

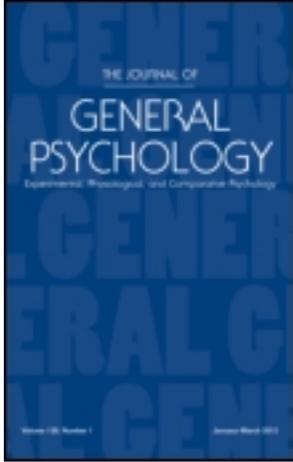
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The Relationship Between Language Use and Depression: Illuminating the Importance of Self-Reflection, Self-Rumination, and the Need for Absolute Truth

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ABSTRACT. The main aim of the present study was to provide additional knowledge about the mediatory processes through which language relates to depression. Although previous research gave clear evidence that language is closely related to depression, the research on intervening variables in the relationship has been limited. The present investigation tested a structural equation model in which self-concept clarity and self-consciousness mediated the relationship between personal perceptions of language and depression. Since “the need for absolute truth” construct has been shown to be important in providing greater consistency in estimates of the relationships among the variables, it has been added to the model as a control variable. The results supported the model and showed that personal perceptions of language predicted self-concept clarity, which in turn predicted the participants’ self-reflection and self-rumination. Self-reflection and self-rumination, in turn, predicted depression.

Keywords: depression, language, self-concept clarity, self-reflection

THE RELATIONSHIP BETWEEN LANGUAGE AND MENTAL HEALTH, e.g., depression, has been of interest to researchers since Freud (Kristeva, 1989). Recent research focuses on how difficulties in representing inner psychological experiences via language can contribute to psychological problems (Bucci, 1984; Pennebaker, 1993; Şimşek, 2010). The general consideration in this research arena has been how the incongruity between language and psychological experiences, or the inability to express inner experiences using language, would lead to depression. The processes through which language contributes to depression, however, have been neglected and need to be examined through empirical investigation.

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The aim of the present research is to add to the knowledge concerning the mediatory processes by focusing on the basic dimensions of self-absorption, namely self-rumination and self-reflection. Since earlier research has already shown that self-concept clarity (SCC) is an important mediator variable in this link (Şimşek & Kuzucu, 2012), the current study aimed to advance the discussion by stressing the mediatory functions of self-rumination and self-reflection, in addition to SCC. In the present research, the need for absolute truth was used as a control because recent research (Şimşek, in press) has shown that this variable is a suppressor variable, which prevents the beneficial effects of self-reflection on mental health.

Language-Depression Link

In her Multiple Code Theory (MCT), Bucci (1984) argues that the general inclination to connect language and psychological experiences makes it possible for individuals to make sense of experiences. Referential activity, the ability to represent inner psychological experiences with words, has been found to be associated with depression (Bucci & Freedman, 1981). Bucci and Freedman (1981) found that most clinically depressed patients have a disconnection between language and emotional experiences and concluded that the levels of referential activity covaried with the levels of depression, both within and between individuals. Pennebaker's Writing Paradigm (WP; Pennebaker, 1993), although without a direct reference to depression, asserts that the expression of painful or problematic experiences contributes to mental health, since language serves as a constructive agent by which inner experiences gain a structure and meaning (Pennebaker & Keough, 1999; Pennebaker & Chung, 2007). Research findings clearly confirmed the beneficial effects of the expression of inner psychological experiences, and showed its positive contribution to mental health, especially in the case of traumatic experiences (Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Pennebaker & Susman, 1988).

Consistent with these two paradigms, Şimşek (2010) developed a model of language use and a self-report measurement tool, in which the experience of language at a personal level was conceptualized by the gap between experience and language (GAP). According to this conceptualization, a gap between experience and language is a natural result, although the size of this gap varies among individuals. Şimşek defined two basic functions of language through which the gap could be acknowledged: the referential function, which refers to the intraindividual activity of connecting words with experiences, and the communicative function, which refers to the interindividual activity of expressing inner psychological experiences to others via language. Individuals differ in their capacity to express inner psychological experiences via language, both to themselves (epistemic function) and to others (communicative function). As the levels of these functions decrease, the GAP increases, making it more likely to contribute to mental illness. In addition

to other indicators of mental illness, such as anxiety, research has indeed showed that GAP was associated with depression (Şimşek, 2010, Şimşek & Kuzucu, 2012; Şimşek & Çerçi, in press).

It is worth mentioning here the parallels between GAP and two related concepts. The first is Bucci's (1984) referential activity, which, like GAP, refers to the concrete and vivid descriptions of inner psychological activity. However, in another sense, it is quite dissimilar, being focused on psychodynamic theory, in contrast to GAP's focus on the functions of language defined by Şimşek (2010). Another concept with which GAP has a close connection is alexithymia (Taylor, Ryan, & Bagby, 1985) because it has a sub-component of difficulty in describing feelings. The difference of GAP from alexithymia, however, is that the former takes all experiences into account, the latter only feelings. Moreover, GAP alone emphasizes the importance of language processes in understanding and expressing inner experiences. Indeed, Şimşek & Kuzucu (2012) found latent correlations of .48 and .62 between these constructs, indicating their relative independence.

Mediatory Processes

The research, thus, clearly showed that language has a connection to depression. Less clear, however, is the mediatory processes through which experiencing language contributes to depression. Only one study (Şimşek & Kuzucu, 2012), to my own knowledge, showed the mediatory role of SCC on the relationship between GAP and depression. The authors showed through two studies that the lower the level of GAP experienced by the individual, the greater the potential for a clearer self-concept, resulting in lower levels of depression.

It is plausible to assert that the processes from language to depression could not be accounted for solely by the mediatory role of SCC. Self-concept clarity, as a kind of self-knowledge, refers to the clear and consistent organization of multiple facets of the self by individuals (Campbell Trapnell, Heine, & Katz, 1996). A careful examination of the literature indicates private self-consciousness as a potential mediator in the relationship between SCC and depression. In other words, lower levels of SCC would contribute to greater private self-consciousness, which, in turn contributes to depression. The concept of private self-consciousness has been defined as a sub-dimension of general self-consciousness (Fenigstein, Scheier & Buss, 1975) and refers to one's inclination to reflect on, or be attentive to, private and covert self-aspects. Recent conceptualizations acknowledged private self-consciousness as consisting of two fundamental motivations, self-reflection, and self-rumination. The differences between these are explained later.

There is a strong case, both on theoretical and empirical grounds, for arguing that SCC is an important underlying motivation for trait self-consciousness. It is reasonable to expect that an individual lacking clear self-relevant information would be more likely to focus on aspects of the self. Davis and Franzoi (1978) suggested that an important underlying motivation behind self-consciousness is to

desire to better understand the self. Franzoi, Davis, and Markweise (1990), who tested such a motivational account of private self-consciousness, found, indeed, that individuals with higher levels of private self-consciousness placed a higher value on self-knowledge and acted according to that value. Similar findings by Sedikides and Skowronski (1995) showed that individuals with higher levels of self-consciousness considered self-reflection more important in self-knowledge. Consistent with these findings, Silvia, Eichstaedt, and Phillips (2005) provided empirical support for the idea that rumination and reflection are types of self-relevant motivation rather than self-focused attention. Teasdale and Green (2004) also provided support for the assumption that ruminative self-focus is more related to self-relevant motivation than attention to self.

Although research gives a clear picture of the relationship of self-consciousness with SCC, its association with mental health has been much more problematic. The research on self-consciousness has been devoted to understanding the difference between healthy and unhealthy forms of self-focus. Although traditionally considered to be an important factor in the promotion of mental health, self-consciousness, as defined by Fenigstein et al. (1978), was in fact found to be positively correlated with mental illness. This apparent contradiction was labeled the self-absorption paradox by Trappnell and Campbell (1989). In order to resolve this paradox, Trappnell and Campbell (1989) developed a new construct of private self-consciousness and a new scale, the Reflection and Rumination Questionnaire (RRQ) based on the personality dimensions of neuroticism and openness to experience. According to this conceptualization, self-reflection, motivated by openness to experience, is a healthy aspect of self-consciousness, based on or motivated by curiosity and epistemic interest. In contrast, self-rumination is unhealthy and refers to a neurotic type of self-attentiveness consisting of recurrent thinking or ruminations about the self. The paradox continues to be a problem for the self-reflection dimension, since it is still positively correlated with depression (Jones, Papadakis, Hogan & Strauman, 2009; Luyckx, Soenens, Berzonsky, Smits, & Vansteenkiste, 2007; Trappnell & Campbell, 1989), although the relationship is not as strong as that found in earlier research, based on the measures introduced by Fenigstein and colleagues (1978).

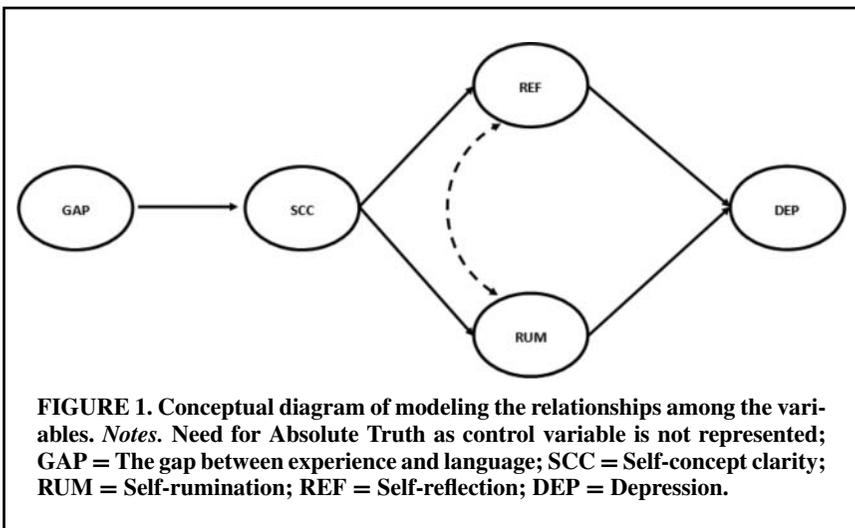
In order to resolve this paradox, Şimşek (in press) defined a new variable, the need for absolute truth (NAT) with a short self-report scale designed to illuminate the relationship of self-reflection with mental health. According to Şimşek, earlier research provides strong evidence that self-reflection becomes detrimental for mental health when it consists of a strong desire for an abstract type of self-knowledge and self-relevant information as a rigid and inflexible determinant of the self. Watkins and colleagues (Rimes & Watkins, 2005; Vassilopoulos & Watkins, 2009; Watkins & Teasdale, 2004), for example, showed that focusing on one's own personal experiences in a less analytical way is more beneficial for mental health compared to a more analytical focus on meaning and causes. Watkins (2008), in this regard, indicates that self-focus is detrimental for mental

health when it consists of high-level and abstract representations of the experience. Conway, Gianannopoulos, Crank and Mendelson (1993) clearly showed that those with chronic distress also had a tendency to engage in complex causal reasoning about the majority of their life experiences, and this inclination was correlated with their tendency to reflect on themselves.

Agreement with the items of SRF sub-factor of the RRQ, in this respect, does not mean simply possessing a pure epistemic curiosity, but also an abstract and high-level form of self-analysis aimed at finding an absolute knowledge about the self. NAT, thus, refers to an inclination to know oneself in this way—i.e. through an abstract, high-level form of self-analysis intended to achieve absolute self-knowledge. Şimşek, indeed, showed that controlling for the scores on the NAT statistically brought an expected change in the direction of relationship between self-reflection and other mental health variables (depression, anxiety, self-concept clarity, insight, and self-esteem).

As a consequence of an analysis of the literature mentioned above, it is proposed in this research that the relationship between GAP and depression is mediated by SCC, self-reflection, and self-rumination. Figure 1 depicts these relationships among the variables. As can be seen from Figure 1, a covariance between self-reflection and self-rumination is also added to the model, since the literature clearly indicates that self-reflectors are at the same time self-ruminators (Elliot & Coker, 2008; Takano & Tanno, 2009).

Although not shown in Figure 1, NAT was considered a control variable, and included into the model, since it was anticipated that controlling for the effects of



this variable would provide estimates consistent with the theoretical expectations explained above.

Method

The model proposed by the current investigation was tested using structural equation modeling using LISREL 8.80 (Jöreskog & Sörbom, 2001) with Maximum Likelihood estimation method. Since the structural equations in the model was estimated by taking NAT as a control variable, paths from NAT to all observed variables of the other latent constructs were added, while the covariance of latent NAT construct with other latent constructs was constrained to be zero (Johnson, Rosen & Djurdjevic, 2011; Williams & Anderson, 1994). Additionally, the variance of NAT was set to 1.00 in order to achieve identification. The measurement model was tested twice, with and without the control variable, to identify its effect on the relationships among the latent constructs used in the model. Finally, the structural model with control variable was estimated in order to evaluate whether the model fitted to the data well. An alternative structural equation model was also tested to rule out the possibility that the fit of the proposed model was simply the result of a statistical coincidence. The structural model was tested using a full latent variable structural equation modeling, and by switching to an all-Y model specification, as suggested by Williams and Anderson (1994). The significance of indirect effects in the model was evaluated by the estimates produced by LISREL.

Participants

The participants were 459 graduate and undergraduate students from three universities in Turkey. Additional data was gathered from elementary and secondary school teachers, and the residents of a number of nursing homes. The sample consisted of 296 women and 163 men, with a mean age of 37.

Procedure

A convenience sampling method was used in the present study. The voluntary nature of the participation was clearly stated prior to the distribution of the scales. The students were assessed in small group sessions, while the other participants were assessed individually. After an initial meeting to obtain consent, each participant was given an answer sheet. The instructions, emphasizing the importance of completing all items in the forms, were read aloud. Written informed consents were obtained from all the participants. The approximate administration time for both groups was 30 minutes.

Measures

The Gap Between Experience and Language

The personal sense of the GAP was measured by the Beliefs about the Functions of Language Scale (BAFL; Şimşek, 2010). The measure consisted of two factors, epistemic and communicative functions, with acceptable internal consistencies, $\alpha = .70$ and $\alpha = .83$, respectively. Epistemic function refers to the personal sense of confidence in language as a reliable tool for exploring and understanding inner psychological experiences. The five items in this factor include “I believe that the real meaning of my experiences is beyond language” and “I think there is a gap between my feelings and the corresponding words.” The communicative function taps personal perceptions of the adequacy of language as a means of sharing psychological experiences with others and includes seven items, such as “I do not feel people can fully understand the words I use to express myself” and “I feel words can reflect my feelings exactly to other people.” In the present study, the internal consistency of the scale was .88.

Reflection and Rumination

The Reflection and Rumination Questionnaire (RRQ, Trapnell & Campbell, 1999) was used to measure the self-reflection and self-rumination levels of the participants. The scale consists of 24 items, with 12 for each dimension. Ratings are indicated on a scale from 1 (disagree strongly) to 5 (agree strongly) for each item. The scale was adapted into Turkish using back-translation procedure. Internal consistency of the scale was found to be .87 in this study.

Need for Absolute Truth

The NAT Scale (Şimşek, in press) was used in order to measure the degree to which participants have a tendency to seek absolute self-knowledge. Through a series of three studies, Şimşek developed and validated the NAT Scale, finding an internal consistency of .75. He reported sufficient test-retest reliability ($r = .72$). In the third study, he also showed the suppressor effect of the NAT on self-reflection by using different mental health variables, such as self-concept clarity, self-esteem, depression, and anxiety. The NAT scale response format is a 5-point Likert scale, anchored by 1 = strongly disagree to 5 = strongly agree. Higher scores reflect a greater NAT. The scale consisted of five items (“I always try to find ‘the facts’ about me,” “I think that the existing and real me are different,” “I hope I will find myself as I really am one day,” “I always think about ‘the facts’ about me,” “I try to understand what my experiences actually mean”). Internal consistency was found to be $\alpha = .78$ in the present study.

Self-Concept Clarity

The Self-Concept Clarity Scale (SCCS) was developed by Campbell and colleagues (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 scale consists of 12 items such as "My beliefs about myself often conflict with one another," "I spend a lot of time wondering about what kind of person I really am," and "When I think about the kind of person I have been in the past, I'm not sure what I was really like." The response format of the SCCS is a 5-point Likert scale anchored by 1 = strongly disagree to 5 = strongly agree. Thus, higher scores indicate 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 to Turkish by Sümer and Güngör (1999). The Cronbach alpha reliability coefficient of the scale was found to be $\alpha = .89$ in the study. In this study, the Cronbach alpha coefficient was again .85.

Depression

Brief Symptom Inventory (BSI): Depression sub-scale of the BSI was used in order to measure individuals' depression symptoms. The BSI was developed by Derogatis (1992) as a shortened version of the SCL-90-R and 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 to 5 = Extremely Distressed. The 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 Alpha reliability coefficients have been found to be acceptable, .95 to .96, for the Turkish form. In this study, the Alpha coefficient for the depression sub-scale was found to be .85.

Results

Test of the Measurement Model

Since all latent variables in the model except for the GAP were one-dimensional, two parcels were created for each. The GAP latent construct was defined by summing scores of the epistemic and communicative function subscales. Means, standard deviations and correlations among the observed variables are represented in Table 1. All skewness and kurtosis values were less than 1, ranging from 0.03 to 0.92 for skewness and from 0.06 to 0.77 for kurtosis, indicating no problem in terms of normality assumption.

A test of the measurement model without NAT resulted in acceptable goodness of fit statistics: $\chi^2(25, N = 469) = 76.31, p < .05$; GFI = 0.97; CFI = 0.99; SRMR = 0.036; RMSEA = 0.066 (90 percent confidence interval for RMSEA = 0.050–0.083). All of the loadings of the measured variables on the latent variables were large and statistically significant (standardized values ranged from 0.71 to 0.92, $p < .001$). Correlations among the latent constructs are represented in Table 2.

TABLE 1. Means, Standard Deviations, and Intercorrelations of Observed Variables

Observed Variables	M	SD	EPIS	COMM	SCC1	SCC2	REF1	REF2	RUM1	RUM2	DEP1
1. EPIS	14.70	4.00	—								
2. COMM	19.23	6.21	.71**	—							
3. SCC1	13.22	4.61	.48**	.54**	—						
4. SCC2	12.41	4.50	.40**	.47**	.77**	—					
5. REF1	19.62	4.06	.15**	.12**	.10*	.02	—				
6. REF2	18.79	4.05	.28**	.23**	.21**	.09	.61**	—			
7. RUM1	17.78	4.59	.34**	.36**	.41**	.40**	.40**	.31**	—		
8. RUM2	18.11	4.65	.33**	.39**	.42**	.41**	.35**	.32**	.79**	—	
9. DEP1	14.80	4.23	.34**	.45**	.55**	.53**	.18**	.22**	.49**	.48**	—
10. DEP2	14.65	4.35	.42**	.48**	.53**	.51**	.21**	.25**	.59**	.58**	.77

Notes. $N = 459$; EPIS = Epistemic function of the BAFL Scale, COMM = Communicative function of the BAFL Scale, SCC1–SCC2 = Two parcels from the SCCS, REF1–REF2 = Two parcels from reflection subscale of the RRQ, RUM1–RUM2 = Two parcels from rumination subscale of the RRQ, DEP1–DEP2 = Two parcels from depression subscale of the BSI.

* $p < .05$, ** $p < .01$.

As can be seen from Table 2, most of the correlations among the constructs were moderate, except for the relationship of self-reflection to SCC and GAP.

The measurement model was tested once again, this time with the NAT construct as a control variable. The model produced acceptable fit to the data: $\chi^2(70, N = 469) = 309.90$, $p < .05$; GFI = 0.92; CFI = 0.97; SRMR = 0.070; RMSEA = 0.086 (90 percent confidence interval for RMSEA = 0.076–0.095). An

TABLE 2. Correlations of the Latent Constructs With (Above Diagonal) and Without (Below Diagonal) Control Variable

Variable	GAP	SRUM	SREF	SCC	DEP
GAP	—	.33**	-.12*	.57**	.47**
SRUM	.48**	—	.17**	-.40**	.60**
SREF	.25**	.49**	—	.25**	-.04
SCC	.67**	-.54**	-.14*	—	-.57**
DEP	.57**	.69**	.30**	-.60**	—

Notes. $N = 459$; GAP = The gap between experience and language, SRUM = Self-rumination, SREF = Self-reflection, SCC = Self-concept clarity, DEP = Depression.

* $p < .05$, ** $p < .01$.

inspection of the modification indices produced by LISREL, however, indicated that deletion of the second item of the NAT Scale would result in a much better model. Model trimming was achieved by deleting the item from the model, which resulted in a better fit to the data [$\chi^2(57, N = 469) = 171.42, p < .05$; GFI = 0.95; CFI = 0.98; SRMR = 0.047; RMSEA = 0.065 (90 percent confidence interval for RMSEA = 0.054–0.077)], which was supported by a chi-square difference test (138.48, 13; $p < .001$).

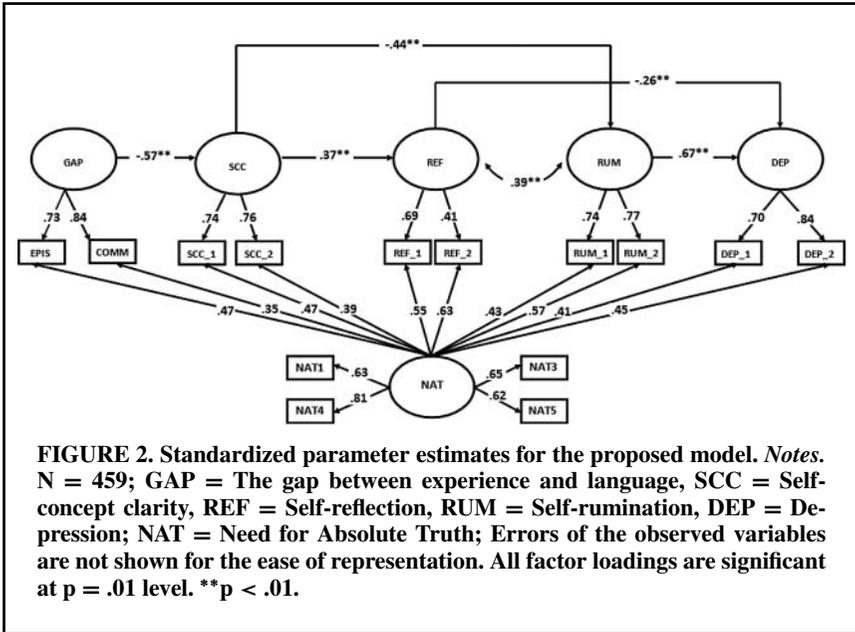
The loadings of the NAT construct to the observed variables of other constructs ranged from .32 to .56, with the largest values for the two parcels of self-reflection construct. These findings showed the impact of the NAT on the variables in the model proposed. Consequently, including NAT affected some parameters in the model. The majority of the loadings of the measured variables were similar to those obtained by the measurement model without NAT (standardized values ranged from .73 to .89), except for the second parcel of the self-reflection latent variable ($\beta = .35$).

The correlations among the constructs (Table 2), however, changed dramatically, especially for the correlations of self-reflection with other constructs. Inclusion of NAT into the model reduced the correlations among the constructs in general. More importantly, as expected, the direction of correlation between self-reflection and all other variables changed. First, the relationship between self-reflection and self-rumination changed from .49 to .17. Relationships between self-reflection and other variables also changed: with GAP, it fell from .25 to $-.12$, with SCC it rose from $-.14$ to .25. Finally, the relationship between self-reflection and depression changed from .30 to $-.04$. These results confirm the suppressor effect of the NAT on self-reflection.

Test of the Structural Model

A test of the structural model resulted in acceptable goodness of fit statistics: $\chi^2(61, N = 469) = 229.47, p < .05$; GFI = 0.93; CFI = 0.97; SRMR = 0.060; RMSEA = 0.077 (90 percent confidence interval for RMSEA = 0.066–0.088). In order to rule out the possibility that the fit of the model was simply a result of a statistical coincidence, an alternative model was tested, in which the SCC construct was replaced with those of self-reflection and self-rumination. This model showed a deterioration in goodness of fit statistics, even though the degrees of freedom of the models were the same: $\chi^2(61, N = 469) = 316.33, p < .05$; GFI = 0.91; CFI = 0.96; SRMR = 0.064; RMSEA = 0.095 (90% confidence interval for RMSEA = 0.084–0.11). According to these results, the proposed model accounted for the data much better than the alternative. Standardized estimates for the paths in the model are represented in Figure 2.

There are three groups of findings. Firstly, the results in Figure 2 show a relationship between GAP and SCC that is negative, with a relatively high effect size. The relationship of SCC with both self-reflection and self-rumination were



moderate, but in reverse directions, indicating that SCC contributed positively to self-reflection but negatively self-rumination. Self-reflection and depression were correlated negatively, and the effect size of this relationship was weak. The self-rumination and depression relationship was negative, with a large effect size.

Another finding concerns the LISREL estimates for the indirect effects (Table 3), indicating that SCC mediated the relationship of GAP with both self-reflection and self-rumination. The indirect effect of SCC on depression was also

TABLE 3. LISREL Estimates of the Indirect Effects

Indirect Effect	Estimate	SE
GAP → DEP	.22**	.04
GAP → REF	-.21**	.04
GAP → RUM	.25**	.04
SCC → DEP	.39**	.05

Notes. N = 459; GAP = The gap between experience and language, SRUM = Self-rumination, SREF = Self-reflection, SCC = Self-concept clarity, DEP = Depression.

** $p < .01$.

shown to be significant. The overall indirect effect of GAP on depression was significant, indicating the mediator roles of SCC, self-reflection, and self-rumination.

Finally, the results showed that 33% of the variance in SCC was accounted for by GAP. SCC, in turn, accounted for 19% of the variance in self-rumination and 14% of the variance in self-reflection. Self-reflection and self-rumination accounted for 44% of the variance in depression levels of participants.

Discussion

This study aimed to understand the processes through which language has an effect on depression. Although clear evidence has been found for the association between language use and depression (Bucci, 1981; Şimşek, 2010), little research exists on the intervening variables in this relationship. In addition to the mediator role of SCC, which is supported by the findings of Şimşek and Kuzucu (2012), in the present study self-reflection and self-rumination were also considered to be crucial mediators in the link between language and depression.

The results provided support for the model, according to which GAP was negatively associated with SCC, and SCC was positively with self-reflection and negatively with self-rumination. Self-reflection, in turn, contributed negatively to depression, while rumination contributed positively. The indirect effects in the model were also confirmed by the estimates of LISREL. This study, thus, is the first to give such a detailed explanation of the ways through which the GAP experienced by individuals is associated with depression.

Although Şimşek and Kuzucu (2012) have already shown that SCC is an important mediator in the relationship between GAP and depression, this research focused on two additional important mediators, self-reflection, and self-rumination. Of the relation of these two factors to mental health, the latter was less problematic because the positive association of self-rumination and depression was clearly established in previous research (Smith & Alloy, 2009), a link that is supported by the high level of correlation in the present study. In contrast, the link between self-reflection and mental health is much more controversial. Although Trapnell and Campbell (1999) argued that the self-reflection dimension refers to a positive conceptualization of self-consciousness, research consistently found that it had still negatively correlated with mental health (Jones et al., 2009; Luyckx et al., 2007; Trapnell & Campbell, 1989). This issue was considerably clarified, however, when Şimşek (in press) was able to show a positive correlation between mental health and self-reflection, by the statistical control of NAT, a desire to find absolute knowledge about the self as a kind of high-level abstraction. The same results emerged also in the present investigation.

Thus, SCC had a positive effect on reflecting on the self when individuals had no such inclination to seek absolute knowledge of self. Self-reflection, in turn, contributes negatively to depression since it is more likely to be based on

epistemic curiosity, as Trapnell and Campbell (1999) expected. Given the complexity of these relationships, this study, consequently, is the first to show that the relationship of self-reflection with other variables could be more accurately analyzed when the levels of NAT are taken into consideration. The results of the measurement model combined with the effects of NAT construct showed that the direction of relationship of self-reflection with SCC and depression was reversed, becoming negatively correlated with depression, and positively with SCC. Although the relationship between self-reflection and depression was insignificant in the measurement model, it improved in the structural model, due to the effect of the presence of self-rumination. Given that self-reflectors are also self-ruminators to an extent (Elliot & Coker, 2008; Takano & Tanno, 2009), the covariation between self-reflection and self-rumination in the structural model removed the irrelevant variance in self-reflection, and improved its correlation with depression. This result is consistent with the findings of Şimşek (in press), which indicate that both NAT and self-rumination should be taken into consideration when focusing on the association of self-reflection with negative mental health indicators. Overall, these results support the findings of previous studies, which indicate that reflecting on the self is harmful to mental health when it consists of high-level abstractions about the self (Conway et al., 1993; Watkins, 2008).

It should be noted here that, compared to the proposed model, an alternative structural model was shown to be worse in accounting for the data. According to this model, SCC was replaced with self-reflection and self-rumination, both of which tend to be treated as types of self-focused attention as indicated by Silvia and colleagues (2005). When self-reflection and self-rumination are so considered, the alternative model may be thought of as representing a strong alternative. Recent findings, however, emphasize that, rather than representing an attention to self, self-reflection and self-rumination are in fact types of self-relevant motivation (Silvia et al., 2005), a view which is reinforced by findings in this study.

The results provided here indicate the importance of the NAT in illuminating the relationship between self-focus and depression. These results emphasize the great importance of the role of this innovative construct in clarifying the role of self-reflection in mental health. Future research, thus, should go beyond correlational findings and begin to search for experimental evidence that is able to confirm its contribution to the understanding of the conditions under which self-reflection is beneficial to mental health. The importance of this issue can be seen in the fact that every mental health intervention takes as its starting point an analysis of the self through systematic observation. If the levels of NAT are shown to have such importance in illuminating the paradox through experimental design, the implications of such a finding for practice would be crucial. While it is true that previous research has already shown that certain types of abstract and analytic thought can make self-reflection harmful for mental health (Conway et al., 1993; Watkins, 2008), the NAT presents an important and innovative approach to this issue.

The most important limitation of the present research is its correlational nature. Although sophisticated analysis techniques were used, the causal directions among the constructs are only theoretical at present, and should be subjected to further stringent testing, either in an experimental design, or by using longitudinal data. Moreover, since the GAP could be affected by verbal ability, future research could control this variable statistically when searching for the relationships among the study variables. Future research should take cultural differences into account in examining the relationships among the variables used in the present model. Finally, since the present investigation was conducted using data from college students, generalizability to other population is limited.

AUTHOR NOTE

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