

The Dunning-Kruger Effect: Do Narcissism and Optimism Influence Individuals' Misestimations of Their Abilities

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Abstract

The current study sought to examine if the Dunning-Kruger effect was present in a sample of the general population and if narcissism and optimism influenced individuals' misestimations of their abilities. Poor and high performers did not significantly misestimate their scores on a general knowledge test. Poor performers significantly overestimated their performance relative to other participants, while high performers underestimated theirs. Narcissism and optimism did not significantly predict individuals' misestimations of their abilities.

Introduction

According to the Dunning-Kruger effect (Kruger & Dunning, 1999), poor performers (those in the bottom 25%) greatly overestimate their abilities, while high performers (the top 25%), accurately or slightly underestimate theirs. The effect is generally explained as a metacognitive deficit; the lack of knowledge which precludes poor performers from doing well is the same knowledge required to recognise their poor performance. It is also considered to be domain specific, varying with an individual's ability in an area (for a review see; Dunning, 2011). However, recent research suggests that personality traits may play a role (e.g. Ames & Kammrath, 2004). Narcissists are more likely to overestimate their performance than non-narcissists, even when their actual performance is no better (Campbell, Goodie & Foster, 2004; Ames, Rose & Anderson, 2006). Poor performers also demonstrate a persistent, unfounded optimism regarding their abilities (e.g. Simons, 2013), even when provided with conflicting evidence or incentives to be more accurate in their estimations (Kruger et al., 1999; Ehrlinger, Johnson, Banner, Dunning & Kruger, 2008). However, no published studies have investigated the role of dispositional optimism in individuals' misestimations of their abilities.

The current study aimed to examine if participants from the general population would misestimate their abilities on a general knowledge test as predicted by the Dunning-Kruger effect, and if narcissism and optimism would influence the degree to which they misestimated their abilities.

- Hypothesis 1: Low performers will greatly overestimate their scores and their performance relative to others (performance rank).
- Hypothesis 2: High performers will accurately, or slightly underestimate, their scores and performance rank.
- Hypothesis 3: Narcissism will predict the degree to which individuals misestimate their scores and performance rank.
- Hypothesis 4: Optimism will predict the degree to which individuals misestimate their scores and performance rank.

Methods

A mixed correlational quasi-experimental between-groups design was employed. Participants were recruited from the adult general population through email and Facebook using convenience and snowball sampling.

103 participants (76 female; 27 male) aged 18 to 80 years ($M = 40.51$; $SD = 10.51$) completed an online study which included the Revised Life Orientation Test [LOT-R] (Scheier, Carver & Bridges, 1994) and the 16-item Narcissistic Personality Inventory [NPI-16] (Ames et al., 2006), which are short measures of dispositional optimism and non-clinical narcissism, respectively, and 50 general knowledge questions (GKT) taken from Nelson & Narens' (1980; Tauber, Dunlosky, Rawson, Rhodes & Sitzman, 2013) general knowledge norms, which were used to measure ability. Participants then estimated their GKT scores and performance rank compared to other participants.

GKT sample questions

What is the name of the island on which Napoleon was born?

What is capital of Jamaica?

What is the unit of sound intensity?

Questions regarding estimations

Please estimate how many of your responses are correct out of a total of 50.

Please estimate how well you think you have done relative to other participants on a scale of 0 to 100.



Results

Descriptive Statistics

Bottom quartile (bottom 25%) scorers underestimated their scores while the top quartile (top 25%) overestimated theirs (see figure 1). Bottom quartile ranked performers overestimated their performance rank whereas the top quartile substantially underestimated theirs (see figure 2). Mean scores for optimism and narcissism were 15.14 ($SD = 4.47$) and .20 ($SD = .17$), respectively. All variables, with the exception of misestimated scores, did not meet the assumptions of normality.

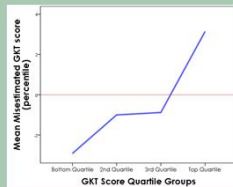


Figure 1: Mean misestimated scores for GKT score quartile groups

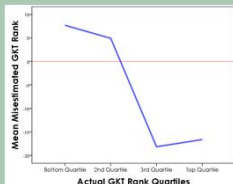


Figure 2: Mean misestimated rank for performance rank quartile groups

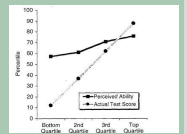


Figure 3: The Dunning-Kruger effect (Kruger et al., 1999)

Inferential statistics

H1 and H2: A one-way ANOVA found no significant difference between quartile groups on misestimations of GKT scores ($F(3,94) = 1.13, p = .339$). A Kruskal-Wallis test found a significant difference between performance rank quartiles on misestimations of performance rank ($\chi^2(3) = 41.94, p = .001$). A Mann-Whitney U test found the bottom quartile (mean rank = 31.17) significantly overestimated their performance rank compared to the top quartile (mean rank = 13.67) ($z = -4.46, p = .001$).

H3 and H4: Linear regressions found that narcissism and optimism did not significantly predict individuals' misestimations of GKT scores or performance rank.

Discussion

H1 and H2 were only partially supported by the findings. Bottom (poor) and top (high) quartile performers did not differ significantly on misestimations of scores. Poor performers significantly overestimated their performance rank. However, high performers substantially underestimated theirs. It is unclear why results differ from the pattern predicted [see figure 3] by the Dunning-Kruger effect (Kruger et al. 1999).

H3 and H4: Narcissism and optimism did not significantly predict individuals' misestimations of their scores and performance rank. The results for narcissism do not support previous research (Ames et al., 2004; Goodie et al., 2006; Ames et al., 2006). H1 and H2 findings may have impacted on the results for H3 and H4. Additionally, low average narcissism scores, and non-normal distribution of gender and age may have influenced the findings for narcissism (Foster, Campbell & Twenge, 2003). As there are no previously published studies on the role of dispositional optimism on individuals' misestimations of their abilities, it is unclear if findings for H4 were non-significant because no relationship exists or if other factors influenced the results.

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