

## INDIVIDUAL DIFFERENCES IN SELF-ENHANCEMENT IN TERMS OF ONE'S PERSONALITY TRAITS: RELATIONSHIPS WITH RUMINATIONS AND REGULATORY FOCUS

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While personality researchers have shown interest in studying self-enhancement, they have not extensively focused on its relationships with distinct cognitive and motivational variables. This exploratory study aims to investigate whether overestimating one's personality traits is related to a lower level of ruminations, a higher promotion regulatory focus, and a lower prevention focus. Promotion regulatory focus involves self-regulation based on one's striving for an ideal-self, as opposed to an ought-self, which is typical of a prevention regulatory focus. Self-enhancement occurs when the level of self-rated personality traits exceeds that of informant-rated personality traits. The Five-Factor personality traits were considered: emotional stability, extraversion, openness to experience, agreeableness, and conscientiousness. Certain hypotheses found empirical support. Self-enhancement in different traits were linked to different cognitive and motivational variables. Primarily, an overly positive self-view of one's emotional stability was accompanied by a lower level of intrusive rumination, a higher level of promotion focus, and a lower prevention focus. The self-enhancement in extraversion was related to a higher level of promotion focus and a lower level of intrusive ruminations while self-enhancement in conscientiousness was linked to a higher promotion focus. Methodological issues and hypothesis formulation were further discussed.

**Keywords:** overly positive self-view; biased self-concept; maladaptive thinking; Big Five; Higgins' theory.

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Self-enhancement refers to a personality-trait-like tendency to maintain a positive self-view as well as a motivation to do so (Sedikides & Alicke, 2019). It manifests in the phenomena such as self-serving biases, better-than-average effect, socially desirable responding, overclaiming, or selective self-memory. What makes these phenomena distinctive from other self-related constructs, is some form of reality distortion component. For instance, self-serving biases are observed when one interprets their failures as caused by external factors, and explains successes as the results of one's abilities (Campbell & Sedikides, 1999). The unresolved issue is how self-enhancement relates to psychological adjustment. According to the classical work by Taylor and Brown (1988), reality distortions, or positive illusions, are beneficial to mental health by enabling people to experience positive emotions, sustain motivation, and keep healthy relationships. Then, more accurate reality perception could be even associated with lowered mood.

However, the measurement of self-enhancement is highly disputed, due to the lack of reality criterion (Colvin & Block, 1994). The experimental designs for the better-than-average-effect cannot identify people who, in fact, perform above average (Krueger & Wright, 2011). Moreover, the claim about more than half of people being above average is logically justified when the arithmetic mean is used to report a central tendency, and at the same time, even a few people obtain scale scores below average (Robins & John, 1997). Social desirability scales face criticism not only for measuring response styles, a significant component of self-enhancement, but also for occasionally capturing personality traits like agreeableness (Wetzel et al., 2016).

Those methodological issues can be partially avoided if one employs an "objective criterion". Then, a larger discrepancy between reality and a positively biased self-perception implies a larger self-enhancement effect (Humbert et al., 2017). Reality is determined by test scores in intelligence assessment or by observer ratings in personality assessment (Krueger & Wright, 2011). The rationale is that personality traits are observable, thus aggregated observers' ratings can serve as a reliable measure, free from self-serving biases found in self-reported scales (McCrae & Mõttus, 2019). However, the objectivity of observer ratings is disputed, given that both self-reports and observer ratings offer unique, irreducible information valuable for personality assessments. Also, traits differ in observability and social desirability. Extraversion, with its pronounced behavioral component, is more easily judged than openness to experience. While many people desire to be perceived as sociable, introversion can be evaluated positively depending on individual preferences.

Notwithstanding, self-other agreement can serve as a tool for assessing validity of Big Five personality traits, and shared variance, accounting for the highest proportion of explained variance, may represent the essence of what the trait is (McCrae, 2018).

Authors opting for objective criterion use algebraic differences or regression residuals to operationalize self-enhancement (Dufner et al., 2019). If the level of a self-reported positive trait is higher than the aggregated level of the same trait reported by informants, self-enhancement occurs. The idea of using residuals involves regressing self-reported scores on informant-reported scores. Then, specific variance left after partialling out the variance shared between self-report and ratings may be regarded a bias (McAbee & Connelly, 2016). By implementing an objective criterion, Colvin et al. (1995) found that those who self-enhance are perceived by others as hostile and distant. Self-enhancement in a social context was deemed maladaptive, which is contrary to the conclusions drawn by Taylor and Brown (1988).

After highlighting the need for reality criteria inclusion in self-enhancement research, one may reexamine the issue of adaptiveness. Exploring the phenomenon through the lens of cognitive and motivational factors could provide valuable insights. Little is known about how individuals with varying levels of self-enhancement differ in cognitive and motivational patterns that facilitate maintaining an overly positive self-view and influence adjustment.

For that reason, considering regulatory focus and rumination seems to be the fruitful exploratory endeavor.

Higgins' Regulatory Focus Theory (1997) is the theoretical framework that describes motivation in terms of internalized standards, or self-states, guiding actions: the ought and the idealized self. A need for growth and accomplishment is the result of comparing one's actual self with their ideal self, whereas safety and responsibilities are the main concerns in the comparison with one's ought self. Striving for an ideal-self is related to the promotion focus, and for the ought-self to the prevention focus. Individuals with the promotion focus are sensitive to the presence and the absence of positives, which they interpret as reward and punishment, respectively. Individuals with prevention goals associate pleasure with the absence of negative states and pain with the presence of negative states. The regulatory focus does not necessarily need to be considered in terms of categorical variables. Individuals can exhibit varying degrees of both promotion and prevention, as they are not entirely independent. Scholar et al. (2014) found that the promotion focus can predict self-inflation, defined as a situational access to knowledge about one's positive traits. Although

self-enhancement encompasses more than just focusing on one's positive traits, the terms overlap conceptually, and it is plausible that promotion-oriented individuals may need an overly positive self-evaluation to maintain their action-guiding standards. Perhaps social feedback that contradicts an enhanced view of one's personality traits may not align with the goal of amplifying positive states.

Ruminative responding to unpleasant events involves concentrating on causes and consequences of one's negative affect, that limits the use of adaptive coping strategies (Nolen-Hoeksema, 1991). Ruminations constitute a part of the clinical presentation of depression, social phobia, and PTSD (Smith & Alloy, 2009). Intrusive or deliberate ruminations are developed as the result of the cognitive interpretation of traumatic events (Cann et al., 2011). The intrusive ruminations are persistent, unwanted, and uncontrollable, and correlate positively with intrusions and distress after trauma. Deliberate ruminations can be characterized as intentional thinking about the traumatic event to understand what happened and find meaning in it. The two-factor structure of ruminations replicates in individuals who experienced different adverse events. Ruminations may be regarded as an appropriate cognitive measure of maladjustment since they are psychopathological symptoms included in a few psychiatric disorders. Higher levels of rumination are linked to lower self-esteem (Kuster et al., 2012), prompting an investigation into whether self-enhancement, or an overly positive self-view, shares a similar association. Additionally, self-serving biases may contribute to positive mood states. Given the positive correlation between negative mood and rumination (Thomsen et al., 2003), it can be hypothesized that self-enhancement is associated with reduced rumination levels.

Since positive illusions are essentially systematic distortions with long-term consequences, focusing solely on experimentally manipulated and situation-dependent effects has its limitations. Therefore, in the study, both regulatory focus and rumination, similarly to self-enhancement, are considered from the perspective of individual differences.

### **Present Study**

The aim of the study was to explore whether individual differences in self-enhancement in terms of personality traits can be related to regulatory focus and ruminations. The self-enhancement was operationalized as a bias left after partialling out the shared variance between self-report and ratings. Personality

traits were defined within the Five-Factor Model of personality framework. For each personality trait the self-enhancement bias can be distinguished. Considering the five personality traits and four cognitive-motivational variables, twenty individual hypotheses were formulated. Each of them corresponds to a statistical claim about the link between self-enhancement in terms of a specific personality trait and one variable—cognitive or motivational. In each case, the null hypothesis states that there are no relationships in the population between self-enhancement in terms of a specific personality trait and motivational or cognitive variable. The choice of individual hypotheses formulation was based on the exploratory goal of the study. The same directions of relationships were predicted for self-enhancement in terms of each of the personality traits which is illustrated in Table 1. General prediction was that the higher self-enhancement ( $\uparrow$ S-E) will be related to the lower level of intrusive ruminations ( $\downarrow$ RI), the lower level of deliberate ruminations ( $\downarrow$ RD), the higher level of promotion-focus ( $\uparrow$ Pro), and the lower level of prevention-focus ( $\downarrow$ Pre).

**Table 1**  
*Hypotheses in the Study*

Hypothesis	S-E in terms of personality trait	Cognitive/motivational variable
H1	$\uparrow$ S-E in terms of emotional stability	$\downarrow$ intrusive rumination
H2	$\uparrow$ S-E in terms of emotional stability	$\downarrow$ deliberate rumination
H3	$\uparrow$ S-E in terms of emotional stability	$\uparrow$ promotion focus
H4	$\uparrow$ S-E in terms of emotional stability	$\downarrow$ prevention focus
H5	$\uparrow$ S-E in terms of extraversion	$\downarrow$ intrusive rumination
H6	$\uparrow$ S-E in terms of extraversion	$\downarrow$ deliberate rumination
H7	$\uparrow$ S-E in terms of extraversion	$\uparrow$ promotion focus
H8	$\uparrow$ S-E in terms of extraversion	$\downarrow$ prevention focus
H9	$\uparrow$ S-E in terms of openness to experience	$\downarrow$ intrusive rumination
H10	$\uparrow$ S-E in terms of openness to experience	$\downarrow$ deliberate rumination
H11	$\uparrow$ S-E in terms of openness to experience	$\uparrow$ promotion focus
H12	$\uparrow$ S-E in terms of openness to experience	$\downarrow$ prevention focus
H13	$\uparrow$ S-E in terms of agreeableness	$\downarrow$ intrusive rumination

**Table 1 (continued)**

Hypothesis	S-E in terms of personality trait	Cognitive/motivational variable
H14	↑ S-E in terms of agreeableness	↓ deliberate rumination
H15	↑ S-E in terms of agreeableness	↑ promotion focus
H16	↑ S-E in terms of agreeableness	↓ prevention focus
H17	↑ S-E in terms of conscientiousness	↓ intrusive rumination
H18	↑ S-E in terms of conscientiousness	↓ deliberate rumination
H19	↑ S-E in terms of conscientiousness	↑ promotion focus
H20	↑ S-E in terms of conscientiousness	↓ prevention focus

*Note.* ↑ = “the higher...”, ↓ = “the lower...”.

## METHOD

### Procedure

In 2021, a total of 153 Polish university students accessed the survey by a link in Facebook posts. Since 47 of them did not provide a rating and completed only a self-report questionnaire, analyses were conducted on the data from 106 respondents. The sample size justification part is included in the sensitivity analysis section further in the text.

The participants were informed that the study aimed to examine the relationship between personality, motivation, and thought patterns; they gave informed consent to participate. Feedback on one's personality traits was intended to encourage respondents to take part in the study. Two Qualtrics surveys were developed, with the first one designed for the individual whose personality was rated (i.e. a ratee). It consisted of demographic questions (age, gender, education), a set of questionnaires (IPIP-NEO-50, SSPP, ERRI), and information about the type of relationship with a rater. Raters were individuals known to the ratee, and they took part only in the second survey. The rater's task was to fill out IPIP-NEO-FFI-50 worded in a third-person format. The two surveys were combined for statistical analysis using a unique 7-digit code. The code was randomly generated for each ratee, who then shared it with at least one rater to give them access to the second survey. The study was

approved by the Research Ethics Committee at the Faculty of Psychology, University of Warsaw (approval number: 28/06/2023).

### Participants

In the sample of 106 people, 27 individuals asked two informants for ratings. To increase sample homogeneity, selection of only one rater was necessary. The type and duration of the relationship were used as selection criteria since most participants asked a friend to rate their personality traits, and a longer relationship was assumed to imply more accurate judgment. After selection, 77 ratees were women, and 29 were men, with the same gender ratio for the raters. The ratees' age ranged from 19 to 34 years ( $M = 23.59$ ,  $SD = 2.96$ ), while the raters' age from 20 to 43 years ( $M = 23.98$ ,  $SD = 3.88$ ). The participants were mainly university students (74 ratees and 61 raters). Personality traits were judged by friends ( $N = 93$ ), family members ( $N = 6$ ), and romantic partners ( $N = 8$ ). The duration of the relationship ( $M = 7.92$ ,  $SD = 6.60$ , range from 1 to 26 years) was divided into two groups based on the median ( $Me = 5$ ): the first group consisted of 55 individuals ( $M = 3.26$ ,  $SD = 1.13$ ), and the second group consisted of 49 individuals ( $M = 13.15$ ,  $SD = 6.27$ ). To assess whether relationship duration affected the rating of personality traits, correlation analyses were performed independently for self-rated and other-rated traits. Next, the two-sided test for equality of correlation coefficients between self-rating and other-rating was conducted, yielding the following results:  $Z = .85$ ,  $p = .40$  (for N);  $Z = 2.16$ ,  $p = .03$  (for E);  $Z = -.35$ ,  $p = .73$  (for O);  $Z = 1.03$ ,  $p = .30$  (for A);  $Z = 1.51$ ,  $p = .13$  (for C). Apart from extraversion, where better accuracy was observed in shorter relationships, people rated personality traits with similar accuracy regardless of the duration of the relationship.

### Measures

#### *Polish Version of the IPIP-NEO-FFI-50*

The Polish version of the IPIP-NEO-FFI-50 (Strus et al., n.d; available at <http://www.ipip.uksw.edu.pl/test.php?id=35>) was used to measure Big Five personality traits, that is Openness (O), Conscientiousness (C), Extraversion (E), Agreeableness (A), and Emotional Stability (ST). The questionnaire is based on the public-domain International Personality Item Pool (Goldberg,

1999). It consists of 5 scales corresponding to 5 personality factors (10 items per trait). Items are rated on a 5-point Likert scale (from *very inaccurate* to *very accurate*). Both self-report and third-person formats were employed. Scale scores were calculated as the sum of the responses to all the items. Cronbach's alpha values for 5 scales of self-report were .89 (for S), .89 (E), .79 (O), .83 (A), and .89 (C). Cronbach's alpha values for informant-report were .88 (for S), .88 (E), .82 (O), .85 (A), and .89 (C).

### ***Promotion and Prevention Self-Regulation Scale (PPSS)***

The Promotion and Prevention Self-Regulation Scale (Kolańczyk et al., 2013), was used to assess a dispositional regulatory focus. The theoretical foundations of the scale align with Higgins' approach to motivation (1997). The scale contains 3 subscales, that is Promotion (Pro, 9 items), Prevention (Pre, 11), and Strength of Motivation (Str, 7). Subscales scores are calculated by summing all subscale items. Strength of Motivation is defined as a persistent goal pursuit. One can have high levels of both promotion and prevention, although the regulatory foci are relatively independent (correlation is statistically significant and weak,  $r = -.12$ ). Answers were provided on a 5-point scale (from strongly disagree to strongly agree). PPSS subscales had Cronbach's alpha values of .75 (for Pro), .75 (Pre), and .83 (Str).

It must be explicitly stated that although the Promotion and Prevention Self-Regulation Scale includes the Strength of Motivation subscale, its scores were not reported in the study. The regulatory focus was the primary interest, and the strength of motivation is considered complementary to promotion, thus highly correlated with it. Nevertheless, the entire questionnaire was administered since the removal of one subscale was not initially regarded as beneficial. In hindsight, the subscale questions could have been excluded without affecting the results.

### ***Event-Related Rumination Inventory (ERRI)***

The Event-Related Rumination Inventory (Cann et al., 2011; Polish translation: Ogińska-Bulik & Juczyński, 2015), measures the intensity of ruminations after a traumatic experience. It includes two 10-item scales: Deliberate Ruminations (DR) and Intrusive Ruminations (IR). Scale scores are calculated by summing all scale items. Participants rate their ruminations frequency on a 4-point scale. Regarding the subject of the paper, which is self-enhancement



as a dispositional tendency, the instructions for the inventory were modified. Instead of rating the intensity of ruminations in response to adverse events that occurred in the last few weeks, participants were asked to report their typical reactions to stressful experiences over a two-year timeframe. All items with the word “event” were changed from singular to plural. Cronbach’s alpha for DR and IR were .87 and .94, respectively.

### **Data Analysis**

The study design centered on examining relationships between variables. It was determined that correlational analysis was the most suitable approach for investigating the hypotheses, particularly concerning the continuous variables and exploratory objectives.

The data analysis comprised three stages: (1) The informative value of residual scores was explored using a dataset from a separate study of 1092 participants. The goal was to investigate Pearson’s correlations between residuals from the regression analysis of self-rated Big Five traits on observer-rated traits and Lie scale scores. The further analysis included only those residuals that correlated significantly with the Lie scores. (2) Bivariate correlation coefficients between residuals and cognitive-motivational variables were calculated for the relationships where a linear association was observed. (3) A sensitivity analysis was performed to estimate the relationships between effect size and required statistical power, as well as to consider the impact of hypothesis testing errors on statistical inference.

Regarding the operationalization of self-enhancement as specific variance left after partialling out the shared variance between self-report and ratings, the analytic strategy in the study entailed the calculation of residual scores from linear regression. For each of the five personality traits, a linear regression was performed using SPSS software, where the standardized scale score for self-rated personality trait was regressed on the standardized score for informant-rated personality trait. The residual score for each trait was then computed and used as a measure of self-enhancement. Thus, self-enhancement can be considered related to specific personality traits, which implies analyzing four self-enhancement biases.

Throughout the study, the alpha level was set at .05, and the statistical power was set at .80.

## RESULTS

### Correlations With the Lie Scale

To explore the theoretical validity of residual scores, correlation analysis was conducted on data from the study by Strelau and Zawadzki (2010). The data included scores from the NEO-FFI (Five-Factor Personality Traits Inventory) and EPQ-R (S), measured via both self-report and informant-report. In addition to three personality traits, the EPQ-R (S) contains a Lie Scale, which assesses one's tendency to dissimulate or present oneself in a more positive light. Correlations between residuals from the linear regression of self-reported on other-reported Five-Factor Traits were assumed to provide some support for residuals indicating a self-enhancement bias. As the analysis served exploration purposes, statistically significant correlation coefficients were deemed sufficient. Then, residuals for neuroticism ( $r = -.15, p < .001$ ), extraversion ( $r = .07, p = .04$ ), conscientiousness ( $r = .36, p < .001$ ), and agreeableness ( $r = .32, p < .001$ ) correlated with a tendency to present oneself in a more positive light. There was no significant correlation for openness to experience residual ( $r = -.02, p = .47$ ), which means that the very minimal requirement itself could not be met, and the variable was excluded for further analysis.

### Correlations With Cognitive-Motivational Variables

The next step was to perform a series of bivariate Pearson correlations among pairs of residuals and cognitive-motivational variables. The correlation analysis was conducted in SPSS after investigating the normality of distributions, identifying outliers, and assessing linearity. Out of 16 pairs, 9 exhibited a relationship that could be approximated as linear. The Pearson correlations are presented in Table 2. For the remaining relationships, none of the quadratic, inverse, or cubic curves could be fitted. Nonetheless, to determine their relationships, the Kendall's Tau coefficients were calculated. Given the exploratory nature of the study and individual hypotheses formulation, multiple testing corrections were not employed. More information about the analyses and the dataset can be found on the Open Science Framework (OSF) page (Jędraszekiewicz, 2024).

**Table 2***Pearson's Correlations Between Self-Enhancement in Terms of Four Personality Traits and Cognitive or Motivational Variables*

Variable	1	2	3	4	5	6	7	8
1. ST res	–							
	–							
	–							
2. E res	.39**	–						
	[.22, .54]	–						
	<.001	–						
3. A res	.33**	.19	–					
	[.15, .49]	[-.001, .37]	–					
	<.001	.05	–					
4. C res	.21*	.14	.18	–				
	[.02, .38]	[-.05, .33]	[-.01, .36]	–				
	.03	.14	.06	–				
5. RI	-.64**	-.34	-.25**	-.11 ( $\tau_b$ )	–			
	[-.74, -.52]	[-.49, -.15]	[-.42, -.06]	[-.25, .03]	–			
	<.001	<.001	.01	.10	–			
6. RD	-.21*	-.08 ( $\tau_b$ )	-.02 ( $\tau_b$ )	-.04 ( $\tau_b$ )	.52**	–		
	[-.38, -.02]	[-.23, .07]	[-.16, .10]	[-.10, .18]	[.37, .65]	–		
	.03	.27	.73	.53	<.001	–		

**Table 2 (continued)**

Variable	1	2	3	4	5	6	7	8
7. Pro	.43**	.33**	.13 ( $\tau_b$ )	.30**	-.39**	.02	–	
	[.25, .57]	[.15, .49]	[-.002, .26]	[.12, .47]	[-.54, -.22]	[-.17, .21]	–	
	<.001	<.001	.05	.001	<.001	.83	–	
8. Pre	-.30**	-.20*	.08 ( $\tau_b$ )	.10 ( $\tau_b$ )	.32**	.36**	-.30**	–
	[-.46, -.11]	[-.38, -.01]	[-.06, .20]	[-.03, .23]	[.14, .48]	[.18, .52]	[-.46, -.11]	–
	.002	.04	.24	.13	<.001	<.001	.002	–

*Note.* “ST res”=residual for emotional stability (self-enhancement in emotional stability). “E res”=residual for extraversion. “A res”=residual for agreeableness. “C res”=residual for conscientiousness. “RI”=intrusive rumination score. “RD”=deliberate rumination. “Pro”=promotion focus. “Pre” – prevention focus. For each relationship, three elements are included, namely (from top to bottom): Pearson’s correlation coefficient ( $r$ ) or Kendall’s Tau coefficient ( $\tau_b$ ) which is specified by “( $\tau_b$ )” next to the appropriate values; the value below refers to the 95% confidence interval; and the last value signifies  $p$  value, which is reported as an exact value according to guidelines by Lakens (2022). The confidence intervals for  $\tau_b$  were calculated in R (more information in Supplementary Material). Dashes in the table indicate non-linear relationships or represent cases where identical variables are placed in cross-cells.

\*\* Correlation is significant at the .01 level (2-tailed).

\* Correlation is significant at the .05 level (2-tailed).

Nine correlations were noted to be statistically significant. Higher self-enhancement (S-E) in emotional stability ( $M = 0$ ,  $SD = .80$ ) was related to lower intrusive rumination ( $M = 27.69$ ,  $SD = 7.97$ ), lower deliberate rumination ( $M = 30.28$ ,  $SD = 6.62$ ), higher promotion focus ( $M = 30.89$ ,  $SD = 5.26$ ), and lower preventive focus ( $M = 40.92$ ,  $SD = 6.00$ ). Higher S-E in extraversion ( $M = 0$ ,  $SD = .77$ ) was correlated with lower intrusive rumination, higher promotion focus, and lower prevention focus. Moreover, higher S-E in agreeableness ( $M = 0$ ,  $SD = .87$ ) was related to lower intrusive rumination, and higher S-E in conscientiousness ( $M = 0$ ,  $SD = .90$ ) was related to higher promotion focus.

The Kendall’s Tau coefficients indicated that there were no relationships between variables, which is illustrated also in Table 2. The following relationships were calculated: S-E in extraversion and deliberate rumination; S-E in agreeableness and deliberate rumination; S-E in agreeableness and promotion

focus; S-E in agreeableness and prevention focus; S-E in conscientiousness and intrusive rumination; S-E in conscientiousness and deliberate rumination; S-E in conscientiousness and prevention focus.

### **Sensitivity Power Analysis**

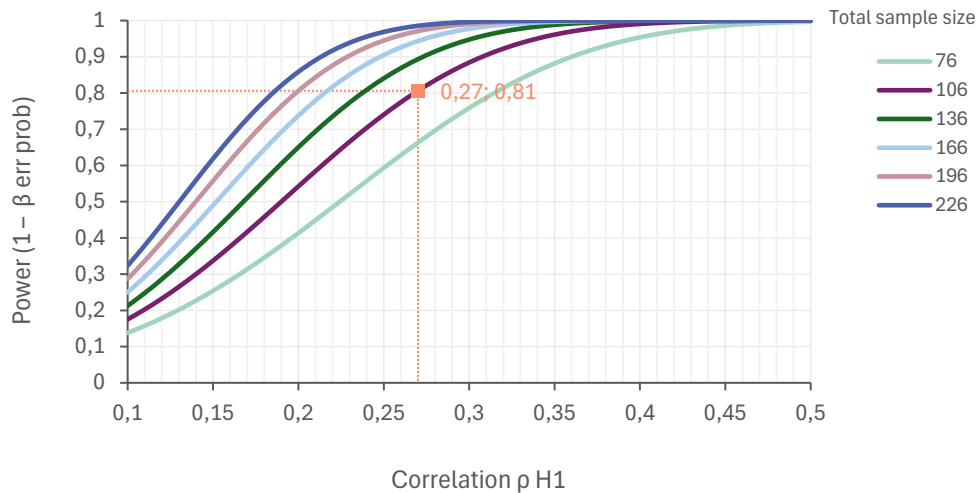
The sample initially consisted of 153 participants; however, only 106 of them completed both first- and third-person questionnaires. Given that the sample size was determined by time constraints and heuristic decision-making, it is crucial to evaluate the informative value of the obtained results. While power analysis was not conducted prior to data collection, performing sensitivity analysis can still offer insights into potential inferential errors (Schnuerch & Erdfelder, 2023). It allows for capturing the relationships between statistical power, sample size, and effect size by discussing the smallest effect of interest.

The sensitivity analysis performed via G\*Power software indicated that a Pearson's correlation coefficient with a total sample of 106 people can be sensitive to effects of  $r = .27$  (or  $-.27$ ) with 80% power ( $\alpha = .05$ , two-tailed). This implies that the study would not be able to reliably detect correlations smaller than  $.27$ . Regarding the risk of committing Type II Error, three observed correlations should be considered unreliable, namely: the correlation between self-enhancement in agreeableness and intrusive rumination; the correlation between self-enhancement in emotional stability and deliberate rumination; the correlation between self-enhancement in extraversion and prevention focus.

As illustrated in the Figure 1, increasing the sample size to 196 participants could potentially enable the detection of correlation effects of  $.2$  with 80% power. Conversely, with a sample size of 106 and aiming to detect effect sizes of  $.2$ , the power would decrease to approximately  $.5$ , thereby increasing the likelihood of committing a Type II error.

**Figure 1**

*Sensitivity Plot for Power as a Function of Correlation  $\rho_{H1}$*



*Note.* Correlation: Bivariate normal model with two tails. Correlation  $\rho_{H0} = 0$ .  $\alpha$  err prob = .05. The data point marked on the graph corresponds to a correlation of .27 and a power of .8.

## DISCUSSION

The paper investigates how motivational and cognitive variables relate to individual differences in self-enhancement in terms of personality traits. Twenty hypotheses were formulated, each corresponding to a relationship between a personality trait and a cognitive or motivational variable. In six hypotheses, the null hypothesis could not be rejected, with a 5% risk of error in the long run. The alternative hypothesis was accepted for the following hypotheses: (H1) Higher self-enhancement in terms of emotional stability is related to a lower level of intrusive ruminations; (H3) Higher self-enhancement in terms of emotional stability is related to a higher level of promotion focus; (H4) Higher self-enhancement in terms of emotional stability is related to a lower level of prevention focus; (H5) Higher self-enhancement in terms of extraversion is related to a lower level of intrusive ruminations; (H7) Higher self-enhancement in terms of extraversion is related to a higher level of promotion focus; (H19) Higher self-enhancement in terms of conscientiousness is related to a higher level of promotion focus.

Consistent with the introduction, an overly positive self-view of emotional stability, extraversion, and conscientiousness does relate to some aspects of regulatory focus and rumination. Self-enhancement in emotional stability exhibited the most links, as it was correlated with a promotion focus, prevention focus, and intrusive rumination. The only variable that did not exhibit a correlation was deliberate rumination. Furthermore, self-enhancement in extraversion correlated with promotion focus and intrusive rumination. To interpret the links with both promotion focus and rumination, it can be valuable to refer to Taylor and Brown (1998) who claimed that a distorted self-view entails a specific way of information processing. To maintain overly positive self-evaluations, one might distort incoming negative information, inconsistent with pre-existing beliefs. The concurrence of higher levels of promotion focus and non-ruminative thinking can make this process easier. A more promotion-oriented individual is sensitive to the presence or absence of positive states and is likely to take risks to attain their ideals. As intrusive ruminations are reminders of experiencing difficult events, they can challenge one's overly positive self-view. Therefore, a less ruminative way of interpreting information seems to complement the promotion focus. For instance, individuals who perceive themselves as less anxious and emotionally unstable than how they are perceived by others may focus on the need for accomplishment and growth as they strive towards their ideal selves. They probably do not struggle as much with uncontrollable rumination about past stressful events, which could potentially interfere with their motivation.

However, the justification for these interpretation proposals should be carefully examined. The predictions were made for all the five personality traits. In the meantime, the self-enhancement in terms of openness to experience was excluded from the analyses based on the lack of observation of correlations with Lie scores. Next, contrary to the predictions, the self-enhancement in conscientiousness was related only to the promotion focus. Surprisingly, no relationships were observed for an overly positive view of one's agreeableness. The question is whether it was realistic in the first place to expect the same relationship patterns for each of the personality traits. To address the informative value of the study and to find probable explanations for why there were no correlations for self-enhancement in other traits and the remaining cognitive or motivational variables, a few points will be discussed.

Firstly, the quantity of hypotheses might seem excessive. The verification of each hypothesis individually with a corresponding statistical test was intended to emphasize the exploratory nature of the study. Separate hypotheses

can be warranted (Veazie, 2006) when testing an individual hypothesis, among the twenty in the study, yields coherent conclusions.

However, a more theoretically based approach would rely on disjunction or conjunction testing, both of which involve testing joint hypotheses composed of multiple constituent hypotheses. In disjunction testing, the constituent hypotheses are combined through the logical operator 'or', and rejecting at least one null hypothesis is necessary to reject the joint null hypothesis. In the study, the joint null hypothesis could assert that self-enhancement in agreeableness is unrelated to cognitive or motivational phenomena. It would involve four constituent hypotheses, each corresponding to the relationship between self-enhancement and intrusive rumination, deliberate rumination, promotion focus, or prevention focus. Then, if one constituent hypothesis is rejected (for example, the one about no relationship between self-enhancement and promotion focus), we can accept the alternative joint hypothesis that self-enhancement in agreeableness is indeed linked to cognitive or motivational phenomena. In conjunction testing, all null constituent hypotheses, combined through the 'and' operator, must be rejected to accept a similar claim (Rubin, 2021). Formulating joint hypotheses requires each constituent hypothesis to be a substitute for the other. However, in cases like regulatory focus and rumination, which are not equivalent concepts, this condition cannot be met. Thus, the separate hypotheses approach was likely suitable for examining the relationship between variables in this study. Nevertheless, accepting only six out of twenty hypotheses may raise questions about the study's theoretical basis (Lakens, 2022).

A more comprehensive examination of potential mechanisms between the variables should be conducted. Particularly in research on self-related concepts, a systematic literature review can be invaluable. Furthermore, enhanced design planning should encompass a priori power analysis and sample size determination, that would facilitate more informative inferences via regression analysis. Moreover, a reevaluation of the definition and assessment of self-enhancement is advisable. Despite the prevalent advocacy in the literature for employing "objective" measures, the assumption that residual scores from regression of self-reported personality traits on other-reported traits capture meaningful psychological constructs may be challenged. Our understanding of the specific variance remains elusive, as it may encompass data beyond observer access without necessarily indicating bias. Attempts to elucidate it through correlations with Lie scores yielded modest results, peaking at 13% in coefficient of determination. Moreover, the residuals primarily rely on self-



reported personality traits, which prompts inquiry into additional insights beyond self-report, particularly concerning correlations between emotional stability and intrusive rumination. The current approach may resemble statistical reification practices, where abstract measures are used instead of developing substantially relevant theoretical constructs. One avenue for advancing theoretical validity involves delineation of qualitatively distinct personality profiles, such as self-enhancement, self-diminishment, and an accurate portrayal of personality. This can be accomplished through the integration of the individual differences paradigm with the social-cognitive personality frameworks.

Among other limitations, ERRI was not sufficiently validated. The original questionnaire was developed to assess responses to an adverse event. However, it was partially modified for the study to measure a general tendency to ruminate in response to stressful events. Although the changes were minor, the questionnaire still requires a more thorough validity assessment. The adaptiveness measure choice also needs to be addressed. Intrusive ruminations can be indicative of maladaptive cognitive processing and psychopathology. While several studies revealed advantages of self-enhancement, Kurt and Paulhus (2008) suggest that positive outcomes are observed when using a self-reported adaptiveness criterion. As the authors claim, the self-reported well-being should be combined with evaluations based on informant-reports to avoid self-biases. However, in their study, the criterion was measured with rather abstract items; they referred to the self as the whole person, which may evoke socially desirable responses. It can be cautiously said that recalling one's responses to specific negative events of a specific time may be less threatening to the self. Certain self-reported items are not necessarily linked to strong biases.

## CONCLUSION

In this study, self-enhancement in three of the Big Five traits (emotional stability, extraversion, and conscientiousness) was linked to promotion focus, prevention focus, or intrusive rumination. These relationships could suggest that enhancing one's traits such as emotional stability can help individuals focus more on accomplishments rather than safety, thereby regulating motivation without ruminating on past difficulties. However, the inconsistent findings across all personality traits highlight the need for further research and

theory refinement. Future studies should improve self-enhancement measurements and explore additional factors influencing its adaptive and maladaptive outcomes.

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