Psychometric properties of the Chinese version of the Dispositional Greed Scale and a portrait of greedy people

Zhenzhen Liu, Xiaomin Sun⁎, Xuechen Ding, Xinyan Hu, Zhengqi Xu, Ze Fu

ABSTRACT

Greed is ubiquitous in human existence. However, empirical research on greed is surprisingly rare, in part due to a lack of sound scales to measure it. This article reports on 3 studies that test the Chinese version of the Dispositional Greed Scale (DGSC) using 4 samples with a total of 1048 participants. Study 1 and study 2 provide evidence for the factorial validity, internal consistency, convergent validity and criterion-related validity of the DGSC. Study 2 and study 3 present evidence for the concurrent validity of the DGSC from three aspects: a) the DGSC was positively correlated with Belief in a Zero-Sum Game and subjective socio-economic insecurity; b) the DGSC was negatively correlated with all facets of core self-evaluations (i.e., self-esteem, generalized self-efficacy, locus of control, neuroticism) except neuroticism, with which the DGSC was positively correlated; and c) the DGSC was negatively correlated with all facets of external core evaluations (i.e., trust in people, belief in a just world, belief in a benevolent world). These findings provide new insight into the nomological net of greed and shed light on the beliefs and behaviors of greedy people in economic transactions and their fundamental attitudes toward the self, others and the external environment.

1. Introduction

There is a popular perception that greed has dramatically increased in societies. In the United States, the 1980s have been referred to as the “Greed Decade” and the 1990s as the “New Gilded Age” (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004). The last three decades have witnessed a series of reckless and unbridled acts of greed, such as the scandals of Wall Street investment banking (Wargo, Baglini, & Nelson, 2009) and Bernie Madoff’s long-running Ponzi scheme (Wang & Murnighan, 2011). From corporate scandals or financial crimes to ubiquitous greedy behavior in our daily lives, greed is omnipresent in today’s societies.

However, empirical research on the topic is scarce, which is partly due to a lack of a consistent definition of greed (Wang & Murnighan, 2011). Mussel, Reiter, Osinsky, and Hewig (2015, p. 126) regard greed as the “desire to get more at all costs”. Veselka, Giammarco, and Vernon (2014, p. 76) defined greed as “the tendency to manipulate and betray others for personal gain.” Both of these definitions emphasize the “cost to others”, which means that greed is socially harmful. However, agreement has not been reached on whether “at the expense of others” is an indispensable element of being greedy. For example, based on the findings of greed’s high correlation with meanness (Mussel, Hewig, 2016), and greedy individuals tending to keep more money for themselves in economic games (e.g., Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015), Mussel and Hewig (2016) proposed that the negative consequences of one’s striving for desired goods is a key difference between the excessive striving of greedy individuals and the mere desire of accumulation. However, they also noted the need for more systematic research to clarify this distinction. On the other hand, Seuntjens (2016, p. 191) asserts that “harms others” should be viewed as “a consequence of greed, rather than inherent to being greedy”. The author’s argument is based on a prototype analysis that explored lay conceptualizations of greed (Seuntjens, Zeelenberg, Breugelmans, & van de Ven, 2015).

In addition, the prototype analysis of Seuntjens, Zeelenberg, Breugelmans, and van de Ven (2015) indicated that the core of the experience of greed consisted of the desire to acquire more and the dissatisfaction of never having enough. Consequently, they constructed a definition of greed as “the experience of desiring to acquire more and the dissatisfaction of never having enough” (Seuntjens, Zeelenberg, Breugelmans, & van de Ven, 2015, p. 518). As pointed out by Mussel, Rodrigues, Krumm, and Hewig (2018), a distinct feature of this definition is the inclusion of a negative emotional aspect—the dissatisfaction of never having enough—which means that greedy people do not...
simply strive for more but are also frustrated by not having enough. Consistently with other researchers, Krekels and Pandelaere (2015, p. 225) also regarded “insatiability” as the center of greed, and therefore, defined greed as “an insatiable desire for more resources, monetary or other.” However, contrary to the assertion of Mussel et al. (2015) and Veselka et al. (2014) that greed is at the expense of others, both Seuntjens, Zeelenberg, Breugelmans, and van de Ven (2015) and Krekels and Pandelaere (2015) do not emphasize the social harmfulness of greed.

Another important difference among existing greed definitions is that Krekels and Pandelaere (2015) and Seuntjens, Zeelenberg, Breugelmans, and van de Ven (2015) conceptualized greed as distinct from materialism (Mussel et al., 2018). Materialism refers to the importance that individuals attach to worldly possessions (Belk, 1985). The results from the prototype analysis of Seuntjens, Zeelenberg, Breugelmans, and van de Ven (2015) indicated that besides materialistic objects such as money, individuals also reported nonmaterialistic objects, such as power, as exemplars of greed. These results indicate that although both greed and materialism emphasize materialistic desires, greed is a broader construct not limited to materialistic desires. The definition of Krekels and Pandelaere (2015) shares the same view that greedy behavior might be directed toward various domains beyond money.

To measure individual differences in dispositional greed, there are five scales in the literature, namely, the greed subscale of the Virtues and Vices Scale (VAVS, Veselka et al., 2014), the Greed Trait Measure (Mussel et al., 2015), the GREED scale (Mussel & Hewig, 2016), the Dispositional Greed Scale (DGS) developed by Krekels and Pandelaere (2015), and another DGS developed by Seuntjens, Zeelenberg, van de Ven, and Breugelmans (2015).

There are some differences among these instruments. On the definitional level, the theory on which the two DGS measures are based focuses exclusively on the central components of greed without including the element of social harmfulness in the definition of greed. Another merit of the two DGS scales is that they both are based on a conceptualization of greed as distinct from materialism (Mussel et al., 2018). On the item level, all five scales contain items referring to “insatiability.” However, both the greed subscale of the VAVS (Veselka et al., 2014) and the Greed Trait Measure (Mussel et al., 2015) include specific items referring to the negative effects of greed on others, whereas the two DGS measures (Krekels & Pandelaere, 2015; Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015) and the GREED scale (Mussel & Hewig, 2016) do not. It is worth noting that although the definition of greed used in the DGS developed by Seuntjens, Zeelenberg, van de Ven, and Breugelmans (2015) contains negative emotionality, no items in the scale reflect this aspect.

To investigate whether these five scales can be used interchangeably, Mussel et al. (2018) recently provided a timely empirical comparison of the scales. They found that the five scales have no significant difference in reliability and criterion-related validity, but there are some slight differences in construct-related validity. For example, the correlation between the GREED scale and materialism was significantly higher than the correlations between the two DGS measures and materialism. In general, the results support the notion that the five scales are all well suited to measure dispositional greed.

Seuntjens (2016) also conducted a study to assess the above-mentioned greed measurement instruments, except the GREED scale (an extended version of the Greed Trait Measure), with regard to their factorial validity. However, some differences were found among these scales. The results suggested that only the two DGS measures remain unidimensional, as expected. In addition, principal component analysis on all items of the four scales indicated that the DGS designed by Seuntjens, Zeelenberg, van de Ven, and Breugelmans (2015) was the only scale in which all items fell into the first factor, which was the most important factor comprising items about the insatiable desire to acquire more—the core characteristic of dispositional greed. These results presented evidence for the stable factor structure of the DGS constructed by Seuntjens, Zeelenberg, van de Ven, and Breugelmans (2015).

Similar to the rising trend of greed in the United States, greed also has dramatically increased in China. For example, the Ponzi scheme, in which most participants are driven by greed (Murray, 1999; Tennant, 2011), have been booming in China in recent years, involving 31 provinces and approximately 87% of Chinese cities (Wang, 2014). However, research on greed is rare, and no instruments assessing dispositional greed are available in Chinese. After taking into account the definitions on which the five Dispositional Greed Scales were developed, the key features of the items, and the research results aimed at detecting the fine-grained differences among these measures (for detailed findings, see Mussel et al. (2018) and Seuntjens (2016)), we chose the DGS developed by Seuntjens, Zeelenberg, van de Ven, and Breugelmans (2015) and validated its Chinese version (i.e., the Chinese version of the Dispositional Greed Scale, DGSC) in the current study. Extant literature also supports the adequacy of the psychometric properties of the DGS, including its internal consistency, temporal stability, and construct and discriminant validity (Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015).

Concerning construct-related validity, two variables are particularly related to dispositional greed: materialism (Belk, 1985) and psychological entitlement (Campbell et al., 2004). Although materialism and greed are different constructs, they share a big overlap as reasoned before. Psychological entitlement was conceptualized as “a stable and pervasive sense that one deserves more and is entitled to more than others” (Campbell et al., 2004, p. 31). This sense of entitlement may justify one’s greedy behavior. Thus, we propose that greed and materialism should be strongly related, as should greed and psychological entitlement.

We demonstrated criterion-related validity by examining whether the DGSC can predict the amount of money people allocated to themselves in dictator games. Since greedy people always want more and will never be satisfied, we hypothesize that dispositional greed positively predicts the amount of money allocated to oneself in dictator games. In fact, this tendency had been confirmed in previous studies (Mussel & Hewig, 2016; Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015).

Since greed is usually conceptually and practically related to money, the current study explored the relations between dispositional greed and two related variables: Belief in a Zero-Sum Game (BZSG) and subjective socio-economic insecurity. BZSG is a general belief system concerning the antagonistic nature of social relations. It is based on the implicit assumption that a finite amount of resources exists in the world, the acquisition of which is possible only at the cost of others (Różyczka-Tran, Boski, & Wojciszke, 2015). We expected that greedy people tend to hold a higher level of BZSG. They perceive others’ gains as their personal losses. To avoid a disadvantaged situation, they respond by acquiring more. Subjective socio-economic insecurity is a sense of insecurity arising from one’s perceptions of the risk of socioeconomic misfortune in the near future (Dominitz & Manski, 1997). We would argue that it is a natural response to acquire as much as possible when people anticipate an unstable or reduced flow of income and/or other important resources in the future. Therefore, we hypothesize that greed was positively correlated with both BZSG and subjective socio-economic insecurity.

The current study also explored the deepest assumptions that greedy people hold about themselves. Since core self-evaluations (CSEs) are the fundamental, subconscious conclusions individuals reach about themselves, the current study tested the relations between dispositional greed and different facets of CSEs, namely, self-esteem, generalized self-efficacy, locus of control and neuroticism (Judge, Locke, & Durham, 1997). Self-esteem is the overall value that one places on oneself as a person (Harter, 1990). Generalized self-efficacy concerns one’s perceived ability to cope with difficulties and to perform well in
challenging situations (Judge et al., 1997). Both self-esteem and generalized self-efficacy represent self-evaluative tendencies (Lanaj, Chang, & Johnson, 2012). Locus of control refers to the degree to which individuals believe that events in their lives are controlled by internal (e.g., ability or other personal characteristics) or external (e.g., luck or fate) factors (Rotter, 1966). The last component of core self-evaluation is neuroticism, which is the negative pole of self-esteem. Highly neurotic individuals tend to be anxious, insecure, and dissatisfied with themselves and view themselves as victims (Clark & Watson, 1991).

CSEs can be classified as personal resources (Schaufeli & Taris, 2014), i.e., “the psychological characteristics or aspects of the self that are generally associated with resiliency and that refer to the ability to control and impact one’s environment successfully” (Schaufeli & Taris, 2014, p. 45). It is reasonable to argue that people with low CSEs tend to be greedier due to their perception of scarcity in personal resources. Their low self-evaluations and strong sense of being controlled externally might serve as a strong motive for them to acquire as much as possible. The act of acquisition itself might serve as a way for them to compensate for their sense of inferiority and lack of internal control. Therefore, this study hypothesized that CSEs are negatively related to dispositional greed.

Finally, the current study invested how greedy people perceive their external environment. Since external core evaluations (ECEs) are appraisals that individuals make of their environment, which pertains to others (trust in people) and the world (belief in a just world and in a benevolent world) (Judge et al., 1997), the current study tested the relations between dispositional greed and ECEs. Social trust concerns one’s core assumptions about the basic nature of other people (Judge et al., 1997). Belief in a benevolent world pertains to people’s belief in whether it is possible to acquire happiness and successfully achieve the values they cherish in life (Peikoff, 1991). Belief in a just world refers to the belief that the world is a just and orderly place in which individuals can get what they deserve (Lerner & Miller, 1978). It is reasonable to argue that people who distrust others and hold a negative view of the outside world tend to be greedier. Lacking trust toward others makes individuals focus more or even exclusively on their own self-interest. Holding the belief that they are living in an unjust and frustrating world can make people desperately grasp whatever comes to them and possess as much as possible. Therefore, we hypothesize that ECEs should be negatively correlated with greed.

In sum, the factorial validity, convergent validity, and internal consistency of the DGSC were attested in study 1. The criterion-related validity of the DGSC was tested in study 2. Serving as evidence for the concurrent validities of the DGSC, the relations between the DGSC and BZSG, subjective socio-economic insecurity, CSEs and ECEs were explored in study 2 and study 3. The study was reviewed and approved by the Academic Ethics Committee of the Faculty of Psychology at the author’s institute before being conducted. All research data of this study are available at Mendeley Data (http://dx.doi.org/10.17632/csgs546vxy.1).

2. Study 1

2.1. Translation

First, two graduate students with a major in English literature were invited to first translate the original DGS into simplified Chinese independently and then compare and evaluate the two copies of the translated DGS jointly. Although the two copies were consistent in meaning, there were still some different expressions. The two graduate students re-read the original English text and reached a consensus about the best simplified Chinese version of the DGS.

Second, another two graduate students who majored in English literature were invited to back-translate the Chinese version of the DGS into English. Neither of them had previous knowledge about the DGS. After the back-translation, the four postgraduate students worked collaboratively to compare the two back-translated versions with the original DGS and reached a conclusion that they are consistent with the original DGS in meaning.

2.2. Participants and procedure

A total of 133 participants (sample A) (71 females; Mage = 33.36, SD = 6.82, with one unknown age) were recruited from a paid research participation system (www.sojump.com) and passed the validity check. Because the data were collected online, an online informed consent form was posted on the front page of the study, and an “I accept” button then provided participants access into the study. All participants provided their consent by pressing the “I accept” button. At the end of the study, participants received online debriefing information according to the established committee guidelines and received 5–10 RMB for their participation. The same procedure was also applied to the following studies. After giving their consent, all participants completed the DGSC and the Psychological Entitlement Scale (Campbell et al., 2004). The Exploratory Factor Analysis (EFA) of the DGSC was conducted using this sample.

A total of 303 participants (sample B) (female = 168, Mage = 32.10, SD = 6.96) were recruited from a paid research participation system (www.sojump.com) and passed the validity check. After giving their consent, all participants completed the DGSC and the Material Values Scale (MVS, Richins & Dawson, 1992). The Confirmatory Factor Analysis (CFA) of the DGSC was conducted using sample B.

2.3. Measures

2.3.1. Dispositional greed

Greed was measured by the DGSC, the Chinese version of the DGS (Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015), which contains 7 items. In both samples, items were rated using a 7-point scale (1 = strongly disagree, 7 = strongly agree).

2.3.2. Psychological entitlement

Psychological entitlement was measured by the Psychological Entitlement Scale (Campbell et al., 2004). Nine items (α = 0.91) assess the sense of entitlement experienced across situations (e.g., “I feel entitled to more of everything”), which were rated on a 7-point scale (1 = strongly disagree, 7 = strongly agree), with higher scores representing higher levels of psychological entitlement.

2.3.3. Materialism

Materialism was measured by the Material Values Scale (MVS: Richins & Dawson, 1992). There are 18 items (α = 0.91) assessing three components: acquisition centrality (e.g., “I like a lot of luxury in my life”, α = 0.85), acquisition as the pursuit of happiness (e.g., “I’d be happier if I could afford to buy more things”, α = 0.72), and possession-defined success (e.g., “I admire people who own expensive homes, cars, and clothes”, α = 0.79). All items were rated on a 7-point scale (1 = strongly disagree, 7 = strongly agree), with higher scores representing higher levels of materialism.

2.4. Results

2.4.1. EFA

The EFA was conducted to explore the factor structure of the DGSC on the data from sample A using principal axis factoring. The Kaiser–Meyer–Olkin (KMO) value was 0.90, which was greater than the acceptable limit of 0.50 (Kaiser, 1974), and the Bartlett’s test of sphericity was significant (χ²(21) = 616.44, p < 0.001), both of which suggested the suitability of the data to perform EFA. There was only one factor with an eigenvalue above 1 (4.29). Both the eigenvalue (Hattie, 1985) and the score plot (Cattell, 1966; Hattie, 1985) suggested that a uni-dimensional factor model was more appropriate. The single factor...
2.4.2. CFA

CFA was conducted on sample B with Mplus 7.11 (Muthén & Muthén, 1998–2015). The results of the CFA revealed good model fit of the DGSC (see Table 2). The comparative fit index (CFI; Bentler, 1990) was 0.98, and the Tucker-Lewis index (TLI; Tucker & Lewis, 1973) was 0.97, both of which exceed the cutoff value of 0.95 and indicate good fit of the model (Hu & Bentler, 1998; Hu & Bentler, 1999). The root mean square error of approximation (RMSEA; Steiger & Lind, 1980) was 0.07, and the standardized root mean square residual (SRMR) was 0.02, both of which indicate good fit (Browne & Cudeck, 1993; Hu & Bentler, 1999). Item loadings (see Fig. 1) range from 0.61 to 0.83, with 6 of the 7 > 0.70, indicating a good model fit.

2.4.3. Internal consistency and convergent validity

The Cronbach’s α of the DGSC was 0.91 in sample A and 0.91 in sample B. As expected, the DGSC was strongly correlated with both materialism (r = 0.67, p < 0.001, two-tailed) and psychological entitlement (r = 0.59, p < 0.001, two-tailed), indicating good convergent validity of the DGSC.

In sum, based on the two samples, the results of study 1 attested to the good factorial validity, internal consistency and convergent validity of the DGSC.

3. Study 2

In study 2, we demonstrated the criterion-related validity of the DGSC by examining whether the DGSC can significantly predict the amount of money people allocate to themselves in dictator games. In addition, we also explored the relations between the DGSC and two economics-related beliefs and perceptions: BZSG and subjective socio-economic insecurity.

Table 1

<table>
<thead>
<tr>
<th>Item</th>
<th>Loadings</th>
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<tbody>
<tr>
<td>G1</td>
<td>0.88</td>
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<tr>
<td>G2</td>
<td>0.80</td>
</tr>
<tr>
<td>G3</td>
<td>0.71</td>
</tr>
<tr>
<td>G4</td>
<td>0.86</td>
</tr>
<tr>
<td>G5</td>
<td>0.88</td>
</tr>
<tr>
<td>G6</td>
<td>0.78</td>
</tr>
<tr>
<td>G7</td>
<td>0.51</td>
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</tbody>
</table>

explains 61.23% of the total variance of the 7 items. Item loadings (see Table 1) are considerably high: all the loadings are above 0.50, with 6 of the 7 > 0.70. These results indicated the appropriateness of a single-factor structure of the DGSC.

3.1. Participants and procedure

A total of 303 participants (184 females; Mage = 36.41, SD = 8.99) were recruited from a paid research participation system (www.sojump.com) and passed the validity check, following the same procedures used for sample A. After giving their consent, all participants completed the DGSC, along with other measures described below. All scales used in study 2 and study 3 were translated into simplified Chinese following the same back-translation procedure described in study 1, except for the scales assessing neuroticism and generalized self-efficacy, because published Chinese versions of these scales were available.

3.2. Measures

3.2.1. Dispositional greed

Greed was measured by the same DGSC (α = 0.89) used in study 1.

3.2.2. The amount of money allocated to self in dictator games

The dictator game is a two-player game in which the dictator (one player) receives a certain amount of money (10 RMB in the current study) and had the privilege of deciding how to split the money between him- or herself and the receiver (another player). The receiver, however, has no influence over the distribution of the money. Researchers suggest that greed is one of the motivations for dictators to allocate more money to themselves and less to the receiver (Haseleu & Mellers, 2005; Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015).

3.2.3. BZSG

BZSG was measured by the Zero-Sum Game Belief Scale (Różycka-Tran et al., 2015). This scale was developed to measure the beliefs that one’s gain is possible only at the cost of another person (e.g., “Successes of some people are usually failures of others”). In the current study, 8 items (α = 0.90) were rated using a 7-point scale (1 = strongly disagree, 7 = strongly agree), with higher scores indicating a higher level of zero-sum game beliefs.

3.2.4. Subjective socio-economic insecurity

We measured subjective socio-economic insecurity using 10 items, 5 of which (α = 0.85) measured insecurity about the individual’s personal situation (e.g., “How likely is it that during the next 12 months, you will be unemployed and looking for work for at least four consecutive weeks?”) and 5 items (α = 0.89) measuring insecurity about the macrosocial and macroeconomic system (e.g., “How concerned you are about the possibility that increasing income inequality will lead to social problems?”). Four of these items were adapted from Mau, Mewes, and Schöneck (2012) and Costelloe, Chiricos, and Gertz (2009), and another six of them were developed by our team specifically for this study. For all 10 items (α = 0.87), the response scale ranged from 1 (not at all likely) to 7 (very likely), with higher scores indicating higher levels of subjective socio-economic insecurity.

3.2.5. Demographic variables

Demographic variables, including gender, age and levels of education, were collected. Participants’ gender was dummy coded, with female coded as “0” and male coded as “1”. Levels of education were coded into six categories, with “primary school or below” coded as “1”, “middle school” coded as “2”, “high school” coded as “3”, “junior college” coded as “4”, “college or university” coded as “5” and “post-graduate” coded as “6”.

3.3. Results

Table 3 presents the means, standard deviations, and zero-order correlations of variables in study 2.

The results in Table 3 indicate that the DGSC was positively
correlated with the amount of money allocated to oneself in dictator games, as expected. In addition, the results of a two-step hierarchical regression analysis (see Table 4) suggest that the DGSC positively predicted the amount of money allocated to oneself in dictator games ($\beta = 0.22, t(298) = 3.73, p < 0.001$), controlling for the effect of gender, age and levels of education.

Results for the relations between the DGSC and BZSG, subjective socio-economic insecurity and demographic variables are also shown in Table 3. The DGSC was positively correlated with BZSG and subjective socio-economic insecurity. Interestingly, when looking into the correlation pattern between greed and different aspects of insecurity, we found that dispositional greed was significantly correlated only with individual-level socio-economic insecurity and not with macro-level insecurity.

Correlations between the DGSC and demographic variables revealed that males are significantly greedier than females. The results also revealed that greed is negatively correlated with age, suggesting that the level of greed significantly decreases with increasing age. The correlation between dispositional greed and education levels is marginally significant.

Table 3
Descriptive statistics and correlations among variables in study 2 ($N = 303$).

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>7A</th>
<th>7B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>2. Age</td>
<td>0.19**</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>3. Education</td>
<td>-0.13*</td>
<td>-0.22***</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>4. DGSC</td>
<td>0.13*</td>
<td>-0.15**</td>
<td>-0.10*</td>
<td>(0.89)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>5. MAS</td>
<td>-0.01</td>
<td>-0.16*</td>
<td>0.11*</td>
<td>0.22***</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>6. BZSG</td>
<td>0.13*</td>
<td>-0.17*</td>
<td>-0.12</td>
<td>0.36***</td>
<td>0.15</td>
<td>(0.90)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>7. SSEI</td>
<td>0.06</td>
<td>-0.02</td>
<td>-0.14*</td>
<td>0.13*</td>
<td>0.02</td>
<td>0.35**</td>
<td>(0.87)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>7A. SSEI-I</td>
<td>0.09</td>
<td>-0.07</td>
<td>-0.18**</td>
<td>0.17**</td>
<td>0.03</td>
<td>0.24**</td>
<td>0.81***</td>
<td>(0.85)</td>
<td>–</td>
</tr>
<tr>
<td>7B. SSEI-M</td>
<td>0.003</td>
<td>0.03</td>
<td>-0.05</td>
<td>0.06</td>
<td>-0.001</td>
<td>0.34***</td>
<td>0.84***</td>
<td>0.36***</td>
<td>(0.89)</td>
</tr>
<tr>
<td>M</td>
<td>–</td>
<td>36.41</td>
<td>4.91</td>
<td>4.20</td>
<td>5.96</td>
<td>4.25</td>
<td>3.63</td>
<td>2.67</td>
<td>4.59</td>
</tr>
<tr>
<td>SD</td>
<td>–</td>
<td>8.99</td>
<td>0.73</td>
<td>1.28</td>
<td>2.17</td>
<td>1.31</td>
<td>1.07</td>
<td>1.24</td>
<td>1.35</td>
</tr>
</tbody>
</table>

Note. MAS: the amount of money allocated to self in dictator games, SSEI: subjective socio-economic insecurity, SSEI-I: subjective socio-economic insecurity—individual level, SSEI-M: subjective socio-economic insecurity—macro level. Values in the brackets are coefficient alpha values.

† $p < 0.10$.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$ (two-tailed).

4. Study 3

In study 3, we explored how greedy people think about themselves, others and the world around them by testing the relations between dispositional greed and all facets of CSEs (self-esteem, self-efficacy,
Table 5 Descriptive statistics and correlations among variables in study 3 (N = 309).

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<td>1. Gender</td>
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<tr>
<td>2. Age</td>
<td>0.08</td>
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<tr>
<td>3. Education</td>
<td>-0.14</td>
<td>-0.15</td>
<td>-0.05</td>
<td>(0.91)</td>
<td></td>
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<tr>
<td>4. DGSC</td>
<td>0.12</td>
<td>-0.10</td>
<td>-0.05</td>
<td>(0.91)</td>
<td></td>
<td></td>
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<tr>
<td>5. Self-esteem</td>
<td>-0.17</td>
<td>0.23*</td>
<td>0.25**</td>
<td>-0.18*</td>
<td>-0.18*(0.92)</td>
<td></td>
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<tr>
<td>6. GSE</td>
<td>-0.04</td>
<td>0.11*</td>
<td>0.15**</td>
<td>-0.20**</td>
<td>0.70**(0.91)</td>
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<tr>
<td>7. Locus of control</td>
<td>-0.19</td>
<td>0.04</td>
<td>0.11*</td>
<td>-0.34**</td>
<td>0.65**(0.91)</td>
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<tr>
<td>8. Neuroticism</td>
<td>0.21</td>
<td>-0.14</td>
<td>-0.22**</td>
<td>0.33**</td>
<td>-0.72** (0.96)</td>
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<tr>
<td>9. Trust in people</td>
<td>-0.16</td>
<td>-0.03</td>
<td>0.07</td>
<td>-0.36**</td>
<td>0.34**</td>
<td>0.27**</td>
<td>0.49**</td>
<td>-0.44** (0.74)</td>
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<tr>
<td>10. BBW</td>
<td>-0.12</td>
<td>0.11*</td>
<td>0.04</td>
<td>-0.16**</td>
<td>0.60**</td>
<td>0.51**</td>
<td>0.53**</td>
<td>-0.54** (0.79)</td>
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<tr>
<td>11. BJW</td>
<td>-0.16</td>
<td>-0.02</td>
<td>0.05</td>
<td>-0.25**</td>
<td>0.57**</td>
<td>0.65**</td>
<td>0.59**</td>
<td>-0.57** (0.79)</td>
<td></td>
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<tr>
<td>M</td>
<td>32.61</td>
<td>4.83</td>
<td>4.33</td>
<td>5.72</td>
<td>5.34</td>
<td>4.82</td>
<td>2.87</td>
<td>4.19</td>
<td>5.53</td>
<td>5.40</td>
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<tr>
<td>SD</td>
<td>6.54</td>
<td>0.69</td>
<td>1.26</td>
<td>0.88</td>
<td>0.76</td>
<td>0.73</td>
<td>1.22</td>
<td>0.96</td>
<td>0.72</td>
<td>0.78</td>
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Notes. GSE: generalized self-efficacy, BBW: belief in a benevolent world, BJW: belief in a just world. Values in the brackets are coefficient alpha values.

* p < 0.10.
* * p < 0.05.
* * * p < 0.01.
* * * * p < 0.001 (two-tailed).

locus of control and neuroticism) and ECEs (trust in people, belief in a benevolent world and belief in a just world).

4.1. Participants and procedure

A total of 309 participants (female = 151, M_age = 32.61, SD = 6.54, with 3 missing values in age) were recruited from a paid research participation system (www.sojump.com) and passed the validity check, following the same procedures used in sample A. After giving their consent, all participants completed the DGSC, along with the measures assessing CSEs and ECEs.

4.2. Measures

4.2.1. Dispositional greed

Greed was measured by the same DGSC (α = 0.91) used in study 1.

4.2.2. CSEs

4.2.2.1. Self-esteem. Self-esteem was measured by the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The 10 items (e.g., “On the whole, I am satisfied with myself”) were rated on a 7-point scale (1 = strongly disagree, 7 = strongly agree). Previous research suggested that the eighth item is inappropriate for Chinese participants because of cultural differences (Tian, 2006). After deleting this item, α is 0.92 in the current study.

4.2.2.2. Generalized self-efficacy. Generalized self-efficacy was measured with the Chinese version of the Generalized Self-Efficacy Scale (Zhang & Schwarzer, 1995). Ten items (α = 0.91) assessed general self-beliefs about one’s ability to address a variety of difficulties in life (e.g., “I can solve most problems if I invest the necessary effort”) and were rated using a 7-point scale (1 = strongly disagree, 7 = strongly agree).

4.2.2.3. Locus of control. It was measured by the Internal, Powerful Others, and Chance Scale (IPC; Levenson, 1974). The IPC consists of 24 items (α = 0.91) with three dimensions (8 items each): internality (e.g., “My life is determined by my own actions”, α = 0.77), powerful others externality (e.g., “My life is chiefly controlled by powerful others”, α = 0.89), and chance externality (e.g., “To a great extent, my life is controlled by accidental happenings”, α = 0.81). In the current study, participants were asked to rate each item on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scores of each item were averaged into a composite score to produce a single score of locus of control for each participant, with higher scores indicating more internal than external locus of control.

4.2.2.4. Neuroticism. Neuroticism was measured with the N-scale of the Chinese version of the Eysenck Personality Questionnaire Revised Short Scale (EPQ-RS; Qian, Wu, Zhu, & Zhang, 2000). Twelve items (e.g., “My mood often goes up and down”, α = 0.96) were rated on a 7-point scale (1 = strongly disagree, 7 = strongly agree), with higher scores indicating higher levels of neuroticism.

4.2.3. ECEs

4.2.3.1. Trust in people. This variable was measured with four items from the Rosenberg Faith in People Scale (Rosenberg, 1956). Items (e.g., “Most people can be trusted”, α = 0.74) were rated on a 7-point scale (1 = strongly disagree, 7 = strongly agree), with higher scores indicating higher degree of confidence in the trustworthiness of people in general.

4.2.3.2. The belief in a benevolent world. This variable was assessed by six items, two from Judge, Locke, Durham, and Kluger (1998) (e.g., “It is possible to attain happiness in this world”) and four from Janoff-Bulman (1989) (e.g., “There is more good than evil in the world”). These items (α = 0.79) were rated on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating higher levels of the belief that happiness and the successful achievement of values are possible in life.

4.2.3.3. Belief in a just world. This variable was measured with the Personal Belief in a Just World Scale (PBJWS: Dalbert, 1999). Seven items (e.g., “I am usually treated fairly”, α = 0.90) were rated on a 7-point scale (1 = strongly disagree, 7 = strongly agree), with higher scores indicating higher levels of the belief that one is treated fairly and that the world is just.

4.2.4. Demographic variables

Gender, age and levels of education were collected and coded in the same way as in study 2.

4.3. Results

Table 5 presents the means, standard deviations, and zero-order correlations of variables in study 3.
Results suggested that the DGSC was significantly correlated with CSEs, as expected. Specifically, the DGSC was negatively correlated with self-esteem, generalized self-efficacy, and locus of control; and it was positively correlated with neuroticism. The results also suggested that the correlations among different facets of CSEs are rather high, which demonstrate that the different aspects of CSEs are closely related to each other.

On the other hand, the DGSC was negatively correlated with ECEs. Specifically, the DGSC was negatively correlated with trust in people, belief in a benevolent world and belief in a just world. The results also suggested that the correlations among different facets of ECEs are relative high, which suggested that people's general belief toward others and their evaluation of the outside world are rather consistent in general.

The correlation between the DGSC and demographic variables suggested that males are significantly greedier than females, which is consistent with the result in study 2. The correlation between greed and age is marginally significant. No significant relation between greed and education levels was found in the study.

In sum, the results of study 3 suggested some major characteristics of greedy people: low self-esteem and low generalized self-efficacy with an external locus of control and, often, emotionally instability. In addition, they tend to distrust others and believe that the world around them is malevolent and unjust.

5. General discussion

In studies involving a total of 1048 participants ($M_{age} = 33.66$, $SD = 7.68$) and four different samples, this study demonstrated that the Chinese version of the DGS could be a useful measurement to assess dispositional greed in China. First, the DGSC showed good factorial validity. The results of the EFA indicate that the DGSC has a unidimensional factor structure, similar to the original DGS (Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015), and the results of the CFA demonstrated satisfactory goodness-of-fit between the data and the factor structure with high item loadings. Second, the internal consistencies were good in all 4 samples (the Cronbach's alpha ranging from 0.89 to 0.91), rivaling that of the original DGS. Third, the DGSC had good convergent validity with measures of materialism and psychological entitlement. Fourth, the DGSC significantly predicted the amount of money allocated in dictator games, indicating good criterion-related validity. In addition, the relations between the DGSC and the following three aspects of variables demonstrated rich concurrent validity of the scale: a) the DGSC was positively correlated with BZSG and subjective socio-economic insecurity; b) the DGSC was negatively correlated with all facets of CSEs (i.e., self-esteem, generalized self-efficacy, locus of control, neuroticism) except neuroticism, with which it was positively correlated; and c) the DGSC was negatively correlated with all facets of ECEs (i.e., trust in people, belief in a benevolent world, belief in a just world).

Previous research has suggested that greedy individuals tend to compare themselves to others and envy others (Krekels & Pandelaere, 2015; Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015), have less concern for others (Krekels & Pandelaere, 2015; Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015), and demonstrate lower perspective taking and empathic concern (Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015). Such individuals are more productivity-oriented, have a strong desire to win (Krekels & Pandelaere, 2015), and take higher risks to maximize monetary outcome (Mussel et al., 2015); however, their life satisfaction is generally lower (Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015). The current study provides new insights into the nomological net of greed and depicts a vivid portrait of greedy individuals. First, such individuals tend to believe that one's gain is based on others' loss, perceive their socio-economic conditions as insecure, and keep more money for themselves whenever possible. Second, they have a lower level of self-esteem, lack emotional stability and confidence in their ability to overcome difficulties and tend to believe that outcomes in their lives are controlled by powerful others and chance rather than themselves. Finally, they tend to regard others as less trustworthy, holding the belief that the world is malevolent and unjust.

Although the current study chose the DGS developed by Seuntjens, Zeelenberg, van de Ven, and Breugelmans (2015) to validate the respective Chinese version, the five Dispositional Greed Scales are almost identical, as noted by Mussel et al. (2018). The findings of the current study provide evidence of not only the reliability and validity of DGSC but also the chance to better understand the greed construct itself and disentangle various theoretical views in the field.

First, all the various approaches mentioned in the introduction above agree that a core element of greed is the insatiable desire to acquire more (Krekels & Pandelaere, 2015; Mussel et al., 2015; Mussel & Hewig, 2016; Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015; Veselka et al., 2014). Findings of the current study provide supportive evidence in this regard. Specifically, we found that the greedier individuals are, the larger the amounts of money they tend to allocate to themselves in dictator games. Furthermore, greed is highly correlated with psychological entitlement. These results suggested that greedy individuals not only acquire more but also tend to have a sense of entitlement and hold the opinion of being entitled to more.

In addition, we found that dispositional greed is significantly correlated with CSEs and subjective socio-economic insecurity, which may explain why greedy individuals always want more. On the one hand, CSEs can be classified as personal resources (Schaufler & Taris, 2014). The negative relationship between CSEs and greed indicates that greedy individuals tend to perceive their personal resources as being scarce. On the other hand, the positive correlation between subjective socio-economic insecurity and greed suggests that greedy individuals tend to have the perception that their socio-economic conditions are insecure. From the evolutionary perspective, greed may have evolved as a kind of adaptation to cope with resource insecurity and scarcity, because taking as much as possible may increase the chances of survival (Cassill & Watkins, 2005; Robertson, 2001). Previous research found that individuals who grew up in relative scarcity tended to be greedier (Krekels, 2015; Poluektova, Efremove, & Breugelmans, 2015). Similarly, greedy behavior may also serve as an adaptive behavior to cope with personal resource scarcity. By acquiring as much as possible, greedy people expect that they can alleviate their sense of inferiority and lack of internal control. In summary, subjective socio-economic insecurity and CSEs may serve as external and internal antecedent variables of greed, respectively. However, more systematic research is needed to assess this hypothesis.

Furthermore, when delving into the two dimensions of subjective socio-economic insecurity, we found that dispositional greed was positively correlated with a sense of insecurity about one's personal circumstances, such as job insecurity and overall personal financial condition. However, we found that the relationship between greed and perception of insecurity about the macrolevel social and economic systems (e.g., income inequality and economic crisis) was non-significant. These results suggested that what greedy individuals generally cared about is their own needs and financial standing rather than the macrolevel systems. This result is consistent with the finding that greedy people tend to be egoistic (Krekels & Pandelaere, 2015) and often overharvest in forest-management games because of being motivated by acquisitiveness rather than apprehension of public resource depletion (Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015).

Second, researchers have not reached an agreement on whether “at the expense of others” is an indispensable element of being greedy. Our results offered insights into this question. On the one hand, we found that greed is positively correlated with ECEs. This finding indicates that greedy individuals tend to hold the belief that the world is unjust, disordered and malevolent, and other people are untrustworthy. On the other hand, the positive correlation between greed and BZSG indicates
that greedy individuals tend to believe that the gain of oneself is inevitably based on the loss of others. In view of such discontent and hatred toward the world and others, we tend to agree that greedy individuals are more likely to satisfy their own needs without considering the needs of others, and more often than not, greedy behavior results in harm to others.

Third, the definition that the DGS scale developed by Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015 is based on also emphasizes the negative emotionality—dissatisfaction of never having enough—as another core element of greed. This view is not shared by other approaches in the field (Mussel et al., 2018). Findings of the current study could not directly resolve this question. However, we provide some indirect evidence suggesting that greedy individuals tend to be dissatisfied with their current status. Specifically, such individuals tend to hold the view that their personal socio-economic status is insecure. Previous empirical research suggested that greed was negatively correlated with life satisfaction (Krekels & Pandelaere, 2015; Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015) and positively correlated with depression (Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015). These findings may serve as supporting evidence in this regard. However, more studies are required to assess whether dissatisfaction is inherent in the experience of greed. We speculate that there is a dynamic relationship between dissatisfaction and greed. Dissatisfaction with not having enough may elicit the acts of obtaining more resources by greedy individuals. After such acts, the individuals' satisfaction level might increase temporarily. Soon afterwards, greedy individuals quickly perceive dissatisfaction again and subsequently desire to acquire even more. A longitudinal or experience sampling research design would be useful for capturing the fluctuation of satisfaction and dissatisfaction level of greedy individuals.

Finally, consistent with previous studies (Krekels & Pandelaere, 2015; Mussel et al., 2018; Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015), the current study found a high correlation between greed and materialism, indicating that the two constructs overlap to a large extent. One possible explanation is that both constructs contain materialistic desires, especially for money. Further research is needed to explore the similarities and differences between greed targeted at materialistic and nonmaterialistic objects. The antecedents and consequences of greedy behavior might differ significantly within different domains. Thus, a domain-specific measure of greed is needed to facilitate future research in the field (Mussel et al., 2018).

As far as the demographic variables are concerned, the current study found that males are significantly greedier than females. This finding is in line with those of a previous study (e.g., Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015). This finding may be explained from an evolutionary psychological perspective, which suggests that males and females possess different evolved psychological adaptations that guide their mate preferences (Buss, 1989; Buss & Schmitt, 1993). In an evolutionary framework, men placed more importance on physical attractiveness than women did because a woman’s physical attractiveness confers information about her reproductive value, whereas women placed more importance on good financial prospects than men did because a woman’s offspring are more likely to survive given a man’s economic affluence (Buss & Schmitt, 1993). This asymmetry may make males acquire as much as possible to increase their resources and enhance their competitive advantage, while this strategy is not the case for females.

Although the magnitude of the correlations between dispositional greed and age are different in study 2 and study 3, the directions of the relations are the same, which hint that younger people might be greedier than older ones. This finding was in line with that of a previous study (Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015). It could be that people become less greedy when they age because they learn to accept their desires and improve in their discernment of what they truly want. Gradually, they realize that sometimes it might be better to abandon rather than grasp at something they do not truly need. It is also possible that the negative relation between age and greed is due to a cohort effect. Greed is more acceptable today than many years ago (Oka & Kuijt, 2014). Thus, younger people demonstrate relatively higher levels of greed because they have been exposed to the popular greed-is-good culture. More research is needed to explore the dynamics of the relation between greed and age.

We did not find significant relations between dispositional greed and levels of education. However, previous research suggests that education is negatively correlated with greed (Seuntjens, Zeelenberg, van de Ven, & Breugelmans, 2015). The nonsignificant relation between greed and education might have arisen because participants in the current study are all relatively well-educated. The percentage of people who hold at least bachelor degrees are 81.50% in study 2 and 80.90% in study 3. That is, the variance in education levels is restricted. More educationally diversified samples are needed in future studies to clarify the relation between education and greed.

6. Limitations and directions for future research

First, the samples of the current research were all recruited online, which may restrict the generalization of our results. Participants who have access to online surveys tend to be younger and have higher levels of education. It is possible that older and relatively less educated people may have different response patterns. Therefore, future studies based on more diversified samples are needed.

Second, it is also of great importance to explore the antecedent of dispositional greed from the perspective of developmental psychology. The results of the current study suggest that greed is positively correlated with individuals’ socio-economic insecurity. In the same vein, it is reasonable to speculate that dispositional greed might be partially rooted in negative childhood experiences. Previous research has suggested that acquisitive behavior can be triggered by uncertainty of resources or upbringing in childhood, thus serving as an adaptive behavior to prepare for future shortages (Krekels, 2015). It is worthwhile to examine whether resource insecurity or scarcity of love from primary caregivers contribute to the formation of dispositional greed.

Finally, researches on the conditions under which dispositional greed could produce socially beneficial results are strongly needed. Greed is the strong desire to acquire more. Researchers argue that greed is not all bad (Bruhn & Lowrey, 2012). For example, research suggests that greedy people are more productivity-oriented and have a strong desire to win (Krekels & Pandelaere, 2015). Bruhn and Lowrey (2012) proposed that although greed cannot be eliminated from our social systems, its positive manifestations could be used to improve individual performance and organizational effectiveness. When rules about ambition and competition are clear, and when group and organizational norms and cultures are supportive but do not encourage excess, dispositional greed might lead to individually and collectively positive results. This line of research is of great practical and theoretical importance.

Acknowledgement

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References

Bruhn, J. G., & Lowrey, J. (2012). The good and bad about greed: How the manifestations of greed can be used to improve organizational and individual behavior and performance. Consulting Psychology Journal: Practice and Research, 64(2), 136–150.


Web references