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Self-absorption paradox is not a paradox: Illuminating the dark side of self-reflection

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Self-absorption paradox is not a paradox: Illuminating the dark side of self-reflection

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Although considered an important component of a healthy personality, self-reflection has not so far been shown to have any specific benefits for mental health. This research addresses this issue by taking into consideration two important suppressor variables, self-rumination and the need for absolute truth. The latter is an innovative variable, defined and presented in this research. The first two studies aimed to validate a new measure that acts as an operational definition of the need for absolute truth. The first study was conducted with two group of participants; the first group consisted of 129 females and 67 males, mean age = 20 years, and the second 182 females and 104 males, mean age = 27. In the second study, participants were 22 females and 18 males, mean age = 20.5. In the final study, conducted with 296 female, 163 male participants (mean age = 37), suppressor effects were tested using structural equation modeling. The results showed that by taking account of these two suppressor variables, particularly the need for absolute truth, the expected relationship between self-reflection and mental health was revealed. The need for absolute truth was shown to be crucial for understanding the effects of self-reflection on mental health, therefore it should be considered in all processes of psychotherapy.

Keywords: Self-consciousness; Self-reflection; Self-rumination; Need for absolute truth; Mental health; Self-absorption paradox.

Bien que l'auto-réflexion soit considérée comme un élément important d'une personnalité saine, il n'a pas été démontré jusqu'à présent qu'elle avait des avantages spécifiques pour la santé mentale. Cette recherche aborde cette question en tenant compte des deux variables de suppression importantes, l'auto-rumination et le besoin de vérité absolue. Ce dernier est une variable novatrice, définie et présentée dans cette recherche. Les deux premières études visaient à valider une nouvelle mesure servant de définition opérationnelle du besoin de vérité absolue. La première étude a été menée avec deux groupes de participants. Le premier groupe était composé de 129 femmes et de 67 hommes dont l'âge moyen était de 20 ans et le second, de 182 femmes et de 104 hommes dont l'âge moyen était de 27 ans. Dans la deuxième étude, les participants étaient 22 femmes et 18 hommes dont l'âge moyen était de 20,5 ans. Dans la dernière étude, comprenant 296 femmes et 163 hommes (âge moyen = 37 ans), les effets suppresseurs ont été testés à l'aide de la modélisation par équation structurelle. Les résultats ont montré qu'en tenant compte de ces deux variables de suppression, particulièrement le besoin de vérité absolue, la relation attendue entre l'auto-réflexion et la santé mentale apparaissait. La nécessité d'une vérité absolue s'est avérée cruciale pour la compréhension des effets de l'auto-réflexion sur la santé mentale, elle devrait donc être prise en compte dans tous les processus de psychothérapie.

Aunque se considera un componente importante de una personalidad saludable, hasta el momento no se ha observado que la autoreflexión tenga algún beneficio específico para la salud mental. Esta investigación aborda este tema al tomar en cuenta dos variables importantes represoras: la autorumiación y la necesidad de la verdad absoluta. Esta última es una variable innovadora, definida y presentada en este estudio. Los primeros dos estudios apuntaron a validar una nueva medida que actúa como una definición operacional de la necesidad para la verdad absoluta. El primer estudio se llevó a cabo con dos grupos de participantes: el primer grupo estuvo compuesto por 129 mujeres y 67 hombres, edad media = 20; y el segundo 182 mujeres y 104 hombres, edad media = 27. En el segundo estudio, los participantes fueron 22 mujeres y 18 hombres, edad media = 20,5. En el último estudio compuesto por 296 participantes femeninos y 163 participantes masculinos (edad media = 37) se pusieron a prueba los efectos represores utilizando el modelado de ecuaciones estructurales. Los resultados mostraron que al tomar en cuenta estas dos

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variables represoras, especialmente la necesidad de la verdad absoluta, se reveló la relación esperada entre la autoreflexión y la salud mental. Se mostró que la necesidad de verdad absoluta era crucial para entender los efectos de la autoreflexión sobre la salud mental y, por lo tanto, debería ser tenida en cuenta en todos los procesos psicoterapéuticos.

The imperative "Know thyself" has been a key concept in the history of thought and has had critical implications for the scientific study of human behavior. For more than half a century, the literature on mental health has been concerned with the benefits of self-consciousness. Research has shown that self-consciousness is beneficial for self-regulation (Grant, Franklin & Langford, 2002), identity development (Luyckx, Soenens, Berzonsky, Smits, & Vansteenkiste, 2007), and self-knowledge (Trapnell & Campbell, 1999). However, self-consciousness also has negative consequences, and a growing body of literature reveals data that show a positive relationship with depression (Jones, Papadakis, Hogan & Strauman, 2009), obsessive thinking (Ghorbani, Watson, Krauss, Davison & Bing, 2004), and psychological distress (Panayiotou & Kokkinos, 2006). Moreover, it was shown to be negatively correlated with happiness (Lyke, 2009).

Efforts to shed light on this apparent contradiction—the paradox of self-absorption—include those of Trapnell and Campbell (1999), who presented a conceptualization of self-consciousness based on the personality dimensions of neuroticism and openness to experience. They revealed a motivational ambiguity in the private self-consciousness subscale of the well-known Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975). Taking personality as a base, they proposed a new model of private self-consciousness in which neuroticism was linked to the negative component or motive behind self-consciousness, self-rumination (SRU). In contrast, openness to experience was linked to the positive epistemic component, namely self-reflection (SRF). The measure developed as a result of this research by Trapnell and Campbell (1999), the Rumination–Reflection Questionnaire (RRQ), thus presupposes two conflicting motives behind self-consciousness, one harmful to mental health and the other beneficial.

While the negative aspect of SRU is uncontroversial, there is dispute over the nature of SRF, thought to be the positive motive behind self-consciousness. In Trapnell and Campbell's conceptualization, the negative motive has been clearly shown to be detrimental for mental health. However, there is no such clarity for SRF, the positive element behind self-consciousness, because of its controversial relationship with other variables. For example, it has a negative relationship with self-concept clarity (Campbell, Trapnell, Heine, & Katz, 1996) and a weak and nonsignificant positive relationship with insight (Lyke, 2009). Another unexpected result is SRF's lack of correlation (Luyckx et al., 2007) or inverse correlation (Silvia & Philips, 2011) with self-esteem. Moreover, the research also shows that SRF is positively correlated with depression (Jones et al., 2009; Luyckx et al., 2007).

THE NEED FOR ABSOLUTE TRUTH AND RUMINATION AS SUPPRESSORS

Given that self-knowledge or self-awareness contributes to mental health (Higgins, 1996), SRF is expected to be positively and strongly correlated with mental health because of its theoretical links to self-knowledge (Trapnell & Campbell, 1999). However, as stated, the relationship has been found to be of considerable complexity. Possible reasons for this include the neglect of two important variables in the association of SRF with mental health, the need for absolute truth and SRU. The first variable is a motive that can be traced back from the RRQ, the starting point of the current research.

The SRF dimension of the RRQ consists of such items as "I love exploring my 'inner' self," "I love analyzing why I do things," "I'm very self-inquisitive by nature," and "I care much for self-analysis." Agreement with the items of the SRF subfactor of the RRQ in this respect indicates not only the possession of a pure epistemic curiosity, but also a high propensity to engage in abstract self-analysis aimed at capturing absolute knowledge about the self. I call this motive "the need for absolute truth" (NAT). Potential difficulties exist in the current construct of SRF with regard to item content since it is confounded by this motive for finding absolute truths about, or beyond the present self. Thus, SRF may be subject to contrasting or conflicting motives, parallel to the motives behind private self-consciousness as demonstrated by Trapnell and Campbell (1999).

Research gives important indications of the potential detrimental effect of self-reflection if it consists of, or is motivated by, a high-level and abstract analysis concerning personal experiences or the self. Hixon and Swann (1993), for example, showed that when reflection is triggered by a search for causes, i.e., asking "why?", it is detrimental to insight. Similarly, Conway, Ginannapoulos, Ciank, and Mendelson (1993) clearly showed that those with

chronic distress also had a tendency to engage in complex causal reasoning in many aspects of their lives, and this inclination was correlated with their tendency to reflect on themselves. Additional support is provided by the research of Watkins and colleagues (Rimes & Watkins, 2005; Vassilopoulos & Watkins, 2009; Watkins & Teasdale, 2004), suggesting that focusing on one's own personal experiences in a less analytical way is more beneficial for mental health than a more analytical focus on meanings and causes.

After reviewing this line of research, Watkins (2008) indicates that self-focus is detrimental for mental health if it consists of abstract construals of events and actions. By abstractness, Watkins means general, superordinate, and decontextualized evaluations of psychological experiences. Such representations are considered to refer to the essence and meaning of self-relevant events and actions. In contrast, low-level representations (focusing on "how"), concrete, contextual and subordinate, are more constructive, and therefore make a contribution to mental health. Similarly, Stöber, Tepperwien, and Staak (2000) differentiate concreteness from abstractness; abstractness was defined as indistinct, cross-situational, equivocal, unclear, and aggregated, in contrast to concreteness, defined as distinct, situationally specific, unequivocal, clear and singular. In his review, Watkins notes three different ways in which these different representations affect mental health. Firstly, they impact problem solving; generally speaking, the lower the level of representation, the more elaborated and concrete the evaluation of the situation is. Secondly, they influence self-regulation because less abstract thought allows greater cognitive resources to be available for self-regulation, reduces anxiety, and increases task performance. Finally, there are consequences for the degree of generalization; more abstract thought is associated with overgeneralization, a common problem in the development of depression.

It is clear that NAT refers to one of the highest-level representations concerning the self: the truth beyond the self or personal experiences, a truth that is overgeneralized, superordinate and valid in all contexts. Thus, the three main negative consequences of high-level representations proposed by Watkins would clearly also apply to NAT. First, a higher level of NAT would increase the tendency to overgeneralize, since the basic aim is to find general, superordinate, and decontextualized rules for behavior or meaning. It would also be more difficult for those who have higher levels of NAT to self-regulate since, as Watkins indicated, self-regulation benefits from concrete thinking and focusing on the immediate demands of the present situation. Finally and most importantly, in every instant of self-reflection, a higher level of NAT would obstruct problem solving on interpersonal and intrapersonal levels, through the counterproductive need to find a fundamental explanation or "meaning" for each specific situation. Nisbett and Wilson (1977) argue that focusing on a higher-level representation (i.e., the question "why?") increases the tendency for individuals to approach situations from general theories or common accounts, which can never be wholly applicable to any given situation, resulting in diminished insight.

In addition to NAT, another variable that should be considered in this context is SRU. Research gives clear evidence that reflectors are also ruminators (Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2009; Takano & Tanno, 2009). Consistent with these findings, Joorman, Dkane, and Gotlib (2006) imply that the effect of SRF on mental health is potentially positive if the effects of SRU are canceled out. Lischetzke and Eid (2003) found that controlling for SRU produced an expected, although minor, change in direction of the relationship between self-consciousness and affective wellbeing.

As Lischetzke and Eid (2003) indicated, taking account of suppressor variables is important in order reduce the controversy surrounding the positive and negative aspects of SRF. However, such suppressor hypotheses have not been tested. Their research was unique in that it considered both dysfunctional (e.g., "It happens that certain thoughts keep going round in my head") and functional self-consciousness (e.g., "I am confident that I can solve a personal problem even if there seems to be no solution at first") as important variables in illuminating the positive aspects of self-reflection, and found that these variables acted as suppressors. However, their research is subject to significant limitations, because by focusing solely on positive and negative mood as criteria, other important mental health variables were overlooked. Moreover, the magnitude of the regression coefficients did not increase dramatically (about 0.15).

The main rationale of the present research is that the consideration of NAT and SRU as suppressor variables will lead to a substantial clarification of the ambiguity over the relationship of SRF and mental health. The first aim is to present a new measure to assess individuals' level of NAT, and represent data for its construct validity and reliability. The first and second studies, consequently, were conducted to show the factor structure and retest reliability of this new measure.

The aim of Study 3 was twofold: first, the convergent validity of this new measure, and second, its suppressor effect in addition to SRU. It was expected, consequently, that the NAT, being a form of self-focus, would be positively correlated with both SRF and SRU. Moreover, the NAT was expected to

be correlated positively with mental health problems, such as anxiety and depression, and negatively with positive mental health indicators, such as self-esteem, self-concept clarity, and insight.

It was also considered that this study could contribute to the identification of the expected relationship between SRF and mental health variables by taking into consideration the NAT and SRU, which suppress the irrelevant aspects of SRF. It was hypothesized that the relation of SRF with self-knowledge (self-concept clarity, insight) and evaluative components of the self (self-esteem) would be positive if these variables were considered as suppressors. The relationship between SRF and negative mental health indicators, on the other hand, was expected to become negative.

STUDY 1 (SCALE CONSTRUCTION, EXPLORATORY AND CONFIRMATORY FACTOR ANALYSES)

The main aim of this study was to create items to tap a construct considered to make an important contribution to psychopathology, the NAT, which refers to the need to find the absolute truth about oneself. The items were developed by the author, and the process consisted of consultations with experts in psychology and linguistics. At the end of this process, three items were eliminated and a number of others were revised. It is possible to argue that the NAT is a three-dimensional construct reflecting one's need for absolute knowledge about oneself, others, and the world. The intention, however, was to create a one-dimensional model focused on only one of these factors, the self. The reason for this was that the two other dimensions were considered more relevant to different components of self-consciousness rather than private self-consciousness, e.g., public self-consciousness, and were therefore excluded.

Method

To obtain evidence for construct validity, two sets of data from different samples of participants were used. Written informed consent was obtained from all the participants. The first sample was conducted for exploratory factor analysis. The NAT Scale was administered to 196 undergraduate students (129 female and 67 male; mean age = 20 years). The second sample, for confirmatory analysis, consisted of 286 students, lecturers, and administration staff from one university (182 female and 104 male; mean age = 27).

Results

Exploratory factor analysis

Prior to conducting an exploratory factor analysis, two indicators were examined to determine whether the sample was appropriate. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was used to evaluate the data. The KMO index was found to be .74, indicating that the sample was appropriate for factor analysis. Tabachnick and Fidell (2001) suggested that values greater than .60 are required for factor analysis. Additionally, Bartlett's test of sphericity was significant ($p < .001$).

To determine the factor structure of the NAT Scale, a principal-axis exploratory factor analysis was performed on seven items using Varimax rotation with Kaiser normalization. The number of components to be extracted was then determined by (a) eigenvalues above 1.0 and (b) Cattell's scree-test.

Factor analysis yielded two factors with eigenvalues above 1. The first factor, with a 2.88 eigenvalue, accounted for 41% of the variance, while the second accounted for 19% of the additional variance, with an eigenvalue of 1.36. The second factor was eliminated because it consisted of only two items ("I always want to know the truth about events" and "The truth is waiting somewhere to be discovered by us"). In a repetition of the analysis, the factor retained accounted for 51% of the variance with an eigenvalue of 2.56. Table 1 represents the factor loadings of the items.

In addition to relatively high factor loadings, corrected item-total correlations (ranging from .40 to .70) were considered acceptable validity estimates for

TABLE 1
Factor loadings of the items of the NAT Scale

Item/Factor	*FLs*	*M*	*SD*	α
01. I always try to find "the facts" about me	.55	3.43	1.20	.73
02. I think that the existing and real me are different	.45	2.49	1.23	.76
03. I hope I will find myself as I really am one day	.69	2.81	1.30	.68
04. I always think about "the facts" about me	.86	2.83	1.18	.64
05. I try to understand what my experiences actually mean	.55	3.16	1.08	.73

$N = 196$. The NAT Scale item ratings range from 1 to 5. Likert scale anchors for Study 1 were 1 = *strongly disagree* and 5 = *strongly agree*. Internal consistency estimate was $\alpha = .75$; FLs = factor loadings; α = Cronbach's alpha coefficient if item deleted.

the NAT Scale. Cronbach's alpha coefficient was found to be .75.

Confirmatory factor analysis

Confirmatory factor analysis was conducted on a covariance matrix of the scores on the NAT Scale using Lisrel 8.8 (Jöreskog & Sörbom, 1993). Since the data were ordinal, the analysis was conducted using robust maximum likelihood, as suggested by Jöreskog and Sörbom (2001). Thus, the analysis, using an asymptotic covariance matrix based on polychoric correlations, produced nearly perfect goodness of fit statistics (Table 2).

The analysis produced only one modification, an error covariance between second and third items, which is plausible, considering the relative similarity in contents of the two items ("I think that the existing and real me are different," "I hope I will find the real me one day"). Since the measurement model fitted perfectly to the data, this modification was considered unnecessary.

This measurement model resulted in relatively high standardized factor loadings ranging from .55 to .89 and yielded *t*-values ranging from 9.19 to 22.62.

STUDY 2 (RETEST RELIABILITY)

Method

The five-item NAT Scale was completed by 40 enrolled undergraduate students (22 female and 18 male) with ages ranging from 18 to 23 years, and a mean age of 20.5. All participants provided informed consent. The scale was administered on two separate occasions with an interval of a month between.

Results

The correlation coefficient between the first and second implementations for the NAT Scale was .72. This coefficient can therefore be considered a preliminary indication that scores obtained through the NAT scale are considerably stable over time.

TABLE 2
The results of confirmatory factor analyses on the scores of the NAT Scale

Indices	
χ^2/df	6.24/5
GFI	0.98
SRMR	0.03
IFI	1.00
RMSEA	0.030
CFI	1.00

$N = 286$. Confidence interval for the RMSEA was 0.00–0.042; GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index; SRMR = standardized root-mean-square residual; RMSEA = root-mean-square error of approximation; CFI = comparative fit index; IFI = incremental fit index.

STUDY 3 (VALIDATION OF THE NAT SCALE AND TESTING SUPPRESSION HYPOTHESES)

An important aim of this study was to obtain evidence concerning the construct validity of the NAT scale by investigating its association with a number of mental health variables in addition to its association with SRF and SRU.

Moreover, I tested to see whether NAT and SRU would act as suppressor variables in the relationship between SRF and mental health variables. If it is in fact the case that SRF consists of both positive and negative aspects, NAT and SRU have great potential for revealing the positive aspects in the variance of SRF through their suppression of negative aspects.

All variables in this study were represented as latent variables. Thus, indicators were created by an item parceling method, which creates approximately equivalent indicators by spreading "better" and "worse" items evenly across the parcels. In order to create parcels that would function as indicators of the latent variables, items were ranked according to the size of the item-total correlation, and sets of items were summed. The numbers of parcels for variables were distributed as follows: three each for self-concept clarity, depression, self-esteem, SRU, and SRF; five for anxiety; and two each for insight and NAT.

Method

Participants

The participants were 459 graduate and undergraduate students (296 women, 163 men, mean age 37) from three universities. Additional data were gathered from two other participant groups: elementary and secondary school teachers, and the residents of a number of nursing homes. Assessment was carried out in groups for students and on an individual basis for the other participants. Written informed consent was obtained from all the participants.

Variables and measures

Reflection and rumination. The RRQ (Trapnell & Campbell, 1999) was used in order to measure participants' levels of reflection and rumination. The scale consists of 24 items—12 items for each dimension. Ratings are indicated on a scale from 1 (disagree strongly) to 5 (agree strongly) for each item. The scale was adapted to Turkish using a back-translation procedure. In this study, the coefficients of alpha were .87 for SRU and .78 for SRF.

Need for absolute truth. The NAT Scale developed in the first study was used in order to measure participants' level of the need to find absolute knowledge about themselves. Responses are specified on a five-point Likert-type scale, in which higher scores reflect a greater level of NAT. Internal consistency was found to be $\alpha = .78$.

Self-concept clarity. The Self-Concept Clarity Scale (SCCS) was developed by Campbell et al. (1996) as a measure of the internally consistent and temporally stable definitions of personal attributes, or of the contents of one's self-concept. The response format of the SCCS is a five-point Likert scale anchored by 1 = strongly disagree and 5 = strongly agree, with higher scores indicating a more consistent and stable self-concept. The average alpha reliability coefficient with regard to the three studies of the research was .86. The scale was adapted into Turkish by Sümer and Güngör (1999), who found the Cronbach's alpha reliability coefficient to be $\alpha = .89$ in the study. Similarly, in this study it was found to be $\alpha = .85$.

Self-esteem. This study used the 10-item Rosenberg Self-esteem Inventory (RSEI; Rosenberg, 1965), a commonly used measure of global self-esteem. The respondents' levels of agreement with 10 self-evaluative statements were averaged to produce an index of self-esteem. Responses were specified on a five-point Likert-type scale, in which higher scores reflect more positive self-evaluations. RSEI was first translated into Turkish by Tuğrul (1994), who reported a Cronbach's alpha coefficient of .86, which exactly corresponds with the findings of this study.

Insight. The insight subscale of the Balanced Index of Psychological Mindedness (BIPM; Nyklicek & Denollet, 2009) was used to measure participants' level of self-rated insight. The insight subscale consists of seven items, including "I am often not aware of my feelings," "I don't know what's going on inside me." This subscale was back-translated. Responses were specified on a five-point Likert-type scale, in which higher scores reflect greater levels of self-reported insight. The alpha coefficient for the subscale was found to be .78 in this study.

Depression. The depression subscale of the Brief Symptom Inventory (BSI) was used in order to measure individuals' depression symptoms. The BSI, developed by Derogatis (1992) as a shortened version of the SCL-90-R, was adapted to Turkish by Şahin and Durak (1994). It consists of 53 items rated on a five-point Likert-type scale, anchored by 1 = Not at all Distressed and 5 = Extremely Distressed. This scale was developed in order to measure nine different mental health indicators, including depression, interpersonal sensitivity, somatization, obsessive-compulsive disorder, anxiety, and paranoid thoughts. The adapted version of BSI revealed five subscales as a result of exploratory factor analysis: Anxiety, Depression, Negative Self, Somatization, and Hostility. The Cronbach's alpha reliability coefficients have been found to be acceptable, .95 to .96 for the Turkish form. The alpha coefficient for the depression subscale was found to be .85 in this study.

Anxiety. The Beck Anxiety Scale (BAS) was developed by Beck, Epstein, Brown, and Ster (1988) in order to measure self-reported anxiety levels of individuals. The scale consists of 21 items rated on a four-point Likert-type scale, anchored by 0 = Not at all Distressed and 3 = Extremely Distressed. The BAS was adapted to Turkish by Ulusoy, Şahin, and Erkmen (1998) and was found to have a high Cronbach's alpha coefficient, .93. The alpha coefficient for the BAS was found to be .87 in the present study.

Results

Descriptive statistics and intercorrelations

A measurement model was tested to identify correlations among the latent variables. Descriptive statistics and intercorrelations for all latent variables are given in Table 3. The goodness of fit statistics are presented in the footnote to Table 3, indicating good fit to the data.

As can be seen from Table 3, NAT has moderately positive correlation with both SRU and SRF, indicating that it is closely related to self-focused attention. Additionally, it is related positively with all psychopathological indicators, but negatively with mental health indicators, providing support for the hypothesis that the NAT is a type of self-related motivation that has a detrimental effect on mental health.

Findings also show that NAT is negatively correlated with age ($r = -.35$, $p < .01$) and that there was no significant difference between males ($M = 13.10$, $SD = 4.43$) and females ($M = 13.80$, $SD = 4.39$), $t(457) = 1.63$, $p = .103$.

Consistent with the literature, SRF was found to be inversely related with mental health, except for its weak and positive correlation with insight. The relationship of SRF with psychopathology is clear; it

TABLE 3
Descriptive statistics and intercorrelations of latent variables

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1. NAT	–							
2. SRF	0.63**	–						
3. SRU	0.54**	0.48**	–					
4. SCC	−0.58**	−0.16**	−0.56**	–				
5. Self-esteem	−0.42**	−0.01	−0.48**	0.75**	–			
6. Insight	−0.28**	0.17**	−0.29**	0.57**	0.49**	–		
7. Depression	0.51**	0.30**	0.68**	−0.71**	−0.59**	−0.38**	–	
8. Anxiety	0.47**	0.29**	0.75**	−0.63**	−0.70**	−0.33**	0.85**	–
M	13.57	38.32	35.90	25.64	39.85	27.81	29.36	53.09
SD	4.42	7.25	8.82	8.59	7.22	4.93	8.07	11.91

$N = 459$. $\chi^2 = 448.87$, df = 224, $p = 0.00$, RMSEA = 0.047 (95% CI: 0.041–0.053), CFI = 0.99; SRMR = 0.036; GFI = 0.92; IFI = 0.99; RMSEA = root-mean-square error of approximation; CFI = comparative fit index; SRMR = standardized root-mean-square residual; GFI = goodness-of-fit index; IFI = incremental fit index. $^{**}p < .01$.

covaries with both depression and anxiety. SRU, similarly, was correlated positively with psychopathology, but negatively with mental health. Finally, as expected, SRF and SRU are positively and moderately correlated with each other, which is a confirmation that an overlap exists between these constructs.

Suppression analyses

To test whether NAT and SRU suppressed variance in SRF, a set of multiple regression analyses were conducted for each criterion variable. SRU and NAT were included in different equations, in combination, and as separate items. This was to allow the clear distinction between the suppressor effect of each variable. As a consequence, for each criterion variable, three separate regression equations were tested (Figure 1). Each criterion variable (self-concept clarity, self-esteem, insight, depression, and anxiety) was regressed on SRF and NAT in Model 1, and on SRF and SRU in Model 2 in the same equation. In Model 3, each criterion variable was regressed on SRF, NAT and SRU in order to reveal cumulative suppressor effects of both NAT and SRU. The results of these analyses are presented in Table 4.

The goodness of fit statistics for the models demonstrated good or perfect fit to the data. To provide a direct comparison to the bivariate correlations, the correlation coefficients from Table 3 are again represented in Table 4. The suppressor effect of NAT was found to be stronger than that of SRU for all criteria except anxiety.

Impressive suppressor effects of NAT were found on both self-concept clarity and self-esteem. For these two criteria, SRF received a positive regression weight (i.e., the sign changed from negative to positive) and it reached significance. The same suppression effect was also evident for SRU, although with a relatively weaker effect. When both NAT and SRU were included into the equation, the regression

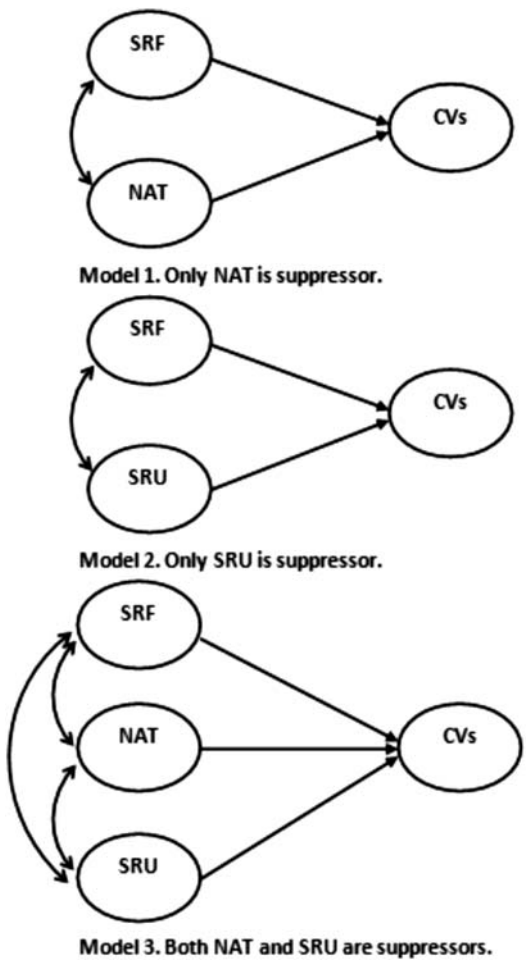

Figure 1. Suppressor effects of SRU and NAT on the association between SRF and mental health variables. SRF = self-reflection; NAT = need for absolute truth; SRU = self-rumination; CVs = criterion variables.

TABLE 4
Latent regression analyses predicting self-concept clarity, self-esteem, insight, anxiety, and depression by NAT, SRU and SRF: Suppressor effects of NAT and SRU

Criterion/Model/Predictor	*Goodness of fit statistics*							*Regression*	*Correlation*
	χ^2	*df*	*RMSEA*	*GFI*	*CFI*	*SRMR*	*IFI*	β	*r*
SCC									
Model 1	44.87	17	.060	.98	.99	.039	.99		
SRF								.34**	−.16**
NAT								−.80**	−.58**
Model 2	50.35	24	.049	.98	.99	.037	.99		
SRF								.14*	−.16**
SRU								−.62**	−.56**
Model 3	128.37	59	.057	.95	.98	.055	.98		
SRF								.44**	−.16**
NAT								−.63**	−.58**
SRU								−.43**	−.56**
SE									
Model 1	29.62	17	.040	.98	.99	.018	.99		
SRF								.44**	−.01
NAT								−.70**	−.42**
Model 2	37.37	24	.035	.98	1.00	.027	1.00		
SRF								.29**	−.01
SRU								−.62**	−.48**
Model 3	63.83	38	.039	.98	.99	.026	.99		
SRF								54**	−.01
NAT								−.52**	−.42**
SRU								−.46**	−.48**
Insight									
Model 1	14.23	11	.025	.99	1.00	.015	1.00		
SRF								.59**	.17**
NAT								−.66**	−.28**
Model 2	22.87	17	.027	.99	1.00	.025	1.00		
SRF								.41**	.17**
SRU								−.49**	−.29**
Model 3	39.04	29	.027	.98	1.00	.024	1.00		
SRF								.67**	.17**
NAT								−.53**	−.28**
SRU								−.32**	−.29**
Depression									
Model 1	18.91	17	.016	.99	1.00	.018	1.00		
SRF								−.04	.30**
NAT								.54**	.51**
Model 2	36.27	24	.033	.98	1.00	.025	1.00		
SRF								−.04	.30**
SRU								.70**	.68**
Model 3	48.31	38	.024	.98	1.00	.024	1.00		
SRF								−.18**	.30**
NAT								.30**	.51**
SRU								.61**	.68**
Anxiety									
Model 1	40.97	32	.025	.98	1.00	.026	1.00		
SRF								−.02	.29**
NAT								.48**	.47**
Model 2	77.22	41	.044	.97	.99	.030	.99		
SRF								−.09	.29**
SRU								.79**	.75**
Model 3	99.01	59	.038	.97	.99	.030	.99		
SRF								−.18**	.29**
NAT								.19**	.47**
SRU								.73**	.75**

$N = 459$. SRF = self-reflection; NAT = need for absolute truth; SRU = self-rumination; SCC = self-concept clarity; SE = self-esteem; RMSEA = root-mean-square error of approximation; GFI = goodness-of-fit index; CFI = comparative fit-index; SRMR = standardized root-mean-square residual; IFI = incremental fit index; β = latent standardized multiple regression weight; r = latent bivariate correlation coefficient with the criterion.

weight changed from −.16 to .44 for self-concept clarity, and from −.01 to .54 for self-esteem.

In regard to insight, its zero-order correlation with SRF was already positive and significant. Although not consistent with the classical definition of suppression, both NAT and SRU had been shown to act as suppressors because of the clear increment in the regression weight in all equations. The inclusion of the two suppressors in the regression equation resulted in an increase in the regression weight from .17 to .59 and .41 for NAT and SRU respectively, while the cumulative effect of these two suppressors increased the weight to .67.

The suppressor effects of NAT and SRU on the relationship between SRF and psychopathology were also impressive. For these two criteria, SRF received a negative regression weight (i.e., the sign changed from positive to negative) although it failed to reach significance when only one suppressor was included in the equation. The cumulative effect of these two suppressors changed the regression weight of SRF from .30 to −.18 and from .29 to −.18 for the criteria of depression and anxiety respectively, with the regression weights reaching significance in both cases.

DISCUSSION

Past research has tried to resolve the paradox of self-absorption by taking into consideration different motives behind self-consciousness (Trapnell & Campbell, 1999). Such an outlook considers private self-consciousness as having both detrimental (SRU) and beneficial components (SRF). However, in view of the failure of research to show any benefits of SRF for mental health, this research aims to enable its true contribution to be revealed by taking account of the role of suppressor variables.

In addition to SRU, research gives important indications that self-consciousness incorporates another harmful motivation (Hixon & Swann, 1993; Rimes & Watkins, 2005; Vassilopoulos & Watkins, 2009; Watkins & Teasdale, 2004). This phenomenon has been conceptualized as NAT in the context of SRF, the potentially endless search for unchangeable, unalterable, and constant knowledge. This process inevitably leads to disappointment and inner conflict due to the infinite number of possible pathways related to the criterion of "absolute truth." The present research, not surprisingly, shows that the NAT as a one-dimensional construct is positively correlated with psychopathology and negatively correlated with mental health. The findings indicate that a stronger motivation to obtain absolute truth about self is more likely to lead to depression and anxiety. Moreover, such a motivation is closely and inversely related to self-esteem, insight, and the clarity of self-concept.

The suppression analyses also showed that this motivation plays a critical role in understanding the ambiguity over the relation of SRF with mental health indicators. For all criterion variables, once NAT was included in the regression analyses, the regression weight of SRF either changed to the expected direction or increased dramatically. SCC was negatively correlated with SRF, consistent with past research (Campbell et al., 1996) and the inclusion of the NAT in regression analysis not only changed the direction of the relationship, but also caused a substantial increase in regression weight. SRU was also found to act as a suppressor, although to a lesser extent than NAT. Combined, these two suppressors resulted in a great increment in regression weight. The same pattern is evident for self-esteem; in line with the findings of Lyke (2009), there was a positive and weak correlation between SRF and insight. However, the relationship between these constructs was dramatically increased when NAT was controlled for. SRU also acted as suppressor, and contributed to the increment in regression weight.

Corresponding results were found for the criteria of anxiety and depression. The suppressor effects of the NAT and SRU on the relationship between SRF and depression were equal, while the suppressor effect of SRU was relatively stronger for anxiety. Taking both NAT and SRU as suppressors, the relationship of SRF with both anxiety and depression reached significance.

These results clearly show that the self-absorption paradox can be illuminated by taking into consideration those motives behind SRF that are harmful. To my knowledge, this is the only research that addresses the conflict inherent in the self-absorption paradox by revealing the beneficial effect of SRF, and the conditions under which such an effect can take place. It could be argued, in this respect, that in the context of variables related to self, e.g., SCC, self-esteem, and insight, only the NAT has the potential to resolve this paradox, making it an essential factor in the assessment of SRF. In the context of psychopathology, on the other hand, taking both NAT and SRU into consideration is likely to produce a more accurate understanding. It is known from earlier research that SRU is a close correlate of psychopathology (Smith & Alloy, 2009). Given that this relationship is stronger than that of SRF to self-related variables, SRF reached a significant and negative level of association only by taking both SRU and NAT as suppressors.

Although previous research offers some insight into the conditions in which private self-consciousness provides benefits to mental health, such insight was limited in that it only considered the moderator effects of a restricted number of variables (e.g., Fejfar & Hoyle,

2000). In contrast, this research suggests that there is another component, previously overlooked, in the exploration of private self-consciousness, the NAT. This factor could be considered as an important dimension of "self-focus" under which rumination and reflection could be subsumed (Smith & Alloy, 2009).

The confirmatory factor analysis showed a considerable level of covariance between two NAT scale items ("I think that the existing and real me are different," "I hope I will find the real me one day"). This covariance raises the possibility that the scale contains two hidden dimensions. A careful examination of all items, in this respect, indicates that the future research might consider NAT as a two-dimensional construct: "searching for the true self" and "searching for the causes of one's experiences." In a theoretical context, it is entirely conceivable that the desire for absolute truth about oneself contains two components; a need for a definite description of oneself that is valid in every context, and also knowledge of the exact determinants behind one's personal experiences. Therefore, expanding the conceptual status of NAT could increase insight into the structure of self-focus.

The construct of NAT contributes to the understanding of the nature of self-focused attention, leading to new insights into the apparent contradiction of the harmful effects of SRF. Future research should examine the reasons behind this harmful desire to find absolute knowledge about self. Findings show that NAT is age-related. Therefore, research could usefully focus on growth-related variables such as the meaning of life, purpose in life, and ego development, all of which are potential correlates of NAT.

The findings presented here could serve in future research on self-knowledge and self-awareness, especially in relation to discrepancies in self-representations. The objective self-awareness theory (Duval & Wicklund, 1972), for example, assumes that self-consciousness has potential detrimental effects on mental health since it activates individual discrepancies between the current and ideal self-representations. This present research focuses on another potentially important discrepancy in the self system, between actual and absolute self, caused by NAT. Given the previously discussed impossibility of finding absolute knowledge about oneself, higher levels of NAT would exacerbate this discrepancy. The moderate and negative relationship between NAT and self-concept clarity obtained in Study 3 raises the possibility of such an interaction.

Beyond this basic discrepancy, different kinds of self-discrepancies have been defined (e.g., ought self-states), which have been shown to affect emotional wellbeing (Higgins, 1987). Continuing optimism about the potential benefits of the motivation to self-digest (Higgins, 1996) is promoting the belief that the desire to discover information related to the self is beneficial for self-regulation. A relatively recent review (Silvia & Gendolla, 2001), however, argues that self-focused attention does not enable accurate self-knowledge. A possible cause of this is that the NAT may have an influence on self-regulatory functions of such self-knowledge motives. As Şimşek (2010) suggested, inner self-experiences are highly fluid and thus difficult to capture. It seems plausible, then, that any motivation to obtain self-knowledge is liable to be confounded by this desire to reach the seemingly unobtainable state of absolute truth, a desire that varies in intensity from individual to individual. Future research should test the hypothesis that there is a high probability that this harmful motive moderates the relationship of self-knowledge with self-regulation.

Also potentially important is the relation of the NAT with other perspectives on the structure of self, such as the divided self/self-concept differentiation (Bigler, Neimeyer, & Brown, 2001; Donahue, Robins, Roberts & John, 1993) and self-complexity (Linville, 1987). It is shown in this line of research that the divided or differentiated self has negative impacts on mental health, in contrast to self-complexity, which buffers against psychopathology. It is probable that NAT mediates the relation between self and mental health, in terms of both differentiation and complexity. That is, it is likely that individuals with a complex self would experience lower levels of negative affect, since they have lower levels of NAT. This argument is supported by Linville (1987), who suggested that those with higher levels of self-complexity evaluate the negative effects of events on the self at a more concrete level, implying a lesser need to obtain absolute/higher-level knowledge about the self. Such individuals are more likely to consider the event with regard to the relevant aspects of the self, rather than the "whole" or "abstract self." Such a view indicates lower levels of the NAT about self. Individuals with higher levels of self-concept differentiation, however, would be more prone to attempting to reach "the truth" since they suffer from the intolerance of uncertainty (Butzer & Kuiper, 2006).

The implications of the present research for the field of psychotherapy and counseling are in clear agreement with earlier research showing that self-focus has beneficial effects on mental health when associated with mindfulness (Huffziger & Kuehner, 2009; Watkins & Teasdale, 2004) and low-level or concrete representations of the experience (Rimes & Watkins, 2005; Takano & Tanno, 2009; Vassilopoulos & Watkins, 2009; Watkins & Teasdale, 2004). Consequently, different therapeutic approaches have been proposed based on these findings, such as

mindfulness-based cognitive therapy (Kuyken et al., 2008; Ma & Teasdale, 2004), or concreteness training (Watkins, Baeyens, & Read, 2009).

The present research indicates that, beyond these interventions, all therapeutic approaches should consider of the NAT because of its potentially damaging effects on mental health. The direct effect of this phenomenon on the therapeutic process emerges from its relation to self-concept clarity and insight. These two factors are highly important in every approach to mental health intervention, all of which aim to improve self-knowledge. Thus, individuals in every kind of therapy are encouraged to become self-absorbed and think about the self in different contexts. This kind of knowledge is especially critical for psychodynamic approaches, given that their basic aim is the enhancement of insight through self-reflection (Levy et al., 2006; Shedler, 2010). However, the present research shows that the motive to find absolute truth about the self can undermine the usefulness of the basic mode of self-absorption, namely self-reflection. As shown in Study 3, the elimination of NAT has the potential to allow SRF to make an enormous contribution to self-concept clarity and insight. This principle can also be found in mindfulness-based cognitive therapy, in which clients learn that "thoughts are not facts" (Kuyken et al., 2008). The basic motive of therapy, to find one's "true self," could ironically be detrimental to the helping process, because when trapped in this process, clients are not fully able to benefit from self-reflection or self-awareness interventions. On the contrary, their desire for absolute self-knowledge could hinder the search for, or creation of, alternative viewpoints to the problems they experience.

Thus, it is imperative for helpers to reduce the motivation to obtain absolute knowledge about the self. Consistent with this proposal, some researchers, even from the psychodynamic approach, emphasize the importance of specificity and redirecting therapists' attention from "larger topics," to the more concrete and immediate processes (Frank, 2002; Horowitz, 2002).

This research showed that the NAT, like SRU, was able to consistently improve the predictive ability of SRF with regard to mental health. However, it is subject to a number of limitations. First of all, the present research used only the RRQ as an operational definition of SRF and SRU, and was unable to take account of other operationalizations of SRF (e.g., Grant et al., 2002) and SRU (e.g., Luminet, 2004). Since this research focuses on a definition of a self-reflection that emphasizes a healthy type of self-focus (Trapnell & Campbell, 1999) it is especially important to determine whether the results of the present research could be generalized for other definitions. Thus, future research should consider other well-known measures of self-consciousness, such as Fenigstein et al.'s (1975) Self Consciousness Scale, to determine the applicability of the suppressor effects defined in the present research in the context of self-consciousness. A second limitation is the nonclinical nature of the data samples, which necessitates future investigations to confirm the importance of the suppressor effects in a clinical context. The final limitation was the self-report methodology used for data collection, which may not be the most appropriate methodology for examining very abstract variables such as those used in this study. The NAT variable, especially, is a very recent construct which is considered to be composed of high-level abstractions or concerns related to self. The present research therefore is limited in that it provides no experiential data that might illuminate the nature of this high-level thinking about self. Future research should also conduct controlled experiments to make the conclusions of the present research more robust and to illuminate the thought processes underlying the NAT in advance.

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APPENDIX

The Need for Absolute Truth (Nat) Scale

Please respond to each of the following items in terms of how true it is for you with respect to thinking about yourself. Use the scale 1–5, where 1 = not at all true, 3 = somewhat true, 5 = very true.

01. I always try to find “the facts” about me.
02. I think that the existing and real me are different.
03. I hope I will find myself as I really am one day.
04. I always think about “the facts” about me.
05. I try to understand what my experiences actually mean.