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The Effect of Compartmentalization of Other-concept on Depression

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This study examined whether compartmentalizing other-concept can further explain depression while controlling for the compartmentalization variables of self-concept. To analyze the difference in the effect of other-concept compartmentalization, Study 1 measured the other-concept of an intimate person, and Study 2 measured the other-concept of general figures, such as typical college students. In each study, the structures of self-concept (S-SAT), other-concept (S-OAT), and depression were measured in 190 college students. While the main effect of the self-concept control variables was significant, the other-concept variables did not predict depression in Study 1; however, the proportion of negative attributes of others predicted a decrease in depression in Study 2. Moreover, in Study 2, there was an interactive effect of compartmentalization and the differential importance of other-concepts. The group that positively compartmentalized the concept of a typical college student had a S-OAT higher depression than the group that negatively compartmentalized it. However, the difference in depression was not significant between the group that negatively compartmentalized the concept and the group that negatively integrated it. Finally, the clinical implications and limitations of the study are discussed.

Keywords: compartmentalization, integration, self-concept, other-concept, depression

Introduction

The interpersonal problems of individuals with depression are one of the main concerns of cognitive therapists. This is because negative thoughts and emotions of individuals with depression can stand out in an interpersonal context. However, studies investigating interpersonal aspects, such as other-concepts in individuals with depression, are insufficient compared to studies on self-concept studies, and the results are not clear (Yune & Oh, 2004). In previous studies, the self-concepts of individuals with depression were consistently negative, but their other-concepts were sometimes positive or negative (Carnelley et al., 1994; Girz et al., 2017; Koenig et al., 1995).

Studies on other-concepts have focused on the relationship between content factors and depression. The content factor may be positive or negative depending on the object of the other-concept (*e.g., friends or strangers*) and certain aspects of others in specific situations (*e.g., when you are alone or in a relationship*). When the interpersonal patterns of individuals with depression differ because of differences in the other-concept, it is necessary to explore the variables that can stably explain this difference. Some researchers emphasize the structural aspects of other-concept, such as the compartmentalization method of self-concept, which has explained depression (Showers, 1992; You & Lee, 2013), and expect the compartmentalization of other-concepts to predict the interpersonal relationship of individuals with depression (Showers & Zeigler-Hill, 2004).

Compartmentalization theory focuses on the distribution of

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positive and negative contents across multiple self-aspects (Showers, 1992). Individuals with high level of compartmentalization process their self-aspects as either positive or negative (*e.g., Me as a friend: friendly, cautious, and optimistic; Me as a lover: indifferent, passive, and anxious*). Those with low level of compartmentalization integrate their thoughts or emotions by recognizing all the positive and negative contents of each self-aspect (*e.g., Me as a friend: responsible, curious, stubborn, and indecisive*). Hence, compartmentalization may be classified according to whether emphasis is placed on the positive or negative content of each self-aspect (You & Lee, 2022).

As shown in a previous study by Showers (1992), when the compartmentalization group considered positive aspects more important, they only recognized their positive points and had a lower level of depression and higher level of self-esteem than those in the integration group. However, when the compartmentalization group considered the negative aspects more important, depression levels were higher than those in the integration group, while focusing on the negative aspects (Showers, 1992). In addition, the middle-aged group with major depressive disorder had a higher rate of compartmentalization and proportion of negative attributes than the control group (Dalgleish et al., 2011). The proportion of negative attributes (Neg) explains the negative content included in the self-concept, which increases with the level of negative stress (Showers et al., 1998). Zeigler-Hill and Showers (2007) revealed that the compartmentalization group reacted sensitively to negative life events such as social rejection, and their self-esteem was unstable. That is, behind the overly positive self-concept is a low sense of self-esteem, which can activate negative content, even with minor criticism and rejection (Showers et al., 2015; Thomas et al., 2013).

Compartmentalization may not stably predict the quality and satisfaction of relationship. Showers and Kevlyn (1999) showed that, at the time of the study, individuals who positively compartmentalize their lovers report having a better relationship relative to those who engage in positive integration. However, evidence suggests that, in the long term, positive compartmentalization of others is more likely to be associated with aggravation and cutting-off of relationships with others (Showers & Zeigler-Hill, 2004). Likewise, Limke and Showers (2010) revealed that compartmentalization of the parent concept could explain the unstable adult child-parent relationship.

Therefore, unless negative aspects are activated, the perception of negative experiences can be avoided through compartmentalization. Positive compartmentalization can temporarily increase positive feelings for oneself and partners; however, these feelings are unrealistic and unstable, and can be vulnerable to change. On the other hand, integration can consider all positive and negative factors without excluding negative aspects. That is, even though integration requires more psychological effort than compartmentalization, it makes it possible to evaluate and cope with psychological problems more realistically.

To date, studies have only revealed that positive compartmentalization of other-concept could predict unstable interpersonal relationships (Limke & Showers, 2010; Showers & Zeigler-Hill, 2004). However, the relationship between compartmentalization of other-concepts and depression has not yet been examined. Considering that compartmentalization of others predicts interpersonal problems and that depression can worsen in relationship scenes, it is necessary to examine whether compartmentalization of others can stably predict depression.

Two factors should be considered when measuring other-compartmentalization. First, studies that examined the relationship between other-compartmentalization and interpersonal problem did not include self-concept variables in the analysis (Limke & Showers, 2010; Showers & Kevlyn, 1999; Showers & Zeigler-Hill, 2004). In the comparative analysis of self- and other-concepts (Aron et al., 1991; Brown et al., 2009), these concepts were correlated, and the concept of more intimate people (*e.g., lovers or families*) was measured; the higher the intimacy, the higher the correlation. Therefore, the instability of others' compartmentalization revealed in previous studies may be a result of self-compartmentalization. To accurately measure the effect of other-compartmentalization, it is necessary to include all the variables of self and others in the analysis and examine whether the other-concept variables can further explain depression.

Second, the concept of others was set differently in each study. Studies that have suggested that negative views of individuals with depression are limited to self-concept have set fictional standard characters (*e.g., typical college students*) as others (Girz et al., 2017; Koenig et al., 1995). Other studies the have argued that both con-

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cepts of self and others are negative have set intimate people (*e.g., lovers, spouses, and friends*) as others (Carnelley et al., 1994; Gara et al., 1993; Moritz & Roberts, 2018). In other words, it is possible that the other-concept of individuals with depression was either positive or negative according to the intimacy between the participants and targeted others. Hence, to measure the effect of other-concepts, it seems necessary not only to measure the self- and other-concepts at the same time but also to classify and analyze intimacy with targeted others.

This study was divided into two to examine the effect of compartmentalization of others on depression. First, the concept of an intimate person is measured and analyzed to determine whether it can further explain depression while controlling for self-concept variables. Next, the concept of ordinary individuals, such as typical college students, is measured to verify whether it can further predict depression while controlling for self-concept variables.

When measuring the concept of intimate others, the concepts of self and others are highly correlated; thus, other-concept variables may not predict an increase in depression. However, when measuring the concepts of ordinary others, it is possible to predict an increase in depression after controlling for self-concept variables because of the low correlation between self- and other-concepts. In addition, because an individual with depression has a negative self-concept but a positive concept of a general person (Girz et al., 2017; Koenig et al., 1995), positive compartmentalization of the other-concept while maintaining a negative self-concept may reflect the general interpersonal characteristics of an individual with depression. Therefore, this study aimed to explore whether positive compartmentalization of the concepts of intimate and ordinary figures could have a different effect on depression.

Study 1

Study 1 attempted to examine whether the compartmentalization of intimate other-concepts could further explain depression after controlling for self-concept variables.

Methods

Participants

After obtaining approval from the Institutional Review Board of The Catholic University of Korea, 200 undergraduate and graduate students participated in an online survey. Among them, one participant who submitted the same data in duplicate and nine who responded insincerely were excluded. A total of 190 data points were included in the final analysis: 13.7% were men ($n = 26$) and 86.3% were women ($n = 164$). The age of the participants was between 18 and 55 years, and the mean age was 24.6 ($SD = 5.51$).

Measurements

Short version of self–aspect test (S–SAT)

The short version of the self-aspect test (S-SAT) is a paper-pencil version of a self-descriptive card-sorting task, and the problem of SAT (Hwang, 2007) has been revised and supplemented (You & Lee, 2022). The participants described their six self-aspects with the response set, which included 13 positive and 13 negative expressions. This test was conducted to calculate phi, differential importance, and the proportion of negative attributes (Showers, 1992). In this study, phi, differential importance_revised, and proportion of negative attributes_revised were calculated based on a previous study (You & Lee, 2022).

Phi (Φ)

The phi coefficient is the positive square root of the chi-square statistic (χ^2) divided by the total number of words [$\phi=\sqrt{(\chi^2/N)}$]. This indicator ranges from 0 to 1. The closer the value is to 0, the more integrated it is; and the closer it is to 1, the more compartmentalized it is (Showers, 1992).

Differential Importance_Revised (DI_R)

Differential importance (DI) is a measure of the relative importance of positive and negative self-aspects. DI_R is a variable that modifies the calculation method of DI (You & Lee, 2022). The positivity, negativity, and importance of each aspect were evaluated on a 7-point scale and were calculated as follows: The range of DI_R is -1 to +1, which is the same as that of the existing indicator. The closer the value is to 1, the more important the positive aspect is perceived compared to the negative aspect and vice versa.

$$\text{DI\_R} = \sum \left[\frac{\text{Importance} \times (\text{Positivity} - \text{Negativity})}{42} \right] \div \text{N (the number of self aspects)}$$

The proportion of negative attributes_Revised (Neg_R)

Neg is a calculation of the total ratio of negative words to all words used in the card-sorting task. Neg_R is an indicator that considers the importance of the original indicator (You & Lee, 2022). The formula for this calculation is as follows: The proportion of negative words refers to the ratio of negative words used to all 13 negative words in each aspect. The range of Neg_R is 0 to 1, and the closer it is to 1, the more negative the content is in the self-concept.

$$\text{Neg\_R} = \sum [\frac{(\text{the number of negative words} \div 13) \times \text{Importance}}{7\ (\text{maximum value of importance})}] \div \text{N (the number of self aspects)}$$

Short version of other–aspect test (S–OAT), intimate other version

The short version of the other-aspect test (S-OAT) is the "other" version of the S-SAT. In Study 1, the "other" was the most intimate. Except for the subject of measurement, the construction of the test was the same as that of the S-SAT. In addition, the sex of the intimate other and their relationship periods were investigated. In this study, 82.1% of the participants (n = 156) chose same-sex other, and 17.9% (n = 34) chose the opposite-sex other, and the average relationship period was 75 months.

Center for epidemiologic studies depression scale (CES–D)

The CES-D is a self-report questionnaire on depression in the general population, which is developed by the American Institute of Mental Health (Radloff, 1977). This study used the scale validated by Chon et al. (2001). The frequency of the past week was selected on a 4-point scale with 20 items. The total score ranges from 0 to 60, with higher scores indicating greater depression. Cronbach's α was both .91 in the study by Chon et al. (2001) and Study 1.

Procedure

The online versions of the CES-D, S-SAT, and S-OAT were administered to undergraduate and graduate students aged 18 years or older. Prior to the survey, participants were informed of the purpose of the study and how to complete the survey. Rewards were given to those who completed the online survey. The collected data were analyzed using IBM SPSS Statistics 26.0. First, correlation analyses were performed between the self- and other-concept variables. A hierarchical multiple regression analysis was then conducted to examine whether other-concepts can further explain depression while controlling for self-concept variables. In addition, to analyze the results, the relationship between self-concept and depression was further analyzed while controlling for other-concept variables. The predictive variables were mean-centered before the analysis.

Results

Correlation analyses between the main variables

Table 1 presents the correlation results for the main variables. Self_Com and Other_Com (r = .50, p < .01), Self_DIR and Other_DIR (r = .65, p < .01), and Self_NegR and Other_NegR (r = .59,

Table 1. *Correlation between Scales (N = 190)*

	1. S_Phi	2. S_DIR	3. S_NegR	4. O_Phi	5. O_DIR	6. O_NegR	7. CES-D
1							
2	-.02						
3	-.23**	-.57**					
4	.50**	.05	-.19*				
5	.08	.65**	-.30**	.03			
6	-.38**	-.45**	.59**	-.37**	-.54**		
7	.14*	-.55**	.49**	.01	-.36**	.36**	
Mean	0.29	0.22	0.31	0.29	0.26	0.24	19.23
SD	0.14	0.23	0.14	0.14	0.24	0.15	9.22

Note. The shading compartments show the correlation between the self- and other-concept variables.
S_Phi = Self Phi coefficient; S_DIR = Self Differential importance_revised; S_NegR = Self Proportion of negative attributes_revised; O_Phi = Other Phi coefficient; O_DIR = Other Differential importance_revised; O_NegR = Other Proportion of negative attributes_revised; CES-D = Center for epidemiologic studies depression scale.
*p < .05, **p < .01.

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$p < .01$) were positively correlated. In short, variables related to self-concept had a positive correlation with variables related to other-concepts.

However, Self_Com was negatively correlated with Self_NegR ($r = -.23$, $p < .01$) and positively correlated with depression ($r = .14$, $p < .05$). Self_DIR was negatively correlated with Self_NegR ($r = -.57$, $p < .01$) and depression ($r = -.55$, $p < .01$), and Self_NegR was positively correlated with depression ($r = .49$, $p < .01$). In addition, Other_Com and Other_NegR ($r = -.37$, $p < .01$) were negatively correlated. Other_DIR was negatively correlated with Other_NegR ($r = -.54$, $p < .01$) and depression ($r = -.36$, $p < .01$), while Other_NegR was positively correlated with depression ($r = .36$, $p < .01$).

Effect of compartmentalization of other–concept on depression

Hierarchical multiple regression analysis was conducted to examine whether other-concepts can further explain depression while controlling for self-concept variables. As presented in Table 2, the main effects of the control variables on depression were significant. Self_DIR explained 29.7% of depression ($F[1, 188] = 79.48$, $p < .001$); Self_NegR further explained 4.8% of depression ($F[1, 187] = 13.82$, $p < .001$); and Self_Com further accounted for 4.3% of depression, ($F[1, 186] = 13.10$, $p < .001$). However, the main and interaction effects of the predictive variables did not significantly explain the depressive symptoms.

The relationship between self-concept and depression was then analyzed while controlling for other-concept variables. As shown (Table 2), the main effects of the predictors of depression were significant except for the effects of the control variables. Self_DIR was added to 14.7% of depression ($F[1, 185] = 40.27$, $p < .001$); Self_Com explained 3.6% of depression ($F[1, 184] = 10.25$, $p < .01$); and Self_NegR explained 4.0% of depression ($F[1, 183] = 12.36$, $p < .01$). However, the interaction effects of the predictive variables did not significantly explain the depressive symptoms.

Specifically, the more participants compartmentalized their self-concept, the less important they regarded the positive aspects of their self-concept; and the more negative the content they had on their self-concept, the higher their CES-D score. Even when controlling for other-concept variables, the main effects of the self-concept variables (*i.e., Self_Com, Self_DIR, and Self_NegR*) further explained the depressive symptoms. However, when controlling for the self-concept variables, the main and interaction effects of the other-concept variables (*i.e., Other_Com, Other_DIR, and Other_NegR*) did not further explain depressive symptoms. Therefore, in an intimate relationship, it appears that the structure and content of a self-concept can affect depression more than other-concepts.

Study 2

In Study 2, instead of an intimate person, the concept of a general person, such as a typical college student, was measured. Data were analyzed in the same manner as those in Study 1.

Table 2. *Regression Analysis of Self-concept and Other-concept Variables on Depression*

Step	Variables	β	R^2	$\triangle R^2$	$\triangle F$	Variables	β	R^2	$\triangle R^2$	$\triangle F$
1	S_DIR	-.55***	.297	.297	79.48***	O_DIR	-.36***	.129	.129	27.78***
	S_NegR	.27***	.346	.048	13.82***	O_NegR	.23**	.166	.037	8.39**
	S_Phi	.22***	.389	.043	13.10***	O_Phi	.12	.178	.011	2.56
2	O_NegR(A)	.15	.400	.012	3.63	S_DIR(A)	-.51***	.325	.147	40.27***
	O_DIR(B)	-.03	.401	.000	0.09	S_Phi(B)	.23**	.360	.036	10.25**
	O_Phi(C)	.00	.401	.000	0.00	S_NegR(C)	.29**	.401	.040	12.36**
3	B × C	.05	.403	.002	0.59	B × C	.11	.411	.010	3.21
	A × C	-.05	.404	.001	0.44	A × B	-.01	.411	.000	0.05
	A × B	-.02	.404	.000	0.08	A × C	.00	.411	.000	0.00
4	A × B × C	.05	.405	.001	0.17	A × B × C	.12	.421	.010	3.04

Note. S_Phi = Self Phi coefficient; S_DIR = Self Differential importance_revised; S_NegR = Self Proportion of negative attributes_revised; O_Phi = Other Phi coefficient; O_DIR = Other Differential importance_revised; O_NegR = Other Proportion of negative attributes_revised; CES-D = Center for epidemilogic studies depression scale.
**$p < .01$, ***$p < .001$.

Methods

Participants

In Study 2, 200 undergraduate and graduate students participated in the online survey. Among them, six who submitted the same data in duplicate and four who responded insincerely were excluded. A total of 190 data points were included in the final analysis: 23.2% were men (n = 44) and 76.8% were women (n = 146). The age distribution ranged from 18 to 48 years with a mean age of 25.0 (SD = 5.74).

Measurements

S–SAT

The S-SAT was the same as that used in Study 1. Phi, DI_R, and Neg_R of self-concept were used for analysis.

S–OAT (Typical college version)

The S-OAT was the same as that used in Study 1, except for the subject of the other, which changed to typical college students. Phi, DI_R, and Neg_R of the other-concept were used for analysis.

CES–D scale

The CES-D was the same as that used in Study 1, and the Cronbach's α in Study 2 was .89.

Procedure

The procedure and data analysis were the same as those in Study 1, except for the subject of the other-concept. In the case of significant interaction verified from the hierarchical multiple regression analysis, a t-test was conducted to specifically investigate the pattern. Prior to conducting the t-test, predictors were divided based on the upper and lower values of 30%.

Results

Correlation analyses between the main variables

The correlation results for the main variables, including Self_Com and Other_Com, are presented in Table 3. First, between the variables of self-concept and other-concept, the correlation results were as follows: Self_Com and Other_Com (r = .45, p < .01), Self_DIR and Other_DIR (r = .44, p < .01), and Self_NegR and Other_NegR (r = .55, p < .01) were positively correlated. That is, in the case of typical college students, variables related to self-concept had a positive correlation with variables related to other-concepts, similar to the case of intimate others.

However, Self_Com was negatively correlated with Self_NegR (r = -.20, p < .01) and tended to be positively correlated with depression (r = .14, p < .10). Self_DIR was negatively correlated with Self_NegR (r = -.40, p < .01) and depression (r = -.53, p < .01), and Self_NegR was positively correlated with depression (r = .45, p < .01). Moreover, Ohers_Com and Other_NegR (r = -.28, p < .01) were negatively correlated. Other_DIR was negatively correlated with Other_NegR (r = -.22, p < .01). Other_Com, Other_DIR, and

Table 3. *Correlation between Scales (N = 190)*

	1. S_Phi	2. S_DIR	3. S_NegR	4. O_Phi	5. O_DIR	6. O_NegR	7. CES-D
1							
2	-.08						
3	-.20**	-.40**					
4	.45**	-.00	-.12				
5	.16*	.44**	-.06	.00			
6	-.34**	.03	.55**	-.28**	-.22**		
7	.14†	-.53**	.45**	.06	-.09	.06	
Mean	0.35	0.18	0.29	0.32	0.24	0.27	20.27
SD	0.14	0.21	0.14	0.15	0.20	0.15	8.77

Note. The shading compartments show the correlation between the self- and other-concept variables.
S_Phi = Self Phi coefficient; S_DIR = Self Differential importance_revised; S_NegR = Self Proportion of negative attributes_revised; O_Phi = Other Phi coefficient; O_DIR = Other Differential importance_revised; O_NegR = Other Proportion of negative attributes_revised; CES-D = Center for epidemiologic studies depression scale.
†p < .10, *p < .05, **p < .01.

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Other_NegR did not significantly correlate with depression.

Effect of compartmentalization of other–concepts on depression

Prior to the analysis, as that in Study 1, the relationship between self-concept and depression was analyzed while controlling for other-concept variables. As shown (Table 4), the main effects of the predictors of depression were significant, except for the effects of the control variables. Self_NegR was added to 25.1% of depression (F[1, 185] = 63.26, $p < .001$); Self_Com further explained 2.9% of depression (F[1, 184] = 7.68, $p < .01$); and Self_DIR further explained 1.7% of depression (F[1, 183] = 4.51, $p < .05$). However, the interaction effect of the predictive variables did not significantly explain the depressive symptoms.

A hierarchical multiple regression analysis was then conducted to examine whether the other-concept can further explain depression while controlling for self-concept variables. As shown (Table 4), the main effects of the control variables on depression were significant, as those in Study 1. Self_NegR explained 20.6% of depression (F[1, 188] = 48.69, $p < .001$); Self_Com further explained 5.3% of depression (F[1, 187] = 13.43, $p < .001$); and Self_DIR further accounted for 3.0% of depression (F[1, 186] = 7.86, $p < .001$).

Even when controlling for variables of self-concept on depression, Other_NegR explained 2.2% of depression (F[1, 185] = 5.83, $p < .05$); the main effects of Other_Com and Other_DIR did not significantly explain the CES-D score. In addition, the two-way interaction effect of Other_Com and Other_DIR further explained 1.6% of depression (F[1, 182] = 4.42, $p < .05$); however, the interaction effects of other predictors did not significantly explain depressive symptoms.

To further investigate the two-way interaction of Other_Com and Other_DIR on depression, four groups were classified based on the 30% of the upper and lower values of two predictive variables: Other-Compartmentalization (Other_Com) and Other-Integration (Other_Int) groups, and positive and negative-centered groups. As shown (Figure 1), the positive-centered Other_Com group (N = 17, M = 24.65, SD = 11.84) showed higher levels of depression than the positive-centered Other_Int group (N = 19, M = 15.47, SD = 8.87, t[34] = 2.65, $p < .05$). However, there was no significant difference in the CES-D score between the negative-centered Other_Com group (N = 18, M = 19.5, SD = 9.74) and negative-centered Other_Int group (N = 23, M = 21.65, SD = 6.21, t[39] = 0.40, *ns.*).

In summary, the main effect of the self-concept variables strongly predicted depression. There was also a main effect of Other_NegR and a two-way interaction effect of Other_Com and Other_DIR while controlling for self-concept variables. When the self-concept was negative, depressive symptoms decreased as other-concepts were negative and increased as other-concepts were compartmentalized positively. That is, in general relationships, both self and other-concepts had an effect on depression.

Table 4. *Regression Analysis of Self-concept and Other-concept Variables on Depression*

Step	Variables	β	R^2	$\triangle R^2$	$\triangle F$	Variables	β	R^2	$\triangle R^2$	$\triangle F$
1	S_NegR	.45***	.206	.206	48.69***	O_DIR	-.09	.008	.008	1.54
	S_Phi	.24***	.259	.053	13.43***	O_NegR	.05	.011	.003	0.49
	S_DIR	-.19**	.289	.030	7.86**	O_Phi	.07	.015	.004	0.84
2	O_NegR(A)	-.19*	.311	.022	5.83*	S_NegR(A)	.60***	.266	.251	63.26***
	O_DIR(B)	-.04	.312	.002	0.42	S_Phi(B)	.20**	.296	.029	7.68**
	O_Phi(C)	-.02	.312	.000	0.05	S_DIR(C)	-.15*	.312	.017	4.51*
3	B × C	.14*	.329	.016	4.42*	A × B	.09	.318	.006	1.55
	A × C	.09	.334	.006	1.55	B × C	.09	.326	.008	2.09
	A × B	.05	.336	.002	0.47	A × C	.00	.326	.000	0.00
4	A × B × C	.06	.338	.002	0.62	A × B × C	-.06	.328	.002	0.00

Note. S_Phi = Self Phi coefficient; S_DIR = Self Differential importance_revised; S_NegR = Self Proportion of negative attributes_revised; O_Phi = Other Phi coefficient; O_DIR = Other Differential importance_revised; O_NegR = Other Proportion of negative attributes_revised; CES-D = Center for epidemilogic studies depression scale.
*$p < .05$, **$p < .01$, ***$p < .001$.

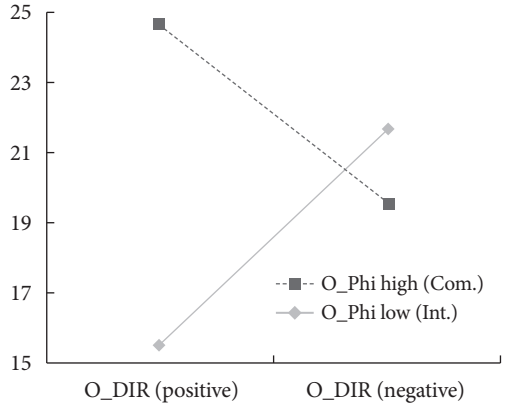

Figure 1. *2-way interaction effect of O_Phi, O_DIR on Depression. Note. O_Phi = Other Phi coefficient; O_DIR = Other Differential importance_revised; Com. = Compartmentalization; Int. = Integration.*

Discussion

This study attempted to examine whether the structural and content components of other-concepts can further explain depression while controlling for self-concept variables. The main results are as follows:

First, compartmentalization, differential importance, and the proportion of the negative attributes of self-concept were positively correlated with those of other-concepts, and this correlation was significant regardless of whether the concept was about participants' close friends or general people. However, compared to the concept of general figures, intimate others showed a significant correlation with depression and had a higher correlation coefficient with self-concept. Therefore, the relationship between self- and other-concepts depends on the intimacy of the other, and the more intimate the other-concept, the more likely it is to be similar to the self-concept (Aron et al., 1991; Brown et al., 2009).

In addition, the compartmentalization of self-concept was negatively correlated with the proportion of negative attributes and positively correlated with depression; that is, the higher the level of compartmentalization, the more positive the content and possibility of depression. This result is consistent with previous studies that, whether positive or negative compartmentalization, compartmentalization itself may be a risk factor for depression (You & Lee, 2013; Zeigler-Hill & Showers, 2007).

Second, in intimate relationships, self-concept better explained the increase in depression than other-concept. The main effects of self-concept compartmentalization, differential importance, and proportion of negative attributes were significant for both the control and predictive variables. The more the self-concept was compartmentalized, the more depressed it was, and the less important the positive aspects of the self-concept were regarded, the more depressed it was, and the more negative the content of the self-concept, the more depressed it was. However, in intimate relationships, other-concept compartmentalization, differential importance, and the proportion of negative attributes did not explain depression, and the interaction effects of these predictors did not.

The above results seem to support the argument that the additional explanatory power of intimate other-concept may be insufficient under the control of self-concept because of the high explanatory power of the self-concept and high correlation between the concepts of self and others. In addition, because individuals with depression have both negative concepts of self and intimate figures, positive compartmentalization of intimate other-concepts is unlikely to account for increased depression (Carnelley et al., 1994; Moritz & Roberts, 2018; Siegel & Alloy, 1990). In intimate relationships, the structure and content of self-concept seem to have more influence on depression than on other-concepts.

Third, in general, both self and other-concepts predicted depression. The main effects of self-concepts were significant for both the control and predictor variables. However, the main effects were not significant when the other-concept was first analyzed as a control variable. These results suggest that, even in general relationships, negative self-concept has a stronger effect on depression than negative other-concepts (Choi & Lee, 1998).

In addition, the proportion of the negative attributes of other-concepts further explained depression only after controlling for the variables of self-concepts; depression levels decreased when there was more negative content in the other-concept. This result appears to be partially explained by social comparison theory (Swallow & Kuiper, 1988). A study on social comparison explains that individuals with depression infer their experiences negatively through upward comparisons, comparing their experiences to those who seem to have done better than themselves. Those without depression maintain their self-esteem through downward comparison, focusing on the strengths that they do better than others. Therefore, the inferential can be made from the results of

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this study: When self-concept is negative, the negative evaluation of others in general interpersonal relationships may have caused a decrease in depression by providing an opportunity to compare with others in a manner favorable to them (Swallow & Kuiper, 1990, 1992).

Finally, in Study 2, there was an interactive effect of compartmentalization and the differential importance of the other-concept. Specifically, the group that positively compartmentalized the concept of a typical college student had higher depressive levels than the group that positively integrated it. However, the difference in depression was not significant between the group that negatively compartmentalized the concept and the group that negatively integrated it. Previous studies have shown that individuals with depression have negative self-concept but positive other-concept in general relationships (Girz et al., 2017; Koenig et al., 1995). Considering that the self-concept variables used as control variables in this study predicted an increase in depression, it appears that individuals with negative self-concept attempting to see only the good things of the other person may cause an upward comparison between themselves and others, which may increase depression (Swallow & Kuiper, 1988).

Therefore, the results of this study reaffirm the importance of self-concept in depression and support the assertion that there are hidden vulnerabilities in the positive compartmentalization of other-concept and self-concept (Showers & Zeigler-Hill, 2004; You & Lee, 2022). However, the integration of the other-concept was relatively low in depressive level only when it was positive, and the depressive level was as high as compartmentalization when it was negative. That is, integration is not always beneficial for depression reduction. These results may be related to the fact that it is difficult to integrate other-concepts when the self-concept is negative; hence, it is necessary to recognize the problem of the self before dealing with the problems of others in the context of relationship conflict.

The clinical implications of this study are as follows: To date, unlike self-concept, studies on depression have not consistently explained the role of other concepts. This study revealed that the self- and other-concepts of individuals with depression are associated with each other and that their other-concept can be changed to the degree of intimacy of the target. Specifically, in an intimate relationship, only self-concept compartmentalization predicted depression, whereas in general relationships, compartmentalization of self- and other-concepts significantly explained depression. These results suggest that individuals with depression may have different ways of organizing their thoughts and emotions depending on object relationships and that other-concept compartmentalization may explain some of the unstable interpersonal problems of individuals with depression. Hence, it may be prudent for therapists to be aware of these factors.

The limitations of this study are as follows: The correlation coefficients between compartmentalization and depression in Studies 1 and 2 differed slightly. The first reason for this difference may be that the recruited participants in Studies 1 and 2 were not homogenous. As the participants were recruited from various online communities, the age and sex distributions differed in Studies 1 and 2. In future studies, it is recommended to consider the demographic characteristics of the recruited participants.

Second, in this study, a self-report test was developed to understand the compartmentalized structure in detail, and the calculation methods for differential importance and proportion of negative attributes were modified and used for analysis. Among them, the revised proportion of negative attributes of others did not predict depression in Study 1 and did predict a decrease in depression in Study 2. This difference seems to be due to the different concepts of others in Studies 1 and 2; however, it should be continuously examined in subsequent studies for the validation of S-SAT and modified indicators.

In addition, the phi coefficient was based on the chi-square test. Although there are many negative words and few positive words in all aspects, when the ratio of positive and negative words remains almost the same for each aspect, the phi coefficient is bound to be low (Park, 1996). Thus, it is a possible to lower the correlation coefficient with other variables, such as depression. Although there are not many cases of such extremes, it seems that to measure compartmentalization more accurately, calculation methods should be improved.

Author contributions statement

Deuk-Kweon You, Ph.D, a graduate student at The Catholic Uni-

versity of Korea who designed the study, collected and analyzed data, and prepared the manuscript. Young-Ho Lee, professor at The Catholic University of Korea, supervised and guided the research process. All the authors provided critical feedback, participated in the revision of the manuscript, and approved the final submission.

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