International Journal of Psychology

The gap that makes us desperate: Paths from language to mental health

Ömer Faruk Şimşek [a] & Yasar Kuzucu [b]

[a] Department of Psychology, Izmir University of Economics, Izmir, Turkey

[b] Department of Educational Sciences, Adnan Menderes University, Aydin, Turkey
Version of record first published: 02 Mar 2012.

PLEASE SCROLL DOWN FOR ARTICLE

Ψ **Psychology Press**
Taylor & Francis Group

The gap that makes us desperate: Paths from language to mental health

Ömer Faruk Şimşek[1] and Yasar Kuzucu[2]

[1]Department of Psychology, Izmir University of Economics, Izmir, Turkey
[2]Department of Educational Sciences, Adnan Menderes University, Aydin, Turkey

A lthough past research provided some clues about the relation of language use with mental health, the mediatory functions of personality variables in this relationship have been ignored. This research examined the mediatory role of self-concept clarity in the relationship between language use perceived by individuals and mental health indicators including anxiety, depression, and alexithymia. Based on the theoretical framework suggested by Şimşek (2010), two studies sought to test two alternative structural equation models in data from university students in the first study ($n = 250$) and data from other groups in the second study ($n = 331$). The first model assumed that the relationship of language use with anxiety, depression, and alexithymia was mediated by self-concept clarity. The second model tested the mediatory role of both anxiety and self-concept clarity in this relationship. The results of the first study showed that the second model fitted better to the data than the first. Consistent with the first study, the results of the second study confirmed that the second model produced better goodness of fit statistics than the first model.

Q uoique la recherche antérieure ait fourni certains indices à propos de la relation entre l'usage de la langue et la santé mentale, les fonctions médiatrices des variables de la personnalité dans cette relation ont été ignorées. Cette recherche examinait le rôle médiateur de la clarté du concept de soi dans la relation entre l'usage de la langue perçu par les individus et les indicateurs de santé mentale, incluant l'anxiété, la dépression et l'alexithymie. Basé sur le cadre théorique suggéré par Şimşek (2010), deux études visaient à accroître les connaissances dans ce domaine en testant deux modèles par équations structurelles alternatifs à partir de données obtenues auprès d'étudiants universitaires dans la première étude ($n = 250$) et auprès de divers groupes dans la deuxième étude ($n = 331$). Le premier modèle a révélé que la clarté du concept de soi jouait un rôle médiateur sur la relation entre l'usage de la langue et l'anxiété, la dépression et l'alexithymie. Le second modèle testait le rôle médiateur à la fois de l'anxiété et de la clarté du concept de soi sur cette relation. Les résultats de la première étude indiquaient que le second modèle était mieux ajusté aux données que le premier. En accord avec la première étude, les résultats de la deuxième étude ont confirmé que le second modèle produisait de meilleurs niveaux d'ajustement statistiques comparativement au premier modèle.

N o obstante en el pasado distintas investigaciones proporcionaran algunas pistas acerca de la relación entre el uso del lenguaje y la salud mental, las funciones de mediación de las variables de personalidad han sido ignoradas en esta relación. Esta investigación examinó el rol de la claridad del autoconcepto como mediador en la relación entre el uso del lenguaje percibido por los individuos e indicadores de salud mental como ansiedad, depresión y alexitimia. Basándonos en al marco teórico propuesto por Şimşek (2010), estos dos estudios buscaron ampliar los hallazgos poniendo a prueba dos modelos alternativos de ecuaciones estructurales usando datos de estudiantes universitarios en el primer estudio ($n = 250$) y datos de otros grupos en el segundo ($n = 331$). En el primer modelo se asumió que la relación entre el uso del lenguaje y la ansiedad, la depresión y la alexitimia estaba mediado por la claridad del autoconcepto. En el segundo modelo se puso a prueba el papel mediador de la ansiedad y la claridad del autoconcepto en esta relación. Los resultados del primer estudio mostraron que el

segundo modelo se ajustaba mejor a los datos que el primero. Consistentemente con el primer estudio, los resultados del segundo estudio confirmaron que el segundo modelo presentaba mejores parámetros de bondad de ajuste en comparación al primer modelo.

The connection between language and mental health has attracted the attention of many psychologists and mental health practitioners. Recent approaches in psychology suggest that language use is a critical phenomenon in mental illness. The constructionist paradigm argues that language is the base for all psychological phenomena since it makes reflexive thinking possible and, thus, renders bodily experiences comprehensible to individuals (Guidano, 2002; Neimeyer, 2002).

Consistent with these arguments, research findings indicate that language use is closely related to mental health. These findings mostly come from *writing paradigm* (WP; Pennebaker, 1993) and *multiple code theory* (MCT; Bucci, 1984). Pennebaker and colleagues (Pennebaker, 1993; Pennebaker & Graybeal, 2001; Pennebaker & King, 1999; Pennebaker, Mehl, & Neiderhoffer, 2003; Pennebaker & Seagal, 1999) consistently found that translating problematic experiences into language directly and positively contributes to mental and physical health. According to Pennebaker et al. (2003), moreover, language use can be used as an efficient diagnostic marker. Similarly, research on MCT (Bucci, 1982, 1984; Fertuck, Bucci, Blatt, & Ford, 2004) showed that linguistic expression of painful experiences is negatively related with mental health indicators such as depression and anxiety.

Research findings also indicate that language use could be crucial in alexithymia, defined as difficulty in identifying feelings and distinguishing between feelings and the bodily sensations of emotional arousal, difficulty describing feelings to other people because of constricted imaginal processes, as evidenced by a scarcity of fantasies, and a stimulus-bound, externally oriented cognitive style (Taylor, 2004). Taylor argued that one possible deficit underlying alexithymia is a dissociation of subsymbolic representations of experiences and symbolic forms, such as images and words. The research by Lane et al. (1996) provided preliminary evidence that alexithymia is positively associated with nonverbal as well as verbal recognition of emotion stimuli. More recent research (Lemche, Klann-Delius, Koch, & Joraschky, 2004) implies that alexithymia might be a consequence of deficits in the development of inner state language in the period of childhood.

Although the association between language use and mental health has been illuminated by the research mentioned above, the findings are mainly limited to mean differences among individuals regarding the use of some linguistic particles such as pronouns or prepositions. In addition to this limitation, the mediatory variables in the relationship between language and mental health are not clear. Therefore, as Pennebaker et al. (2003) indicated, there is a need for a more theory-based approach in the explanation of the link between psychopathology and language.

Accordingly, the aim of this research is to illuminate the association between language use and mental health, e.g., depression, anxiety, and alexithymia, with the mediatory role of self-knowledge. In two studies, the relationship of language use with the mental health indicators was investigated and a model proposing that self-knowledge, operationalized by self-concept clarity (SCC), mediates the relationship was tested.

Şimşek (2010) introduced a simple and useful theoretical formulation for the link between language use and mental health. According to the author, the connection between language and personal/phenomenal experience is a critical issue in the construction of self. Since phenomenal experiences are not always self-evident to the individual, there is a gap between experience and language (GBEL), which varies among individuals. The functions of language, e.g., epistemic and communicative, are considered to contribute to the lessening of GBEL. The epistemic function is related to individual perception of whether language is a reliable tool for obtaining knowledge of inner psychological experiences. The communicative function is the tendency to consider language as a reliable means for communicating those inner experiences. "The self, therefore, may be operationalized as the symbolic organization of phenomenal experiences by language in a private and relatively stable framework" (Şimşek, 2010, p. 68). Thus, the functions of language play an important role in the clarity of self-concept since these provide individuals with the ability to label and organize experience into a coherent self-system. Self-concept clarity, as a kind of self-knowledge, refers to the consistent and certain organization of multiple facets of the self by individuals (Campbell, Trapnell, Heine, & Katz,

1996). It is the main proposition of the constructivist approach that the contribution of language use to mental health comes from its effects on the construction of self (Neimeyer & Mahoney, 2002). Indeed, the literature mentioned below supports the idea that language use contributes to the clarity of self-concept as a kind of self-knowledge which, in turn, improves the level of mental health. Accordingly, the research findings indicating the contribution of language use to self-knowledge as well as those concerning the effects of self-knowledge on mental health will be presented.

Vaneechoutte (2000) argues that self-knowledge is only possible through language ability by which individuals can distance themselves from and observe phenomenal experiences. Consistent with this claim, it is argued that intrapersonal communication, which is a fully language-mediated experience, is a base for all kinds of self-knowledge (Cunningham, 1995). Indeed, by the expression of inner psychological states using language individuals have a greater understanding of themselves (Pennebaker & Graybeal, 2001). Research (Howe, 1991; Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001), moreover, indicates that mental state language (internal state language) contributes to self-knowledge and self-understanding starting from early childhood.

Being certain about the knowledge of self, on the other hand, is known to have a close connection to mental health (Butzer & Kuiper, 2006; Campbell, Assanand, & Di Paula, 2003; Diehl, Hastings, & Stanton, 2001; Smith, Wethington, & Zhann, 1996). The results from these studies indicate that the clarity of self-concept is negatively and strongly correlated with levels of anxiety and depression. As Epstein (1973) argued, even a negative self-concept is healthier and less stressful than a blurred self-concept, since self-knowledge serves for organizing experience and guiding behavior. If self-knowledge has such an importance for organizing behavior, it is not unreasonable to speculate that SCC is theoretically linked also to alexithymia. Indeed, recent research by Moriguchi et al. (2006, 2009) has shown that alexithymia is negatively related to self-knowledge. The results from these studies showed that a lack of self-knowledge contributes to alexithymic symptoms.

The abovementioned literature implies competing models that explain relationships among the variables. The findings could be taken to suggest a model indicating that the relationship of the GBEL with mental health (depression, anxiety, and alexithymia) is mediated by SCC, as depicted in Figure 1.
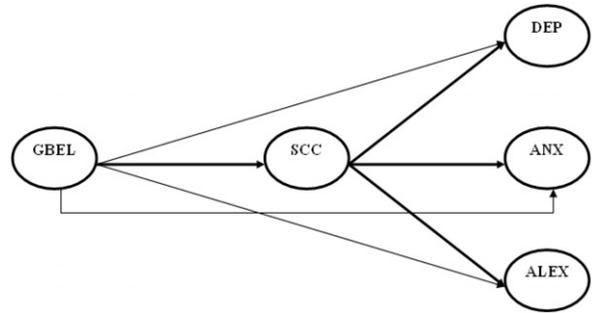
Figure 1. The first proposed model. GBEL = the gap between experience and language; SCC = self-concept clarity; DEP = depression; ANX = anxiety; ALEX = alexithymia.

A closer examination of the literature, however, indicates anxiety as a possible mediator in the relationship of SCC with depression and alexithymia. It is indicated in the literature that anxiety is a risk factor for both depression and alexithymia. The relevance of anxiety as a risk factor to depression is well recognized (Parker et al., 1999), and anxiety predicted later depressive symptoms, regardless of age and gender (Chaplin, Gillham, & Seligman, 2009; Parker, Wilhelm, & Asghari, 1997; Yarcheski & Mahon, 2000). Anxious children withdraw from others and are potential targets of peer rejection, which leads to loneliness, sadness, lowered self-image, and (eventually) depression (Gazelle & Ladd, 2003). Anxiety expressed early in the form of social or behavioral inhibition and social avoidance appears to be a key conduit whereby anxiety may act as a risk factor to early onset major depression (Parker et al., 1999). A similar link from anxiety to alexithymia is supported by research. Hendryx, Haviland and Shaw (1991), for example, showed that alexithymia and anxiety are positively correlated, and argued that alexithymia could be a result of generalized anxiety disorder. Similarly, Berthoz et al. (1999) found a positive correlation between these variables and concluded that trait anxiety influences alexithymia directly; that is, perceived state of stress is related to inability to identify feelings and to distinguish between feelings and bodily sensations. It is also shown that the greatest similarities between alexithymics and high-anxious individuals relate to the difficulty in distinguishing feelings from bodily sensations and difficulty in verbally describing feelings (Newton & Contrada, 1994). Consequently, a second conceptual model supported by this line of literature is represented in Figure 2.

These competing models were tested in a group of university students in Study 1 and in a different
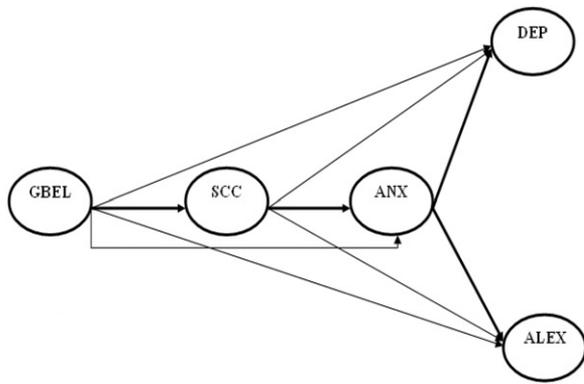
Figure 2. The second proposed model. GBEL = the gap between experience and language; SCC = self-concept clarity; DEP = depression; ANX = anxiety; ALEX = alexithymia.

sample composed of different age groups in Study 2. It was hypothesized that the second proposed model would be supported more strongly than the first in both studies. It should be noted that we adopted the .05 level of significance in both studies.

STUDY 1

Method

Participants

Students from three universities in Turkey (130 female, 120 male), with ages ranging from 17 to 21, and mean of 18.1, formed the sample of this study. The data were collected from the faculties (of Communication, Politics, Education, and Law) of the universities. All scales were administered in one session.

Measures

The gap between experience and language

The personal sense of the GBEL was measured by the Beliefs about 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 to explore and understand inner psychological experiences. This factor includes five items, such as "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." Communicative function taps personal perceptions to evaluate 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, internal consistency estimates for the epistemic and communicative functions were $\alpha = .80$ and $\alpha = .86$, respectively.

Alexithymia

The Toronto Alexithymia Scale (TAS), developed by Taylor, Ryan, and Bagby (1985), was used. TAS is a 26-item self-report measure of alexithymia with good internal consistency and test-retest reliability, and a factor structure congruent with the alexithymia construct. It has four factors: (1) difficulty in identifying and distinguishing between feelings and bodily sensations, (2) difficulty in describing feelings, (3) reduced daydreaming, and (4) externally oriented thinking. Total score ranges from 26 to 130 points. Internal consistency is .77 and test-retest reliability is .75 in the original study (Taylor et al., 1985). The internal consistency is 0.65 and test-retest reliability is $r = 0.71$ in a Turkish reliability and validity study (Dereboy, 1990). In this study the Cronbach's alpha coefficient was 0.77.

Self-concept clarity

The Self-Concept Clarity Scale (SCCS) was used to measure SCC and consists of 12 items. The SCCS is one-dimensional and 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. 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's alpha reliability coefficient of the scale was found to be $\alpha = .89$ in the study. In this study the Cronbach's alpha coefficient was .85.

Depression

The depression subscale of the Brief Symptom Inventory (BSI) was used to measure depression

levels of the participants. It consists of 12 items rated on a five-point Likert-type scale anchored by $1 =$ not at all and $5 =$ extremely. The scale was developed by Derogatis (1992) as a shortened version of the SCL-90-R and was adapted to Turkish by Şahin and Durak (1994). The Cronbach's alpha reliability coefficients were found to be acceptable for the Turkish form (.95 to .96). The Cronbach's alpha internal consistency coefficient for the present data was .83.

Anxiety

Anxiety was measured by the Beck Anxiety Inventory (BAI), a self-report measure used for measuring the severity of an individual's anxiety. The BAI consists of 21 questions about how the subject has been feeling in the past week, expressed as common symptoms of anxiety (such as numbness, hot and cold sweats, or feelings of dread). Each item is rated on a four-point Likert scale ranging from $0 =$ not at all to $3 =$ severely. The total score ranges from 0 to 63. The BAI has been shown to be a reliable and valid measure of anxiety in a variety of studies with both clinical samples (coefficient alpha $= .92$) and non-clinical samples (coefficient alpha $= .91$) (Beck, Epstein, Brown, & Steer, 1988; Borden, Peterson, & Jackson, 1991). The internal consistency was .93 and test–retest reliability was $r = 0.57$ in a Turkish reliability and validity study (Ulusoy, Sahin, & Erkmen, 1996). The Cronbach's alpha internal consistency coefficient for the present study was .86.

Results

Descriptive statistics

Means, standard deviations, and zero-order correlations for the 12 measured variables are given in Table 1. All skewness and kurtosis values were less than 1, ranging from 0.11 to 0.73 for skewness and from 0.02 to 0.81 for kurtosis, indicating that there is no problem in terms of normality assumption.

Test of the measurement model

The measurement model specified that the posited relations of the observed variables to their underlying constructs were allowed to intercorrelate freely. Five latent variables were used in the structural equation model testing: *GBEL* (the gap between language and experience), *SCC* (measured by the SCCS), *anxiety*, *depression*, and

alexithymia. All latent variables were defined using the parcels by averaging the items together, except for the GBEL construct, which was defined by two original factors of communicative and epistemic functions.

An initial test of the measurement model resulted in a good fit to the data, $\chi^2(44, N = 250) = 92.45$, $p < .05$; GFI $= 0.94$; CFI $= 0.97$; SRMR $= 0.043$; RMSEA $= 0.066$ (90% confidence interval for RMSEA $= 0.047$–0.085). All of the loadings of the measured variables on the latent variables were large and statistically significant (standardized values ranged from 0.69 to 0.98, $p < .001$, see Table 2).

Test of the structural model

First, the model shown in Figure 1 was tested against the model in Figure 2. Then the nested models strategy suggested by Anderson and Gerbing (1988) was used to test the mediation hypotheses in the model defined as the best fitting to the data. In other words, tests of mediation were examined by comparing differences between the partially and fully mediated models.

Test of the partial mediation model in Figure 1 (Model 1) resulted in a relatively good fit to the data as indicated by the following goodness of fit statistics: $\chi^2(47, N = 250) = 176.17$; GFI $= .89$; CFI $= .92$; SRMR $= 0.063$; RMSEA $= 0.11$ (90% confidence interval for RMSEA $= 0.089$–0.12). The AIC and ECVI statistics were found to be 238.17 and 0.96, respectively.

Test of the second model in Figure 2 produced better goodness of fit statistics: $\chi^2(45, N = 250) = 95.42$; GFI $= .94$; CFI $= .97$; SRMR $= 0.044$; RMSEA $= 0.067$ (90% confidence interval for RMSEA $= 0.048$–0.086). The AIC and ECVI statistics were found to be 161.42 and 0.65, respectively. It was clear from the AIC and ECVI statistics that the second model was better than the first, a finding that was also supported by the chi-square difference test (80.75, 2; $p < .001$).

Since the basic hypothesis of this model was the mediational role of self-concept clarity and anxiety, it was tested against the models in which direct paths from GBEL to depression and alexithymia were respectively omitted. Deleting the path from GBEL to alexithymia resulted in an increment in the chi-square value, $\chi^2(46, N = 250) = 95.66$. The chi-square difference test (0.23, 1; $p > .05$), however, showed no difference between the models, indicating that the path from GBEL to alexithymia is not necessary for a better fit to the data. The same results were obtained when the path from GBEL to depression was omitted from the model.

TABLE 1
Means and standard deviations of and correlations among 12 observed variables in Study 1

Variable	M	SD	SCC1	SCC2	GBEL1	GBEL2	DEP1	DEP2	ANX1	ANX2	ANX3	ALEX1	ALEX2	ALEX3
1. SCC1	14.20	4.73	1											
2. SCC2	13.47	4.58	.79*	1										
3. GBEL1	15.36	4.00	.41*	.33*	1									
4. GBEL2	20.12	6.08	.48*	.41*	.69*	1								
5. DEP1	15.37	4.06	.50*	.50*	.30*	.39*	1							
6. DEP2	15.47	4.40	.50*	.50*	.34*	.45*	.74*	1						
7. ANX1	19.52	4.30	.39*	.48*	.27*	.41*	.58*	.62*	1					
8. ANX2	19.77	4.27	.39*	.37*	.31*	.45*	.59*	.60*	.73*	1				
9. ANX3	15.75	3.90	.35*	.42*	.24*	.40*	.60*	.58*	.74*	.69*	1			
10. ALEX1	25.26	4.29	.37*	.40*	.15*	.35*	.29*	.33*	.44*	.35*	.40*	1		
11. ALEX2	23.94	4.40	.43*	.46*	.31*	.43*	.39*	.37*	.45*	.44*	.43*	.56*	1	
12. ALEX3	20.48	3.57	.35*	.42*	.13*	.29*	.30*	.32*	.37*	.34*	.34*	.67*	.51*	1

$N = 250$; SCC = self-concept clarity (higher scores indicate higher levels of clarity of self-concept); GBEL = the gap between experience and language (higher scores indicate higher levels of confidence in language); ANX = scores from Beck Anxiety Scale (higher scores indicate higher levels of anxiety); DEP = Depression subscale of the Brief Symptom Inventory (higher scores indicate higher levels of depression); ALEX = scores from Toronto Alexithymia Scale.
*$p < .05$.

TABLE 2
Factor loadings, standard errors, and *t*-values for the measurement model in Studies 1 and 2

Measure and variable	Unstandardized factor loading		SE		T		Standardized factor loading	
	Study 1	Study2	Study 1	Study 2	Study 1	Study 2	Study 1	Study 2
SCC								
Scc1	4.16	3.78	.26	.20	16.02	18.97	.88	.89
Scc2	4.03	3.22	1.02	.20	16.02	16.12	.88	.79
GBEL								
Epis	2.75	3.15	.26	.19	10.71	16.30	.69	.81
Comm	5.95	5.57	.40	.30	15.02	18.56	.98	.89
DEP								
Dep1	3.46	3.95	.22	.19	15.66	20.57	.85	.91
Dep2	3.87	3.62	.24	.18	16.43	19.65	.88	.88
ANX								
Anx1	3.74	4.06	.22	.21	16.68	19.32	.87	.86
Anx2	3.57	4.15	.23	.20	15.76	20.42	.84	.89
Anx3	3.25	3.41	.21	.18	15.57	18.67	.83	.85
ALEX								
Alex1	3.51	3.77	.24	.23	14.37	16.40	.82	.81
Alex2	3.20	3.08	.26	.24	12.27	13.01	.72	.68
Alex3	2.79	3.09	.21	.19	13.60	16.54	.78	.81

$N = 250$ for Study 1 and 331 for Study 2; all *t*-values are significant at the .05 level; Scc1, Scc2 = two parcels from the Self-Concept Clarity Scale; GBEL1, GBEL2 = two parcels from the Beliefs about the Functions of Language Scale; Epis = epistemic function of the BAFL Scale; Comm = communicative function of the BAFL Scale; Anx1, Anx2, Anx3 = three parcels from the Beck Anxiety Scale; Dep1, Dep2 = two parcels from depression subscale of the Brief Symptom Inventory; Alex1, Alex2, Alex3 = three parcels from Toronto Alexithymia Scale.

This model resulted in an increment in the chi-square value, $\chi^2(46, N = 250) = 95.52$. Again, the chi-square difference test (0.093, 1; $p > .05$) showed that the path adds nothing and thus could be deleted from the model.

As a result of this procedure, the model in which the direct paths from GBEL to depression and alexithymia were omitted produced an acceptable fit to the data: $\chi^2(47, N = 250) = 95.68$; GFI = .94; CFI = .97; SRMR = 0.045; RMSEA = 0.064 (90% confidence interval for RMSEA = 0.046–0.083). It is worth mentioning that 69% of the variance in depression and 46% of that in alexithymia were explained by anxiety and SCC; 38% of the
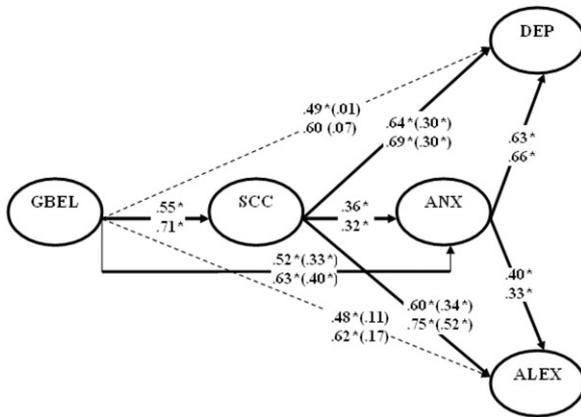
Figure 3. Standardized parameter estimates of the final structural model in Study 1 and Study 2. The upper numbers are the estimates of Study 1 while the bottom ones those of Study2. The numbers in parentheses refer to the coefficients for the direct paths when the mediator is included in the model; GBEL = the gap between experience and language; SCC = self-concept clarity; DEP = depression; ANX = anxiety; ALEX = alexithymia. *p < .05.

variance in anxiety was explained by GBEL and SCC; and 30% in SCC was explained by GBEL. Standardized path coefficients of the final model are shown in Figure 3.

It is clear from the results that the relationship of GBEL to depression and alexithymia is fully mediated by SCC and anxiety. Thus, Study 1 showed that the effect of language use on mental health was mediated by the levels of SCC in university students. Moreover, the effect of SCC on depression and alexithymia was mediated by anxiety. Although these results confirm that the gap between experience and language has detrimental effects on mental health, and that these effects are mediated by self-knowledge, a more robust test of the model requires generalizability to groups other than university students. Consequently, we expected that the results of Study 1 would be replicated in a data collected from different groups in Study 2.

STUDY 2

Method

Participants and measures

A group of 331 participants (143 female, 188 male) answered the questionnaires used in Study 1. The sample consisted of undergraduate and graduate students, employees, administrative and academic staff of two private universities. The age of the participants ranged between 18 and 67, with

a mean age of 33. Internal consistencies were .88 for the BAFL Scale, .78 for the TAS, .85 for SCC, BAI and depression subscale of the BSI.

Results and discussion

Descriptive statistics

Means, standard deviations, and zero-order correlations for the 12 measured variables are shown in Table 3. All skewness and kurtosis values were less than 1, ranging from 0.041 to 0.94 for skewness and from 0.022 to 0.86 for kurtosis. These results indicate that all variables are normally distributed in the sample.

Test of the measurement model

A test of the measurement model consisting of the same parcels used in Study 1 produced acceptable goodness of fit statistics: $\chi^2(44, N = 331) = 114.48$, $p < .05$; GFI = 0.95; CFI = 0.97; SRMR = 0.046; RMSEA = 0.070 (90% confidence interval for RMSEA = 0.054–0.080). All the loadings of the measured variables on the latent variables were again large and statistically significant (standardized values ranged from 0.68 to 0.91, $p < .001$; see Table 2).

Test of the structural model

A test of the second model again produced better goodness of fit statistics against the first model, which was supported by both a chi-square difference test (97.24, 2; $p < .001$) and AIC and ECVI statistics. AIC and ECVI statistics for the first and the second proposed models were 257.78 and 0.78, and 164.54 and 0.50, respectively.

Test of the mediational hypotheses again showed that the paths from GBEL to anxiety and alexithymia add nothing to the model's fit to the data, which indicated that the partial mediational model was not better, $\chi^2(45, N = 331) = 98.54$, $p < .05$; GFI = 0.95; CFI = 0.98; SRMR = 0.037; RMSEA = 0.060 (90% confidence interval for RMSEA = 0.044–0.076), than the full mediational model, $\chi^2(47, N = 331) = 100.82$, $p < .05$; GFI = 0.95; CFI = 0.98; SRMR = 0.040; RMSEA = 0.059 (90% confidence interval for RMSEA = 0.043–0.075). Standardized path coefficients of the model are presented in Figure 3.

These results indicate that the model tested in Study 1 is not only valid for university students but could be generalized to other groups. This is an expected result given that language is the main tool for self-knowledge and psychological experiences

TABLE 3
Means and standard deviations of and correlations among 12 observed variables in Study 2

Variable	M	SD	CLR1	CLR2	GBEL1	GBEL2	DEP1	DEP2	ANX1	ANX2	ANX3	ALEX1	ALEX2	ALEX3
1. SCC1	13.54	4.923	1											
2. SCC2	12.71	4.70	.78*	1										
3. GBEL1	14.91	4.04	.51*	.43*	1									
4. GBEL2	19.48	6.46	.57*	.49*	.71*	1								
5. DEP1	14.94	4.29	.58*	.56*	.43*	.48*	1							
6. DEP2	14.79	4.43	.56*	.55*	.44*	.50*	.78*	1						
7. ANX1	18.77	4.47	.47*	.47*	.41*	.46*	.66*	.67*	1					
8. ANX2	19.37	4.49	.46*	.41*	.45*	.52*	.65*	.66*	.74*	1				
9. ANX3	15.33	4.09	.45*	.47*	.38*	.47*	.63*	.60*	.73*	.72*	1			
10. ALEX1	24.05	4.94	.51*	.48*	.32*	.48*	.43*	.45*	.47*	.44*	.44*	1		
11. ALEX2	23.34	4.70	.54*	.52*	.47*	.53*	.48*	.48*	.49*	.49*	.46*	.59*	1	
12. ALEX3	20.08	3.90	.50*	.51*	.30*	.42*	.43*	.40*	.38*	.38*	.42*	.71*	.52*	1

$N = 331$ SCC = self-concept clarity (higher scores indicate higher levels of clarity of self-concept); GBEL = the gap between experience and language (higher scores indicate higher levels of confidence in language); ANX = scores from Beck Anxiety Scale (higher scores indicate higher levels of anxiety); DEP = depression subscale of the Brief Symptom Inventory (higher scores indicate higher levels of depression); ALEX = scores from Toronto Alexithymia Scale;
*$p < .05$.

for all individuals (Neimeyer & Mahoney, 2002). The importance of language use, according to the model tested here, comes from its effects on SCC, which, in turn contributes to mental health.

GENERAL DISCUSSION

Numerous studies have shown that language is an important human capability, providing individuals with the ability to reflect on and communicate experience, which makes unique contributions to mental health (Clarke, 1991, 1996; Pennebaker, 1993; Pennebaker & Graybeal, 2001; Pennebaker & Seagal, 1999). This study showed that the relationship between GBEL and mental health (depression and alexithymia) is mediated by both clarity of the self-concept and anxiety experienced by individuals.

The findings of the present study support the hypothesis that GBEL is related to mental health via its effect on self-concept clarity, which in turn reduces levels of anxiety. This means that individuals having a sense of unity between experience and language also have clarity about their self-concept. The clarity of self-concept, on the other hand, reduces anxiety levels and, thus, reduces depressive and alexithymic symptoms.

These results extend the findings of WP (Pennebaker, 1993, Pennebakar & Graybeal, 2001; Pennebaker & King, 1999; Pennebaker & Seagal, 1999), which show that expression of inner experiences has unique contributions to mental health. This is so, according to Pennebaker & Graybeal (2001), because expression via language has an impact on the way people think about their emotions and themselves.

The explanation of WP stresses the content of the self-concept. The findings presented here, however, indicate that language use has also an impact on the structure of self. By putting a stressful experience into words, individuals can potentially construct a coherent narrative, which may render the experience more understandable both to themselves and to others to whom they disclose (Clark, 1993). It is plausible, then, to assert that when individuals feel that there is no gap between experience and language, it is easier for them to manage the information about the self and organize self-related knowledge. Consequently, the clarity of self-concept is expected to be influenced by the GBEL perceived by individuals. SCC in this respect refers to the extent to which the individual perceives experiences as less blurred and ineffable. As formulated by Guidano (2002), self-awareness or self-knowledge could be conceptualized by the interdependence between subjective bodily experiences (experiencing I) and symbolic representation of these experiences (explaining me). Chapman (1999) states that mental representations that are important in knowing and reasoning are themselves rooted in language. Social constructionists interpret this mediation as the main advantage for mental health because it opens the way to epistemic routes. In this approach, mental health is acknowledged by the never-ending process of experience followed by explanation of this experience through self-reflexive ability, namely

language or symbolic processes (Guidano, 2002; Lane & Marlow, 1999).

It seems that the correspondence between language and experience also reduces anxiety levels. It was found in this research that the relationship between the GBEL and anxiety is partially mediated by SCC, meaning that GBEL had a direct effect on anxiety beyond the effects of SCC. The phenomenological character inherent in psychological experiences makes the connection between experience and language an enigma. It has been proposed that psychological states cannot be directly denoted by linguistic markers because the referents in these situations are not overt (Montgomery, 2002). As Şimşek (2010) stated, linguistic acts of individuals are the main tool for making highly fluid experiences understandable and, thus, controllable. Language is not merely a tool by which the expression of psychological experiences is processed, but also makes the experiences possible because of its fundamental mediatory function. Thus, it is not difficult to speculate that the gap caused by difficulty in using language as a tool for reflecting on and communicating experience creates strong negative emotions.

Another finding of the present research showed that the relation of SCC with depression and alexithymia is partially mediated by individuals' level of anxiety. It means that when individuals experience confusion about self-relevant knowledge, their first reaction is anxiety. This is an expected situation, given that "People with less clear self-concepts are more likely to view the world as chaotic and unpredictable" (Smith et al., 1996, p. 427). Similarly, research indicates that uncertainty over the features of self has a close relationship with anxiety (Butzer & Kuiper, 2006).

Anxiety itself, on the other hand, seems to lead to depression and alexithymia. The nature of the relationship between anxiety and depression is highly controversial. While some researchers (Brady & Kendall, 1992; Lahey et al., 2004) question whether anxiety and depression are part of the same syndrome, broad support exists for the assumption that anxiety precedes depression (Seligman & Ollendick, 1998). The findings of the present research showed that anxiety also precedes alexithymia, and some support for this position has been provided by earlier research (Newton & Contrada, 1994). There are some findings showing that anxiety is a risk factor for alexithymia (Berthoz et al., 1999; Hendryx et al., 1991). Berthoz et al. (1999) claimed that alexithymia is mostly considered as a personality trait, but could even be conceptualized as a way of coping

with a life-threatening stress. The findings of the present research support such a hypothesis, showing that the relationship between SCC and alexithymia is partially mediated by anxiety.

One important implication of the present research is that therapeutic processes and helping efforts should improve the clients' ability to use language to express inner psychological experiences. As the gap between language and experience increases, individuals would come to have greater confidence in helping processes based on the dialogue between client and helper (Şimşek, 2010). Thus, in the process of clarifying the client's self-concept, the therapist should become aware of the language used by the client. An increased awareness of individual differences in use of language to represent inner experiences could make unique contributions to the helping process via its effects on self-knowledge.

Given the critical role of language in the construction of self, it is to be expected that other aspects of the structure of self such as self-concept complexity and self-concept differentiation would be affected by GBEL. Past research has shown that the complexity of the self has had beneficial effects on mental health (Diehl et al., 2001; Diehl & Hay, 2007). The effects of language on self-complexity, however, have yet to be comprehensively researched. The functions of language, in this regard, could also improve the complexity of the aspects of self. The same could be valid for self-compartmentalization, and thus future research should be focused on the effects of the functions of language on both complexity and compartmentalization.

Although this research has shown that SCC and anxiety mediate the relationship between the GBEL and mental health, future research should examine the mediatory role of other possible variables in the relationship of GBEL to SCC. It is now accepted that the self is constructed by interpersonal or social transactions (Bamberg, 2000; Neimeyer & Mahoney, 2002). Clarke (1991, 1996) showed, in this respect, that the ability to express experiences clearly in words in the helping process accompanies successful sessions because it improves the extent to which individuals understand and give meaning to their experiences. Some findings showed, in this regard, that the benefits of talking were highly dependent on the social sharing (Lepore, Pablo, Ragan, & Ramos, 2004). As Şimşek (2010) indicated, considering language as a valid tool for communicating personal experiences is likely to contribute to better interpersonal relationships, which, in turn, improve mental health. Possible mediators, in this respect,

include those related to interpersonal relationships such as expression of emotion, self-disclosure, and awareness of emotions of others, and also those related to self-inquiry such as self-consciousness and self-mindedness. Language as a means for acquiring knowledge of inner experiences, on the other hand, could contribute to self-inquiring behaviors such as self-mindedness or healthy self-focus, which also contribute to mental health.

The first limitation of the present study is the use of a nonclinical sample, and future research should test the same model to elucidate the mediatory effect of SCC in a clinical sample. A second limitation is the implied causal directions between the variables tested in the model. Although the model produced acceptable goodness of fit statistics, future research should test the causal directions by experimental or longitudinal research designs. Moreover, since self-report measures were used in the present research, it is not clear whether higher levels of GBEL correspond to the actual discrepancy between psychological experiences and the labels to name those experiences. Future research, therefore, could aim to assess GBEL on experiential data and test the effects of objectively defined levels of GBEL on mental health.

REFERENCES

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423.

Bamberg, M. (2000). Critical personalism, language and development. *Theory & Psychology, 10*(6), 749–767.

Beck, A. X., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56*, 893–897.

Berthoz, S., Consoli, S., Perez-Diaz, F., & Jouvent, R. (1999). Alexithymia and anxiety: Compounded relationships? A psychometric study. *European Psychiatry, 14*, 372–378.

Borden, J. W., Peterson, D. R., & Jackson, E. A. (1991). The Beck Anxiety Inventory in nonclinical samples: Initial psychometric properties. *Journal of Psychopathology and Behavioral Assessment, 13*, 345–356.

Brady, E. U., & Kendall, P. C. (1992). Comorbidity of anxiety and depression in children and adolescents. *Psychological Bulletin, 111*, 244–255.

Bucci, W. (1984). Linking words and things: Basic processes and individual variation. *Cognition, 17*, 137–153.

Bucci, W. (1982). The vocalization of painful affect. *Journal of Communication Disorders, 1982*(15), 415–440.

Butzer, B., & Kuiper, N. A. (2006). Relationship between the frequency of social comparisons and self-concept clarity, intolerance of uncertainty, anxiety, and depression. *Personality and Individual Differences, 41*, 167–176.

Campbell, J. D., Assanand, S., & Di Paula, A. (2003). The structure of the self-concept and its relation to psychological adjustment. *Journal of Personality, 71*(1), 115–140.

Campbell, J. D., Trapnell, P. D., Heine, S. J., & Katz, I. M. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology, 70*(1), 141–156.

Chaplin, T. M., Gillham, J. E., & Seligman, M. E. P. (2009). Gender, anxiety and depressive symptoms: A longitudinal study of early adolescents. *Journal of Early Adolescence, 29*(2), 307–327.

Chapman, M. (1999). Constructivism and the problem of reality. *Journal of Applied Developmental Psychology, 20*(1), 31–43.

Clark, L. F. (1993). Stress and the cognitive-conversational benefits of social interaction. *Journal of Social and Clinical Psychology, 12*, 25–55.

Clarke, K. M. (1991). A performance model of the creation of meaning event. *Psychotherapy: Theory, Research, and Practice, 28*(3), 395–401.

Clarke, K. M. (1996). Change process in a creation of meaning event. *Journal of Consulting and Clinical Psychology, 64*(3), 465–470.

Cunningham, S. (1995). Intrapersonal communication: A review and critique. In J. Aitken & L. Shedletsky (Eds.), *Intrapersonal communication processes* (pp. 3–18). Annandale, VA: National Communication Association.

Dereboy, F. (1990). *A study on the psychometric properties of alexithymia self-report scales*. Ankara: Unpublished master's thesis, Hacettepe University.

Derogatis, L. R. (1992). *The brief symptom inventory (BSI), administration, scoring, and procedures: Manual II*. Baltimore, MD: Clinical Psychometric Research.

Diehl, M., Hastings, C. T., & Stanton, J. M. (2001). Self-concept differentiation across the adult life span. *Psychology and Aging, 16*(4), 643–654.

Diehl, M., & Hay, E. L. (2007). Contextualized self-representations in adulthood. *Journal of Personality, 75*(6), 1255–1284.

Epstein, S. (1973). The self-concept revisited, or a theory of a theory. *American Psychologist, 28*, 404–416.

Fertuck, E. A., Bucci, W., Blatt, S. J., & Ford, R. Q. (2004). Verbal representation and therapeutic change in anaclitic and introjective patients. *Psychotherapy: Theory, Research, and Practice, 41*(1), 13–25.

Gazelle, H., & Ladd, G. W. (2003). Anxious solitude and peer exclusion: A diathesis-stress model of internalizing trajectories in childhood. *Child Development, 74*, 257–278.

Guidano, V. F. (2002). Self-observation in constructivist psychotherapy. In R. A. Neimeyer, & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 155–168). Washington, DC: American Psychological Association.

Hendryx, M. S., Haviland, M. G., & Shaw, D. G. (1991). Dimensions of alexithymia and their relationship to anxiety and depression. *Journal of Personality Assessment, 56*, 227–237.

Howe, N. (1991). Sibling-directed internal state language, perspective taking, and affective behavior. *Child Development, 62*, 1503–1512.

Howe, N., Aquan-Assee, J., Bukowski, W. M., Lehoux, P. M., & Rinaldi, C. M. (2001). Siblings as confidants: Emotional understanding, relationship warmth, and sibling self-disclosure. *Social Development, 10*(4), 439–454.

Lahey, B. B., Applegate, B., Waldman, I. D., Loft, J. D., Hankin, B. L., & Rick, J. (2004). The structure of child and adolescent psychopathology: Generating new hypotheses. *Journal of Abnormal Psychology, 113*, 358–385.

Lane, L. G., & Marlow, B. (1999). Self as verb and the metaphor of dance: An explanation of the self discovery experience within a constructivist framework. *Asian Journal of Social Psychology, 2*, 357–365.

Lane, R. D., Sechrest, L., Reidel, R., Weldon, V., Kaszniak, A., & Schwartz, G. E. (1996). Impaired verbal and nonverbal emotion recognition in alexithymia. *Psycholosomatic Medicine, 58*, 203–210.

Lemche, E., Klann-Delius, G., Koch, R., & Joraschky, P. (2004). Mentalizing language development in a longitudinal attachment sample: Implications for alexithymia. *Psychotherapy and Psychosomatics, 73*, 366–374.

Lepore, S. J., Pablo, F. B., Ragan, J., & Ramos, N. (2004). It is not that bad: Social challenges to emotional disclosure enhance adjustment to stress. *Anxiety, Stress and Coping, 17*(4), 341–361.

Montgomery, D. E. (2002). Mental verbs and semantic development. *Journal of Cognition & Development, 3*(4), 357–385.

Moriguchi, Y., Ohnishi, T., Decety, J., Hirakata, M., Maeda, M., Matsuda, H., et al. (2009). The human mirror neuron system in a population with deficient self-awareness: An fMRI study in alexithymia. *Human Brain Mapping, 30*, 2063–2076.

Moriguchi, Y., Ohnishi, T., Lane, R. D., Maeda, M., Mori, T., Nemoto, K., et al. (2006). Impaired self-awareness and theory of mind: An fMRI study of mentalizing in alexithymia. *NeuroImage, 32*, 1472–1482.

Neimeyer, R. A. (2002). Constructivist psychotherapies: Features, foundations, and future directions. In R. A. Neimeyer & M. J. Mahoney (Eds.), *Constructivism in psychotherapy* (pp. 11–38). Washington, DC: American Psychological Association.

Neimeyer, R. A., & Mahoney, M. J. (2002). *Constructivism in psychotherapy*. Washington, DC: American Psychological Association.

Newton, T. L., & Contrada, R. J. (1994). Alexithymia and repression: Contrasting emotion-focused coping styles. *Psychosomatic Medicine, 56*, 457–462.

Parker, G., Wilhelm, K., & Asghari, A. (1997). Early onset depression: The relevance of anxiety. *Social Psychiarty and Psychiatric Epidemiology, 32*, 30–37.

Parker, G., Wilhelm, K., Mitchell, P., Austin, M. P., Roussos, J., & Gladstone, G. (1999). The influence of anxiety as a risk to early onset major depression. *Journal of Affective Disorders, 52*, 11–17.

Pennebaker, J. W. (1993). Putting stress into words: Health, linguistics, and therapeutic implications. *Behavior Reaserch and Therapy, 31*, 539–548.

Pennebaker, J. W., & Graybeal, A. (2001). Patterns of natural langauge use: Disclosure, personality, and social integration. *Current Directions in Psychological Science, 10*(3), 90–93.

Pennebaker, J. W., & King, L. A. (1999). Linguistic styles: Language use as an individual difference. *Journal of Personality and Social Psychology, 77*(6), 1296–1312.

Pennebaker, J. W., Mehl, M. R., & Neiderhoffer, K. G. (2003). Psychological aspects of natural language use: Our words, our selves. *Annual Review of Psychology, 54*, 547–577.

Pennebaker, J. W., & Seagal, J. D. (1999). Forming a story: The health benefits of narrative. *Journal of Clinical Psychology, 55*(10), 1243–1254.

Şahin, H. N., & Durak, A. (1994). Kisa saemptom envanteri: Turk gencleri icin uyarlanmasi [Brief symptom inventory: Adaptation for the Turkish youth]. *Türk Psikoloji Dergisi, 9*(31), 44–56.

Seligman, L. D., & Ollendick, T. H. (1998). Comorbidity of anxiety and depression in children and adolescents: An integrative review. *Clinical Child and Family Psychology Review, 1*(2), 125–144.

Şimşek, O. F. (2010). Language and the inner: Development of the beliefs about functions of language (BAFL) scale. *European Psychologist, 15*(1), 68–79.

Smith, M., Wethington, E., & Zhann, G. (1996). Self-concept clarity and preferred coping styles. *Journal of Personality, 64*(2), 407–434.

Sümer, N., & Güngör, D. (1999). Psychometric evaluation of adult attachment measures on Turkish samples and a cross-cultural comparison. *Turkish Journal of Psychology, 14*(43), 71–106.

Taylor, G. J. (2004). Alexithymia: 25 years of theory and research. In I. Nyklicek, L. Temoshok, & A. Vingerhoets (Eds.), *Emotional expression and health: Advances in theory, assessment, and clinical applications* (pp. 138–154). New York, NY: Brunner-Routledge.

Taylor, G. J., Ryan, D., & Bagby, R. M. (1985). Toward the development of a new self-report alexithymia. *Psychotherapy and Psychosomatics, 44*, 191–199.

Ulusoy, M., Sahin, N., & Erkmen, H. (1996). Turkish version of the Beck anxiety inventory: Psychometric properties. *Journal of Cognitive Psychotherapy, 12*, 163–172.

Vaneechoutte, M. (2000). Experience, awareness, and consciousness: Suggestions for definitions offered by an evolutionary approach. *Foundations of Science, 5*, 429–456.

Yarcheski, A., & Mahon, N. E. (2000). A causal model of depression in early adolescents. *Western Journal of Nursing Research, 22*(8), 879–894.