 2.71$ ),  $F(1, 56) = 29.68, p < .001$ . The effect size  $f$  was .88.

Participants in the need for money condition did not perceive the offer to be less insulting ( $M = 2.55, SD = 1.50$ ) than those in the control condition ( $M = 2.14, SD = 1.51$ ),  $F(1, 56) = 1.10, p = .299$ .

As predicted, participants in the need for money condition were more likely to accept the low offer (93.1%, 27 out of 29) than those in the control condition (20.7%, 6 out of 29),  $Chi-Squared(1, N = 58) = 31.00, p < .001$ . The effect size  $w$  was .74.

### ***Discussion***

The findings of Experiment 7 supported the idea that people were more likely to take money at the expense of self-esteem when they needed the money to buy necessities for their survival. Even though both participants in the need for money condition and those in the control conditions perceived the offer to be insulting, participants in the need for money condition were more likely to accept the low offer than those in the control condition. Therefore, the situational need for money shapes people’s choices between money and self-esteem.

## **Experiment 8**

Is there a price for a person’s dignity? Experiment 8 examined how the financial value of a proportionally low offer influenced people’s perception of the offer and their choices between money and self-esteem. Research suggests that the absolute profit of a relatively low offer promotes the responders’ acceptance of the offer, and the relativity is defined as the comparison between a proposer’s benefit and a responder’s profit in the ultimatum bargaining game (Munier & Zaharia, 2002). Experiment 8 explored whether the monetary value of a proportionally low

offer changed the insult implicated in the offer, or the responders' choices between money and self-esteem, or both.

## ***Method***

### ***Participants***

Fifty-six undergraduate students (30 females, 26 males) in two classes participated in this study as a class exercise. This experiment was a one-factor (the amount of money at stake: large versus control) between-subject design.

### ***Procedure***

Participants were told that they were responders in the ultimatum game. They received an offer of 0.1% of the sum. Participants were randomly assigned to the large monetary stake condition or the control condition. In the large monetary stake condition, participants were told that the sum was a billion dollars (\$1,000,000,000). The proposer said, "I give the responder a million (\$1,000,000) and keep the remained amount to myself." In the control condition, participants were told that the sum was \$10. The proposer offered, "I give the responder a penny (\$.01) and keep the remained amount to myself."

All participants were asked how they perceived the offer, and the scale ranged from -5 (insulting) to 5 (flattering). They then decided whether to accept or to reject the offer. After they made their decisions, participants were debriefed.

## ***Results***

The results showed that the monetary value of a proportionally low offer had a significant effect on the responders' rejections. Participants in the large monetary value condition were more likely to accept the offer (60.0%, 15 out of 25) than those in the control condition (6.5%, 2 out of 31), *Chi-Squared* (1,  $N = 56$ ) = 18.77,  $p < .001$ . The effect size  $w$  was .70.

The monetary value of a proportionally low offer had a marginally significant effect on the responders' perception of the offer,  $F(1, 54) = 3.79$ ,  $p = .057$ . The effect size  $f$  was .25. Participants rated the offer to be somewhat less insulting in the large monetary stake condition ( $M = -3.04$ ,  $SD = 2.19$ ) than those in the control condition ( $M = -4.06$ ,  $SD = 1.75$ ), but people in both conditions viewed the offer to be insulting.

## ***Discussion***

About sixty percent participants accepted a proportionally low offer when the money at stake was a million, but only about seven percent participants accepted the same proportionally low offer when the profit was a penny. Participants perceived an offer of 0.1 percent of the sum to be insulting despite its absolute value. Therefore, people are more likely to choose money at the expense of self-esteem when the amount of profit is large than when the financial benefit is small.

## **Experiment 9**

Experiment 9 tested how trait self-esteem influenced the proposers' offers and the responders' decisions in the ultimatum game. People with high trait self-esteem may think that

they deserve more resources than those with low trait self-esteem (Baumeister, 1998; Taylor & Brown, 1988). They may keep a large portion of rewards for themselves. Thus, proposers with high trait self-esteem may give less money to the responders than those with low trait self-esteem in the ultimatum game. People with high trait self-esteem have more resources to affirm their positive self-image than those with low trait self-esteem (Josephs, Larrick, Steele, & Nisbett, 1992; Larrick, 1993; Steele, 1988). They may be less likely to become defensive than people with low trait self-esteem. Therefore, responders with high trait self-esteem may be more likely to accept an insulting but profitable offer than those with low trait self-esteem.

## *Method*

### *Participants*

Ninety-six undergraduate students (65 females, 13 males, 18 people did not report their gender) in a continual education program participated in this study as a class exercise.

### *Procedure*

Participants completed Rosenberg Self-Esteem Scale (Rosenberg, 1965). They were randomly assigned to be proposers or responders. Participants were told that they and another person in the class were randomly paired to play the decision game. The two of them divided a fixed sum of money. One person played the role of the proposer and the other person was the responder. The fixed sum had equal probability to be any number ranging from \$1 to \$100. They were then told that the proposer made an offer on how to divide the fixed amount of money, and the responder decided whether to accept or to reject the offer. Neither the proposer nor the responder knew the fixed sum when they made their decisions. If the responder accepted the offer, the money was split according to the proposed offer. If the responder rejected the offer, no one received anything. Both the proposer and the responder were kept anonymous throughout and after the experiment. Ten pairs of proposers and responders would be randomly selected after the experiment was finished. The proposers and the responders would be paid cash based on the rules of the game.

Proposers wrote down their offers. Their offers were delivered to responders. Responders decided whether to accept or to reject the offers.

Afterwards, proposers answered how they thought that the responders perceived their offers, and the scale ranged from 1 (insulting) to 7 (flattering). The responders also rated how they perceived the offers on the same 7-point scale. After the study was completed, ten pairs of participants were randomly chosen. The fixed sum was randomly generated. Each pair was paid based on the sum, the proposer's offer, and the responder's decision. Participants were debriefed<sup>1</sup>.

## *Results*

Linear Regression was conducted with the proposers' trait self-esteem as the predictor and the proposers' offers as the dependent measure. Forty-seven out of fifty-two proposers completed Rosenberg Self-Esteem Scale. The trait self-esteem scores ranged from 14 to 38 ( $M = 31.30$ ,  $SD = 5.00$ ). The results showed that the effect of trait self-esteem on the proposers' offers was significant,  $\beta = -.32$ ,  $t(45) = -2.30$ ,  $p = .026$ . The effect size  $f^2$  was .12. According to Cohen (1988),  $f^2$  equal to .02 is small,  $f^2$  equal to .15 was medium,  $f^2$  equal to .35 was large. Trait self-esteem negatively predicted the amount of money that the proposers offered to the responders.

Binary Logistic Regression was conducted to test the effect of the responders' trait self-esteem and the monetary value of the proposers' offers on the responders' acceptance of the offers. Thirty-eight out of forty-four responders completed the trait self-esteem scale. The trait self-esteem scores ranged from 13 to 40 ( $M = 31.03$ ,  $SD = 5.01$ ). In Step 1, the responders' trait self-esteem and the monetary value of the proposers' offers were entered as predictors. In Step 2, the interaction between the responders' trait self-esteem and the monetary value of the proposers' offers was entered as the predictor. Both the trait self-esteem scores and the monetary value of the offers were centered before the interaction term was calculated. The results of Step 1 revealed a main effect of the responders' trait self-esteem ( $B = .31$ ,  $SE = .16$ ),  $Wald(1, N = 38) = 4.02$ ,  $p = .045$ . Trait self-esteem positively predicated the responders' acceptance of the offers. The amount of monetary value of the proposers' offers had a marginally significant effect on the responders' acceptance of the offers ( $B = .09$ ,  $SE = .05$ ),  $Wald(1, N = 38) = 3.42$ ,  $p = .064$ . The larger an offer, the more likely the responders accepted it. The effect size  $f^2$  of Step 1 was .39. The results of Step 2 showed that the interaction effect between the responders' trait self-esteem and the monetary value of the proposers' offers was not significant,  $Wald < 1$ , *ns*.

Neither role assignment nor trait self-esteem had any main effect or interaction effect on how participants perceived the insult implicated in an offer.

### ***Discussion***

The results of Experiment 9 supported the hypothesis that trait self-esteem increased the amount of money that proposers kept for themselves. Proposers with high trait self-esteem gave less money to the responders than those with low trait self-esteem. As predicted, trait self-esteem promoted responders' acceptance of an offer. Responders high in trait self-esteem were more likely to accept an insulting but profitable offer than those low in trait self-esteem.

### **General Discussion**

The results of nine experiments showed that the relationship between monetary utility and utility of self-esteem involved augmentation, substitution, and competition. Money and self-esteem augment one another. The meaning of money may imply positive or negative information to the receivers' self-concept. The utility or disutility of self-esteem adds to the satisfaction derived from the money's instrumental functioning. The source of money has impact on its utility of self-esteem and its total utility. A reward carried more utility of self-esteem than an unemployment compensation. Participants gained more satisfaction from money as a reward than from the same amount of money as an unemployment compensation (Experiment 1). Social comparison influences the meaning of money and its total utility. Men perceived threats to their self-esteem when their wives earned more than they did. The disutility of self-esteem reduced the satisfaction that they attained from their spouses' high income (Experiment 2). The disutility of self-esteem implicated in a low bonus may overrule the satisfaction derived from its instrumental functioning. Participants perceived a small amount of bonus to be offending. People who received a low bonus were less satisfied than those who did not attain any bonus (Experiment 3). The augmentation between money and self-esteem can be strengthened or weakened. The saliency of the connection between money and competence exacerbated the disutility of self-esteem implicated in a zero bonus. Participants received a zero bonus to be more insulting when the connection between competence and bonus was emphasized than when the meaning of bonus was not mentioned (Experiment 4).

Money and self-esteem partially substitute for each other. People were satisfied with a job that provided either high salary or high social status. The utility of money partly made up for the lack of utility of self-esteem because a high salary implied positive information to the receivers' self-concept (Experiment 5).

Each of money and self-esteem has its irreplaceable functions. They compete against one another when people have to choose between two options: one containing more monetary utility, and the other carrying more utility of self-esteem. In the ultimatum game, responders perceived proportionally low offers to be insulting. They turned down the offending but profitable offers to protect their self-esteem (Experiment 6). Situational need for money shapes people's choices between money and self-esteem. Money is used to satisfy more basic human needs than self-esteem. Participants were more likely to choose money at the cost of self-esteem when they needed the money to purchase necessities for their survival than when they were not in such a deprived situation (Experiment 7). The amount of money at stake alters people's choices between money and self-esteem. Participants were more likely to accept a proportionally low offer when the absolute monetary value of the offer was large than when the profit was small, though they perceived proportionally low offers to be insulting despite its financial value (Experiment 8). Trait self-esteem has impact on people's choices between money and self-esteem. People with high trait self-esteem usually think that they deserve more rewards than those with low trait self-esteem. Proposers with high trait self-esteem kept more money for themselves than those with low trait self-esteem. People with high trait self-esteem are less defensive than those with low trait self-esteem. Responders with high trait self-esteem were more likely to accept an insulting but profitable offer than those with low self-esteem (Experiment 9).

The augmentation between money and self-esteem provides a new perspective in understanding violations of the fungibility of money. According to standard economic theories, money should be fungible. Recent research in economics has started challenging the fungibility of money. For instance, people may pay loans for a luxury car and save money for children's education at the same time (Shefrin & Thaler, 1992; Thaler, 1985, 1990, 1999). This type of behavior is considered irrational from a standard economic perspective because they can benefit financially by simply spending their own savings on the car. It is understandable because people want to self-regulate their spending in consumption and make sure that they have savings for important things. The present research explores the infungibility of money from the features of money itself. The total utility of money is not only derived from its instrumental function, but also from its symbolic meaning. Money from different sources may not be fungible because their meaning, specifically, their implications to the receivers' self-esteem, is not the same. For instance, the same amount of rewards and unemployment compensations are equally useful in purchasing products. However, rewards implicate utility of self-esteem, but unemployment compensations imply disutility of self-esteem. These findings explain why unemployed people are unsatisfied even after their income is statistically controlled (Brown, Gardner, Oswald, & Qian, 2005; Clark & Oswald, 1996; Luttmer, 2005; Neumark & Postlewaite, 1998). People obtain less satisfaction from the money offered by the unemployment benefit office than from their earned money. Therefore, money may not be fungible because the same amount of money from diverse sources carries different amounts of utility of self-esteem.

The augmentation between money and self-esteem suggests that an additional amount of bonus can reduce employees' satisfaction. Bonuses may indicate employees' competence. A low bonus produces disutility of self-esteem, which even overrules its monetary utility. Companies may be better off by not mentioning bonuses than providing low bonuses. Even though

companies incur financial costs by providing bonuses, small bonuses carry negative implications to employees' self-esteem. The disutility of self-esteem reduces the satisfaction that employees derive from their payment. This phenomenon runs counter to financial rationality. Employees' satisfaction drops, though their absolute amount of payment increases. Companies' productivity may suffer, though they provide additional money to employees. Therefore, the present research suggests that utility of self-esteem implicated in pay should be taken into consideration in understanding organization behavior.

The augmentation between money and self-esteem is influenced by the saliency of the meaning of money. The saliency of the connection between money and competence promotes the utility or disutility of self-esteem implicated in a payment. When they do not receive any bonus, employees are less satisfied if they are emphasized the connection between bonus and competence than if they are not informed of the bonus. Previous research suggests that a financial reward does not crowd out children's intrinsic motivation in learning when the meaning of reward is explained (Deci & Ryan, 1985, 2000; White, 1959). It is possibly because the saliency of the association between a flattering reward and competence enhances the utility of self-esteem implied in the reward. The utility of self-esteem reinforces the reward's function in motivating desirable behavior. The present research shows that the saliency between an unfavorable payment and competence exacerbates the disutility of self-esteem implicated in the payment. The disutility of self-esteem reduces the receivers' satisfaction. Companies may want to promote the saliency of the connection between money and competence to enlarge the utility that employees attain from a superior payoff. They may also want to minimize the association between money and competence when employees receive low financial benefits. Therefore, altering the saliency of the association between money and self-esteem may enhance the receivers' satisfaction when their financial outcomes remain the same.

The substitution between money and self-esteem provides a perspective in understanding how to distribute resources efficiently. Money and utility of self-esteem carried by the same option partially compensate for one another. The abundance of one type of utility makes up for the scarcity of the other. If companies want to keep their employees, they can offer high salaries. However, when their budget does not allow them to give salaries higher than their competitors, companies may use other sources, such as job titles that carry utility of self-esteem, to keep employees staying in their organizations.

The competition between money and self-esteem provides a novel approach in understanding violations of money maximization. Utility (money) maximization is an important rule of economic rationality (Lagueux, 2004; Rubinstein, 1982; von Neumann & Morgenstern, 1944). The competition between money and self-esteem suggests that people may give up monetary utility in order to attain the utility of self-esteem. Furthermore, the present research shows that the choice between money and self-esteem is influenced by situational need for money, trait self-esteem, and the financial value involved in the options. Responders in the ultimatum game turn down insulting but profitable offers to defend their dignity. Money can be used to satisfy more basic human needs than self-esteem does. Therefore, people tend to choose money and forgo utility of self-esteem when they need the money for their survival. People follow some rationality when they evaluate the tradeoff between money and self-esteem. Even though they perceive an offer of 0.1% of the sum to be insulting, people are much more likely to accept the low offer when they are offered one million out of a billion than when they are offered one penny out of ten dollars. It should be noted that still forty percent of people do not accept an offer of a million if the other person receives nearly a billion. Trait self-esteem influences

people's financial choices. People with high trait self-esteem believe that they deserve more rewards than others (Baumeister, 1998; Greenwald, 1980; James, 1890; Taylor & Brown, 1988). They keep more money for themselves than those with low trait self-esteem. People high in trait self-esteem have more alternative resources to confirm their positive self-image than those low in trait self-esteem (Josephs, Larrick, Steele, & Nisbett, 1992; Larrick, 1993; Steele, 1988; Steele, Spencer, & Lynch, 1993). Therefore, trait self-esteem buffers responds to insulting information. People with high trait self-esteem are more likely to accept an offending but profitable offer than those with low trait self-esteem. They do not have to sacrifice money to protect their self-esteem because they can assure their positive self-concept through other routes. The utility of self-esteem should be added in economic models to promote the accurate understanding of human choices.

### ***Concluding Remarks***

The present research provides a new approach in understanding the role of self-esteem in financial choices. Both money and self-esteem are valued by human beings. They are associated with one another because a payment may carry utility of self-esteem. Money may imply the competence of its owner. The utility of self-esteem contributes to the total satisfaction derived from the payment. Money and self-esteem are connected because their functions overlap. Both of them motivate desirable behavior. Therefore, the monetary utility and utility of self-esteem carried by an option partly compensate for one another. Money and self-esteem are distinctive types of utility because each of them has its unique functions. People have to decide between them in certain situations. Their choices are influenced by situational need for money, trait self-esteem, and the financial cost of dignity.

This research addresses the relationship between money and self-esteem in decision making. The findings have implications to research in psychology, economics and organizational behavior. The augmentation effect indicates that not only the monetary value, but also the meaning of money, influences the receivers' satisfaction. The substitution effect suggests that one party may provide the utility of self-esteem to the other party in order to make up for the lack of monetary utility. The competition effect shows that people may turn down financial benefits to gain utility of self-esteem. The present research provides a new perspective in studying the fungibility of money, the compensation for monetary resources, and violations of financial rationality. It provides an integrative approach in understanding human choices.

## Note

1. In this study, an unsuccessful manipulation of self-esteem boost was included. In most of the successful manipulations, participants usually completed a task. However, in this study, participants did not work on any test before they were given the following information. In the self-esteem boost condition, participants were told, “You have just taken a new intelligence test, and your score is among the top 10%.” In the ego-threat condition, participants were told, “You have just taken a new intelligence test, and your score is among the bottom 10%.” In the control condition, participants were not given any instruction on the intelligence test. The results showed that the manipulation did not work. Participants in the three conditions rated their self-esteem to be similarly boosted,  $F < 1$ , *ns*. It also did not have any main effect or interaction effect on participants’ decisions. The impact of self-esteem boost on the responders’ choices in the ultimatum game was addressed in Zhang (2004) and was further explored in Zhang and Baumeister (2008).

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