Accuracy and Bias in Self-Perception of Performance:

Narcissism Matters in Korea As Well

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Abstract

Self-enhancement among Westerners and self-diminishment among East Asians are relatively well-documented. However, most studies assessing these tendencies have not compared self-perceptions against objective external criteria, especially those with East Asians. Furthermore, the link between narcissism and self-enhancement has been overlooked within East Asian samples. To address such gaps, we utilized scores on an objective test as a criterion to investigate the accuracy of Koreans’ self-assessments and how individual differences in narcissism are related to such assessments. A sample of Korean participants completed self-report measures of narcissism and took a listening comprehension quiz. Estimated and actual scores were collected. It was found that Koreans’ self-perceptions of performance were quite accurate. Narcissism was found to be predictive of self-enhancement.

*Keywords*: narcissism, self-enhancement, self-perception, personality, cultural psychology

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Debates regarding the nature of self-enhancement versus accurate self-assessment have been active among psychologists for decades. Researchers have examined whether self-perceptions are positively distorted (Brown, 1986; Funder, 1980; John & Robins, 1994), whether positive self-distortions are conducive to mental health (Colvin, Block, & Funder, 1995; Taylor & Brown, 1988), and whether self-enhancement motivations are stronger than self-assessment motivations (Gregg, Hepper, & Sedikides, 2011; Trope, 1986).

More recently, researchers have become interested in the panculturality of self-enhancement. While some claim self-enhancement to be a universal human motive (Sedikides, Gaertner, & Toguchi, 2003), others assert that cross-cultural differences exist in the desire to self-enhance (Heine, 2005). Moreover, while research clearly indicates that narcissism is a strong predictor of self-enhancement in Western cultures (e.g., John & Robins, 1994), this relationship has not been clarified within Eastern cultures. The present research aims to contribute to the literature by examining (1) whether the self-perceptions of Koreans are accurate or biased and (2) whether narcissism is related to self-enhancement in a collectivistic culture where self-diminishment is highly valued.

**Cross-Cultural Perspectives on Self-Enhancement and Relevant Measurement Issues**

Self-enhancement refers to the motivation to view oneself in a highly positive way (Alicke & Sedikides, 2011; Sedikides & Gregg, 2008). This bias can take many forms, including self-serving bias, the better-than-average effect, and unrealistic optimism. Numerous published studies have documented the prevalence of self-enhancement, suggesting that people in general tend to self-enhance (Alicke & Govorun, 2005; Guenther & Alicke, 2010; Sedikides et al., 2003). Sedikides and colleagues (2003) have even declared that self-enhancement is so common worldwide that it is a “pancultural” phenomenon.

Still, other researchers argue that pervasive self-enhancement is a phenomenon observed only among Westerners living within individualistic cultures. While these individuals are likely to self-enhance, collectivist East Asians are more likely to exhibit self-diminishment and self-criticism (Heine, 2005; Heine, Lehman, Markus, & Kitayama, 1999). According to a recent meta-analysis comparing self-enhancement prevalence among Westerners and East Asians (Heine & Hamamura, 2007), Westerners showed greater self-enhancement than East Asians in 30 of the 31 methodologies (*d* = .84). When separated by culture, self-enhancement was clearly present in the Western samples (*d* = .87), yet absent in the East Asian samples (*d* = -.01).

It is important to note that the way in which self-enhancement is assessed can vary widely. Still, many different operationalizations of self-enhancement can be divided into two overarching categories (Krueger & Wright, 2011): the social comparison approach and the social realist approach. In the social comparison approach, participants are asked to rate themselves on a number of positive traits, relative to the average person. For example, participants may be presented with a scale ranging from 1 (*much worse than average*) to 7 (*much better than average*), with the midpoint score of 4 meaning “about the same.” If more than 50% of participants give themselves a score greater than 4, it can be concluded that self-enhancement is present in the sample as a whole (e.g., Svenson, 1981). This is because it is a statistical impossibility for more than 50% of people to score above the average, unless there exist extreme outliers on the low end. Alternatively, participants can make two ratings: one for themselves and one for the average person. If the mean difference between the two scores is positive, self-enhancement is present, as the individual views him or herself as better than average (e.g., Klar & Giladi, 1999).

In contrast, in the social realist approach, self-perceptions are compared with an external criterion. Yet researchers differ in the external criteria they consider to be most valid. Some researchers use social consensus, comparing one’s self-perceived personality with several others’ aggregated ratings (Funder & Colvin, 1988). Other researchers employ scores on objective tests as their criterion. One’s self-perceived academic ability, for example, can be compared with one’s GPA (Robins & Beer, 2001).

One disadvantage of the social comparison approach, relative to the social realist approach, is the *in*ability to identify whose self-perception is accurate or biased (Krueger & Wright, 2011). Let’s say Amy believes that her IQ score is 130, and thus believes that she is more intelligent than the average person, given that the population mean IQ score is 100. Despite her claim to be better than average, Amy’s belief alone is not enough to indicate that her self-perception is overly positive. If Amy’s actual IQ is 100, we would conclude that she was self-enhancing. If her actual score is 150, however; we would conclude that she was self-diminishing, despite her better than average self-rating. In the aforementioned meta-analysis (Heine & Hamamura, 2007), most studies took the social comparison approach. Accordingly, their results speak to East Asians’ unwillingness to self-enhance, but not to the accuracy of their self-perceptions, relative to a criterion variable. One purpose of the present study was to investigate the accuracy and bias in Korean’s self-perceptions of performance by taking the social realist approach.

**Self-Enhancement and Narcissism in the Individualistic Culture**

Westerners’ tendencies to self-enhance are well documented at the group level when using the social realist approach as well (Farwell & Wohlwend-Lloyd 1998; Gosling, John, Craik, & Robins, 1998; John & Robins, 1994). However, culture is not the sole determinant of an individual’s propensity to self-enhance; within these group-level tendencies, individual differences may also play a role. Narcissism has been repeatedly linked to overly positive self-views within Western cultures. Narcissistic individuals have been shown to rate their own performance (John & Robins, 1994; Robins & Beer, 2001), behavior (Gosling et al., 1998), academic achievement (Farwell & Wohlwend-Lloyd, 1998), intelligence, and physical attractiveness (Gabriel et al., 1994) more highly or more positively than diverse forms of external criteria meant to capture reality.

For example, one of the aforementioned studies (John & Robins, 1994) asked individuals participate in a group discussion. Participants then were asked to rank each group member’s contribution including their own. Additionally, a staff of 11 psychologists ranked each group member’s contribution. Each participant’s self-rated ranking was then compared against the other members’ rankings and the staff’s ranking. It was found that self-enhancement bias over both the staff and peer criteria was positively correlated with narcissism. Robins and Beer (2001) replicated these findings, again demonstrating that self-enhancement bias is positively correlated with narcissism among Western individuals. Thus, although Westerners tend to self-enhance at the group level, narcissism appears to be systematically related to self-enhancement within this population.

**Self-Enhancement and Narcissism in Korea**

Korean samples are frequently used in cross-cultural studies, yet, to our knowledge, no studies to date have been published in English taking the social realist approach with Koreans. A small number of studies have been published in Korean, but the results are inconsistent. In one such study (Kim, 2009), students taking courses to be daycare center teachers worked as summer interns. Both the students and their supervisors completed a questionnaire on students’ performance. Students’ self-evaluations were lower than the supervisors’ evaluations of them, suggesting self-diminishment. Roh and Sohn (2011) found the opposite, however. After completing a group task, students rated one another on their contribution. Relative to peer ratings, self-ratings were more positive for 58.9% of participants but more negative for 23.4%, suggesting self-enhancement. Furthermore, Hong and Ko (2003) reported results suggesting neither self-enhancement nor self-diminishment. After completing a group discussion, participants rated group members’ leadership abilities, including their own. There was no significant difference between self-rated and peer-rated leadership.

Thus, it is difficult to affirm the presence of self-enhancement or self-diminishment at the group level in Korean samples. Methodological issues in using social consensus as the criterion may have obscured Koreans’ self-enhancing tendencies (or lack thereof). When one rates another, biases can come from both parties (Kenny & La Voie, 1984). A target may see him or herself in an overly positive or overly negative fashion. At the same time, observers may rate this target more positively or negatively (i.e., perceiver effects). If observers’ ratings are overly negative, targets’ self-ratings are considered self-enhancement, even if they are in fact accurate. To avoid this criterion problem, some researchers control for the perceiver effect (Kwan, John, Kenny, Bond, & Robins, 2004; Kwan, John, Robin, & Kuang, 2008); and others minimize biases from the criterion side by utilizing performance on an objective task as a criterion (Kim & Chiu, 2011; Kim, Chiu, & Zou, 2010). In the present study, we took the latter method and compared Korean’s self-perceptions of performance to their actual, objective scores on a listening comprehension task.

Surprisingly, the link between narcissism and self-enhancement was not examined in any of the studies reviewed above. This link may not be obvious in the collectivistic culture, as people in different cultures have different concepts of social desirability. According to Paulhus (2002), there exist at least two distinctive aspects of social desirability. Self-deceptive enhancement refers to distorted responses to appear talented, competent, attractive, and so on, whereas impression management refers to distorted responses to appear normatively appropriate. In a recent study, Lalwani, Shrum, and Chiu (2009) found that Westerners tend to engage in self-deceptive enhancement because they are motivated to promote their positive characteristics. In contrast, East Asians tend to engage in impression management because they are motivated to maintain face in social situations. These findings suggest that people in both collectivistic and individualistic cultures want to behave in socially desirable ways, yet take different routes to do so.

In the individualistic culture where self-enhancement is pervasive, it seems quite normative to pursue highly positive self-views. Thus, showing off one’s grandiosity is in line with cultural norms and can be an effective impression management strategy, at least in the short term (Back, Schmukle, & Egloff, 2010; Paulhus, 1998). In contrast, in the collectivistic culture where self-diminishment is valued, people might frown upon grandiose self-expressions, and pursuing self-enhancement may not be an effective strategy to acquire respect from others. Narcissistic individuals demand respect and approval from others in order to maintain a positive self-image (Morf & Rhodewalt, 2001). If gaining respect from others is more important, narcissistic individuals in the collectivistic culture will show self-diminishment to receive respect; if having a grandiose self-concept is more important, they will show self-enhancement. This question was examined in the present study.

**Computation of Self-Enhancement**

There exist several different ways to compute self-enhancement scores in the social realist approach (for a detailed review, see Krueger & Wright, 2011). The residual score method involves regressing self-perceptions on a criterion, then using the resultant residuals in all future analyses. The difference score method involves subtracting a criterion from self-perception, then using the resultant difference scores in all future analyses. In both cases, positive scores indicate self-enhancement, while negative scores indicate self-diminishment.

Although these two methods are frequently used, others argue that testing the interaction between self-perceptions and criterion values is the optimal way to assess self-enhancement (e.g., Kim et al., 2010). Using this method, researchers can test all of the following three cases simultaneously: self-enhancement (positive self-perceptions coupled with low performance), self-diminishment (negative self-perceptions coupled with high performance), and accurate self-perception (positive self-perceptions coupled with high performance, and vice versa). According to Krueger and Wright (2011), most studies argue for one method over the others, then report results based on that method (for exception, see: De Los Reyes & Kazdin, 2004). In the present study, we computed self-enhancement scores using all three methods.

**The Present Study**

In the present study, we investigated (1) whether self-perceptions of performance are accurate or biased among Koreans, using a social realist approach; and (2) whether narcissism is related to self-enhancement in a collectivistic culture where self-diminishment is valued. To answer such questions, we used self-estimated and actual scores on a listening comprehension quiz, as well as self-reports of narcissism. Although self-esteem was not of our primary interest, we additionally assessed this trait due to its commonalities with narcissism. Previous research has used self-esteem as a control variable when assessing the effects of narcissism (e.g., Bushman & Baumeister, 1998; Morf & Rhodewalt, 1993).

**Method**

The data analyzed in the present study are part of a larger dataset on personality and communication. Only those measures and procedures pertaining to our current research goals are described.

**Participants and Procedure**

Participants (*N* = 146; 71 women) were Koreans living in Korea, recruited via advertisements on the Korea University website. All participants were undergraduate or graduate students. The mean age was 22.49 (*SD* = 2.73), ranging from 18 to 30. Participants came to the lab, completed a series of online questionnaires, then took a listening comprehension quiz. Following their completion of this quiz, they provided self-ratings of their estimated performance. All participants received 10,000 KRW (roughly 10 USD) in exchange for their participation.

**Materials**

**Narcissism**. Participants completed the 13-item Narcissistic Personality Inventory (NPI; Gentile, Miller, Hoffman, Reidy, Zeichner, & Campbell, 2013), a brief version of the 40-item NPI (Raskin & Terry, 1988). They responded on a 6-point scale to indicate how accurately each statement described them. Although the original NPI requires participants to select one of two opposing statements that best describes them, the Likert response format has been used in previous research (McGregor, Nail, Marigold, & Kang, 2005; Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003; Park, Ferrero, Colvin, & Carney, 2013). The NPI includes items such as “I insist upon getting the respect that is due me,” and “I like to show off my body.” Responses across the 13 items were averaged (Cronbach’s α = .85). Additionally, the following three subscales were created: Leadership/Authority (α = .68), Grandiose exhibitionism (α = .76), and Entitlement/Exploitativeness (α = .59).

**Self-esteem**.Participants completed the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965; α = .88) on a 6-point Likert scale. This scale includes items such as “I take on a positive attitude toward myself,” and “I feel that I am a person of worth, at least on an equal basis with others.”

**Estimated and actual scores on the listening comprehension quiz**. Participants listened to a 4-minute audio clip on Socrates and his philosophy, and answered an 8-item multiple choice listening comprehension quiz on the content of the audio clip. They then estimated how many questions they got correct out of eight. Later, the quiz was graded and each participant’s actual score on the test was recorded.

**Individual differences in self-enhancement**. Difference and residual scores were computed to indicate individual differences in self-enhancement. For difference scores, actual scores on the listening comprehension quiz were subtracted from estimated scores. For residual scores, estimated scores were regressed on actual scores, and the residuals were retained, as suggested by John & Robins (1994). In both indices, positive values indicate self-enhancement (overly positive self-perception), and negative values indicate self-diminishment (overly negative self-perception).

**Results**

**Preliminary Analyses**

Descriptive statistics and correlations between variables are presented in Table 1. Narcissism and self-esteem were positively correlated (*r* = .31). There was also a positive relation between estimated and actual scores (*r* = .57), indicating that participants were relatively aware of their performance. Both narcissism and self-esteem were unrelated to estimated or actual scores. There were no significant gender differences in narcissism, self-esteem, estimated scores, or actual scores.

**Are Koreans Self-Enhancing, Self-Diminishing, or Accurate in Self-Perception of Performance?**

To investigate whether our Korean sample self-enhanced at the group level, we performed a repeated-measures *t*-test. Estimated scores (*M* = 6.00, *SD* = 1.36) were not significantly higher than actual scores (*M* = 5.92, *SD* = 1.34), *t*(145) = 0.79, *p* = .43, indicating a lack of self-enhancement or self-diminishment at the group level. Table 2 shows more detailed information regarding the proportions of people who were accurate or biased. About 38% of participants overestimated, 33% underestimated, and 29% accurately estimated their own performance. However, 80% of estimations were within the ±1 point range relative to the criterion on an 8-point scale, suggesting that the majority of Koreans were relatively accurate in their self-perceptions of performance.

**Does Narcissism Predict Self-Enhancement among Koreans?**

The relation between narcissism and self-enhancement was tested in two different ways. First, we correlated narcissism with the two indices of self-enhancement. As shown in Table 1, narcissism was positively related to difference and residual scores, *r*s > .16, *p*s < .05. Among the narcissism subscales, leadership/authority was positively related to these two scores, while entitlement/exploitativeness was unrelated to both. Grandiose exhibitionism was positively related to difference scores, but not to residual scores.

Second, we investigated whether estimated scores (i.e., self-perceived performance) and actual scores (i.e., actual performance) interact in predicting narcissism (Kim et al., 2010). We centered estimated and actual scores, following the recommendations of Aiken and West (1991). The interaction term was produced by multiplying the centered estimated scores with centered actual scores. It was found that the interaction between estimated and actual scores significantly predicted narcissism, *b* = -0.09, *t* = -3.26, *p* = .001. Simple slopes tests at one standard deviation above and below the mean were performed to explore the nature of this interaction (see Figure 1). Narcissism was positively related to estimated scores when actual scores were low, *b* = 0.19, *t* = 3.20, *p* = .002, but unrelated when actual scores were high, *b* = -0.06, *t* = -0.81, *p* = .42. In other words, among people who performed poorly, the more narcissistic participants were, the higher they estimated their performance to be. This tendency was not observed among high-performing individuals.

Similar results were found for the three subcategories of narcissism: the interactions were significant, *t*s < -2.40, *p*s < .02, and simple slopes were significant only among individuals whose actual scores were low, *t*s > 2.07, *p*s < .05. The same pattern of results from the multiple regressions was observed when controlling for self-esteem.

**Does Self-Esteem Predict Self-Enhancement?**

The relation between self-esteem and self-enhancement was examined in the same fashion as narcissism. As shown in Table 1, self-esteem was not related to difference or residual scores, *r*s < .08, *p*s > .05. We also investigated whether estimated scores and actual scores interact in predicting self-esteem. However, neither main effect nor interaction was significant, |*t*|s < 0.95, *p*s > .34 Therefore, we did not find evidence that self-esteem is related to overly positive self-perceptions of performance.

**Discussion**

The purpose of this study was to examine (1) the accuracy and bias in self-perceptions of performance among Koreans, using a social realist approach, and (2) whether narcissistic individuals display self-enhancement in a collectivistic culture where self-diminishment is a social norm (Heine et al., 1999). Previous studies with Koreans comparing self-perceptions with observer-perceptions have yielded inconsistent findings about the presence of self-enhancement (Hong & Ko, 2003; Kim, 2009; Roh & Sohn, 2011). Because we used scores from an objective test as a criterion, biases from the observer side were not an issue. We found no signs of self-enhancement, nor self-diminishment. Rather, self-perception of performance among Koreans was quite accurate. Self-perceptions were well-balanced, centering around the accuracy point (see Table 2). In addition, estimated scores did not significantly differ from actual scores.

The relation between narcissism and self-enhancement was examined using three different methods, and the results were convergent: Narcissism was positively related to self-enhancement in our Korean sample. This finding is particularly interesting, given that one might expect expressing narcissism via self-enhancement to be culturally discordant for Koreans. In individualistic cultures, narcissistic individuals’ desires for self-enhancement are not culturally troublesome, as self-enhancement is normative. Thus, their culture allows them to pursue grandiosity and social respect, both of which they need to maintain their self-image. However, in a collectivistic culture where self-diminishment is the social norm, a choice must be made: individuals may show off their grandiosity and lose social respect, or may diminish themselves to receive social respect. In our Korean sample, narcissism was expressed via the former, despite the cultural conflict it stands to engender. This finding leads to an interesting question: Is pursuing a grandiose self more detrimental to narcissistic individuals in a collectivistic culture than in an individualistic culture? In other words, do narcissistic individuals face higher rates of social exclusion in collectivist cultures, given the misalignment of their behaviors with cultural norms? Future research should examine this further.

The present study is the first to demonstrate the link between narcissism and self-enhancement with Koreans. This link has been confirmed by three different methods of self-enhancement score analysis used in the social realist approach. This finding suggests that, although self-enhancement is not pancultural, perhaps narcissistic self-enhancement is.

It is important to note that these results were true of narcissism alone. Self-esteem was not significantly related to self-enhancement, and the link between narcissism and self-enhancement remained significant after controlling for self-esteem. These findings imply the distinct nature of each of these traits (Campbell et al., 2002; Park & Colvin, in press). Still, this may partly depend on the domain being assessed. Gabriel and colleagues (1994) demonstrated narcissism predicted self-enhancement in the domains of intelligence and physical attractiveness for both genders, while self-esteem predicted self-enhancement among men for intelligence only. This finding implies that self-esteem’s relationship with self-enhancement can vary with context. As such, further research is needed regarding the link between the two.

It is worth discussing why neither self-enhancement nor self-diminishment was found in our East Asian sample. Although our data do not speak to this directly, there exist at least three likely explanations. First, East Asians tend to believe that people are malleable, whereas Westerners tend to view people as fixed (Heine et al., 2001). When people believe that change is possible, they are motivated to assess themselves correctly for the purpose of self-improvement. Conversely, when there is no belief in change, people are motivated to maintain their positive self-image by focusing on their strengths (Dweck & Leggett, 1988; Gregg et al., 2011). Thus, it may be the case that East Asians do not self-enhance due to their malleable self-theories. Second, East Asians may be more sensitive to their social standing, due to their collectivist culture (Heine & Renshaw, 2002). As such, it is important for them to know where they stand in a group to maintain social harmony. This sensitivity may result in a heightened self-assessment motivation, which in turn leads to more accurate self-perceptions. Finally, perhaps this difference was due to the nature of our experimental task. It may be the case that Koreans hold accurate self-perceptions on objective tasks such as ours, but do not when alternative tasks are used. Further research must be conducted to identify the mechanisms by which these cultural differences are realized.

Additionally, it is worth acknowledging that East Asian countries are rapidly becoming Westernized, possibly bringing about changes in personality. A recent cross-temporal meta-analysis reported that narcissism among Korean college students has increased between 1999 and 2014 (Lee, Benavides, Heo, & Park, 2014). Thus, Koreans, especially young adults, may go through psychological turmoil. On the one hand, their collectivistic upbringing is pressing them to pursue traditional values, including self-diminishment. On the other hand, young people’s heightened levels of narcissism are leading them to pursue self-enhancement. This dichotomy is important to consider when conducting research on these topics, and may help to explain why we did not find self-diminishment at the group level. Future research using Korean samples should maintain awareness of the changing cultural landscape.

One limitation of this study is that we did not recruit participants from both cultures. However, as reviewed earlier, a large collection of studies already exists using individuals from Western cultures. Still, a cross-cultural study with participants from both cultures, using a social realist approach, may contribute to the literature (Heine & Renshaw, 2002).

Finally, it should be noted that narcissism in the present study was measured by the NPI that aims to assess subclinical, grandiose narcissism. Thus, the findings reported here may or may not apply to clinical or vulnerable narcissism. Detailed discussions about the different types of narcissism can be found in Miller and Campbell (2008) and Miller, Hoffman, Gaughan, Gentile, Maples, and Campbell (2011).

**Conclusions**

In conclusion, these results demonstrate that: (1) Koreans, at the group level, tend to provide accurate self-assessments of performance in objective tasks, and (2) narcissism is linked with self-enhancement, even in a collectivist culture where self-diminishment is valued. These results provide further information regarding Koreans’ self-assessment tendencies, as well as demonstrate the cross-cultural consistency of narcissism as a construct.

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Table 1

*Descriptive Statistics and Correlations between Study Variables*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *M* (*SD*) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1. Narcissism total | 3.25 (0.76) | – |  |  |  |  |  |  |  |
| 2. Narcissism LA | 3.31 (0.92) | .83\*\*\* | – |  |  |  |  |  |  |
| 3. Narcissism GE | 3.19 (0.92) | .86\*\*\* | .53\*\*\* | – |  |  |  |  |  |
| 4. Narcissism EE | 3.27 (0.84) | .83\*\*\* | .61\*\*\* | .57\*\*\* | – |  |  |  |  |
| 5. Self-esteem | 4.54 (0.79) | .31\*\*\* | .22\*\* | .41\*\*\* | .13 | – |  |  |  |
| 6. Estimated score | 6.00 (1.36) | .08 | .12 | .05 | .00 | .10 | – |  |  |
| 7. Actual score | 5.92 (1.34) | -.10 | -.04 | -.12 | -.11 | .05 | .57\*\*\* | – |  |
| 8. Difference score | 0.08 (1.26) | .19\* | .17\* | .19\* | .12 | .05 | .48\*\*\* | -.45\*\*\* | – |
| 9. Residual score | 0.00 (1.12) | .16\* | .17\* | .15 | .08 | .08 | .82\*\*\* | .00 | .89\*\*\* |

*Note*. LA = leadership/authority; GE = Grandiose exhibitionism; EE = Entitlement/ Exploitativeness.

\* *p* ≤ .05. \*\* *p* ≤ .01. \*\*\* *p* ≤ .001.

Table 2

*Percentage of Participants Accurately and Inaccurately Estimating Their Performance*

|  |  |  |
| --- | --- | --- |
| Difference between  estimated and actual scores | Frequency | Percent |
| -3 | 3 | 2.1 |
| -2 | 10 | 6.8 |
| -1 | 35 | 24.0 |
| 0 | 43 | 29.5 |
| 1 | 39 | 26.7 |
| 2 | 11 | 7.5 |
| 3 | 5 | 3.4 |
| Total | 146 | 100 |

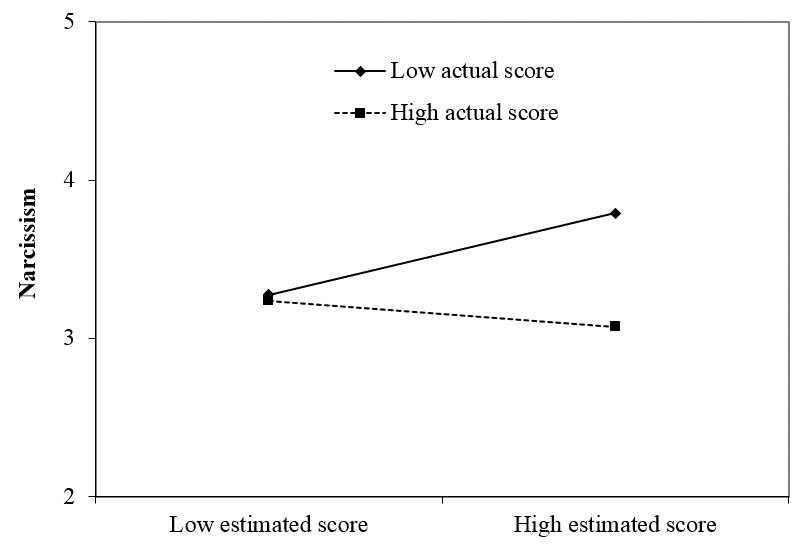


Figure 1.

*Narcissism as a Function of Estimated and Actual Scores*