



Depressive symptoms in university freshmen: Longitudinal relations with contingent self-esteem and level of self-esteem

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ABSTRACT

The present study tested longitudinal relations between depressive symptoms and two aspects of self-esteem in university freshmen: (1) students' level of self-esteem, and (2) the degree to which students' self-esteem is dependent on meeting particular standards (i.e., contingent self-esteem). Using three-wave longitudinal data ($N = 494$), possible vulnerability as well as scar effects were tested. Results showed that both aspects of self-esteem increased the vulnerability for depressive symptoms. However, contingent self-esteem only predicted higher subsequent levels of depressive symptoms when not controlling for self-esteem level. In contrast, level of self-esteem was a unique predictor for depressive symptoms.

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1. Introduction

Depression is a mental health problem causing significant disabilities in approximately 121 million individuals across the world (e.g., Sowislo & Orth, 2012; World Health Organization, 2012). In the present study, we focus more broadly on the presence of depressive symptoms, as research has shown that even subclinical forms of depression may be detrimental (e.g., Orth, Robins, & Roberts, 2008; Petersen et al., 1993). Various risk factors for the development of depressive symptoms have been identified (e.g., psychological, cognitive, biological, and environmental factors; Petersen et al., 1993). In the present paper we focus on psychological risk factors and on dynamics of self-esteem in particular. Among other frameworks, cognitive theories of depression (Beck, 1967) have identified low self-esteem as an important psychological risk factor for depressive symptoms (e.g., Baumeister, Campbell, Krueger, & Vohs, 2003; Orth, Robins, Trzesniewski, Maes, & Schmitt, 2009).

In addition, building on a heterogeneous view on self-esteem (Heppner & Kernis, 2011), researchers have argued that other self-esteem aspects, beyond level of self-esteem, need to be considered as psychological risk factors for depressive symptoms. In particular, the concept of contingent self-esteem is potentially important (Cambron, Acitelli, & Pettit, 2009). Contingent self-

esteem refers to the degree to which one's self-esteem depends on meeting particular standards and has been shown to predict depressive symptoms (Burwell & Shirk, 2006; Sargent, Crocker, & Luhtanen, 2006). Some scholars even assume that contingent self-esteem may predict depression more strongly than one's level of self-esteem (Burwell & Shirk, 2006, 2009; Crocker & Wolfe, 2001). Using three-wave longitudinal data, we aim to contribute to previous research by examining the unique and combined longitudinal relations between two aspects of self-esteem (i.e., self-esteem level and contingent self-esteem) and depressive symptoms.

With regard to the temporal order of self-esteem level and depressive symptoms, two main theoretical models have been proposed (Orth et al., 2008): the vulnerability model and the scar model. In the vulnerability model, low self-esteem predicts increases in depressive symptoms over time. In the scar model, depressive symptoms predict decreases in self-esteem over time. Importantly, these two models are not mutually exclusive: Level of self-esteem and depressive symptoms may influence each other through a transactional developmental process. In a recent meta-analysis of 77 studies focusing on the longitudinal relation between level of self-esteem and depressive symptoms, Sowislo and Orth (2012) found consistent support for the vulnerability model, and only weak support for the scar model. Specifically, they showed that the average effect of level of self-esteem on depressive symptoms was significantly stronger than the reverse effect.

Although it has been shown that high levels of self-esteem are generally protective against depressive symptoms and health problems more generally (e.g., Marsh & Craven, 2005), some studies counter intuitively showed that high levels of self-esteem can

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also relate to maladjustment, in particular anger and aggression (e.g., Baumeister et al., 2003). To explain these inconsistent findings, researchers have begun to examine other aspects within the broader self-esteem construct, viewing self-esteem as a heterogeneous construct (Bos, Huijding, Muris, Vogel, & Biesheuvel, 2010; Heppner & Kernis, 2011).

Among the multiple self-esteem aspects scholars have mentioned (e.g., contingent self-esteem, self-esteem instability, and implicit self-esteem), we focus on contingent self-esteem apart from focusing on level of self-esteem. Contingent self-esteem is assumed to play a particularly influential role in the development of depressive symptoms (Burwell & Shirk, 2009). Individuals low on contingent self-esteem exhibit a form of self-esteem that does not depend on being successful and is not threatened by failure (Kernis, 2003). Individuals high on contingent self-esteem, on the other hand, feel they have to fulfill certain criteria to be able to perceive themselves as good and worthy. Although this orientation may lead to self-esteem boosts when they reach these self-related standards, it may also result in sharp self-esteem drops when these standards are not reached, which may increase the risk for developing depressive symptoms (e.g., Crocker, Karpinski, Quinn, & Chase, 2003; Okada, 2010). Furthermore, because failure with regard to self-related goals is closely tied to one's worth as a person, it may not be easily dismissed (Crocker & Wolfe, 2001). This unrelenting focus on personal failure and inadequacy in individuals high on contingent self-esteem is expected to result in stress and ineffective coping strategies (e.g., internal attributions), which may also eventually lead to a state of depression (Crocker, 2002).

In line with these theoretical propositions, several studies have indeed shown that contingent self-esteem is positively related to depressive symptoms (e.g., Bos et al., 2010; Burwell & Shirk, 2006; Soenens & Duriez, 2012). However, only one of these studies (Burwell & Shirk, 2006) employed a longitudinal design. Specifically, contingent self-esteem was found to positively predict early adolescents' levels of depressive symptoms 6–8 months later, whereas depressive symptoms did not predict subsequent levels of contingent self-esteem. However, the study by Burwell and Shirk (2006) only consisted of two data waves, preventing them from checking the replicability of their longitudinal associations. Moreover, these researchers did not examine the unique cross-lagged effect of contingent self-esteem above and beyond self-esteem level, nor did they create latent factors to control for possible measurement error.

In the present study, we aimed to contribute to the literature by examining the longitudinal relations between contingent self-esteem and depressive symptoms, using a three-wave dataset and controlling for measurement error. We also included level of self-esteem to test for unique predictive effects. We studied our hypotheses in a sample of university freshmen because the transition to higher education requires individuals to adjust to many new demands in various life domains (Gall, Evans, & Bellerose, 2000). Such a challenge may result in particularly heightened levels of depressive symptoms and more visible negative effects of contingent self-esteem (Dyson & Renk, 2006).

In line with previous research regarding the longitudinal link between level of self-esteem and depressive symptoms (Sowislo & Orth, 2012), we expected to find strong support for the vulnerability model and weaker support for the scar model. In particular, we expected the effect of self-esteem level on depressive symptoms to be stronger than the effect of depressive symptoms on self-esteem level. Regarding contingent self-esteem, in line with the findings of Burwell and Shirk (2006) for early adolescents, we hypothesized a unidirectional effect of contingent self-esteem on depression.

However, the main goal of the present study was to investigate the *unique longitudinal effects* of contingent self-esteem and level of

self-esteem on depressive symptoms, which should provide important new information on the possible psychological risk factors of depressive symptoms. Previous research has shown that, although level of self-esteem and contingent self-esteem are clearly distinct constructs (e.g., Burwell & Shirk, 2006; Heppner & Kernis, 2011; Kernis, 2003; Sargent et al., 2006), they show a moderate, negative association (e.g., Bos et al., 2010; Crocker & Luhtanen, 2003; Kernis, Lakey, & Heppner, 2008). This association indicates that individuals with lower self-esteem levels are generally more prone to higher contingent self-esteem. Accordingly, any effect of contingent self-esteem could be carried by its association with low levels of self-esteem or vice versa. Therefore, we examined whether contingent self-esteem plays a role in the prediction of depressive symptoms in addition to level of self-esteem. It seems important to examine the unique predictive role of contingent self-esteem because some empirical findings suggest that contingent self-esteem may not have a unique effect. For instance, in a cross-sectional study with early adolescents, Bos et al. (2010) found that contingent self-esteem did not relate to depression when self-esteem level was taken into account. They did find a significant interaction between both aspects of self-esteem on depression, suggesting that low levels of self-esteem combined with high contingent self-esteem were associated with particularly high levels of depression. Because the study by Bos et al. (2010) was among the first to document such an interaction between level of self-esteem and contingent self-esteem in the prediction of depression, we decided to further explore this interaction.

2. Method

2.1. Participants and procedure

All freshman psychology students at a large university in the Dutch-speaking part of Belgium were invited to participate in three collective measurement waves ($N = 530$) with a 3-month interval between each wave. Prior to Time 1, participants signed a standard consent form in which they were informed that they could refuse or discontinue participation at any time. A total of 500 students agreed to participate and thereby earned course credit. As we explicitly intended to focus on emerging adult freshmen, students older than 30 ($n = 5$) and one student with no indication of age were excluded from the current analyses. Of the final sample of 494 students, 455 students participated at Time 1, 447 students participated at Time 2, and 418 students participated at Time 3. 383 students participated in all waves, 60 students participated in two measurement waves, and 51 students participated in only one wave. The mean age in the final sample at Time 1 was 18.41 years ($SD = 1.43$; range 17–29). Most participants (84%) were female. In the final sample, 11.16% of the data were missing. Participants with and without complete data were compared using Little's (1988) Missing Completely At Random (MCAR) test. This resulted in a normed chi square (i.e., χ^2/df) of 1.49, indicating good fit between sample scores with and without data imputation (Bollen, 1989). Hence, analyses were performed for the whole sample using the Full Information Maximum Likelihood (FIML) procedure (Schafer & Graham, 2002).

2.2. Measures

2.2.1. Level of self-esteem

Level of self-esteem was measured with a Dutch version of the 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965; Van der Linden, Dijkman, & Roeders, 1983; e.g., "On the whole, I am satisfied with myself"). Items were answered on a 5-point Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). After

rescaling the reversed items, higher scores indicated higher levels of self-esteem (actual range of averaged scores 1.20–5.00). Many studies have attested to the reliability and predictive validity of the Dutch version of the RSES in college student samples (e.g., Klimstra, Luyckx, Hale, Goossens, & Meeus, 2010; Luyckx, Schwartz, Goossens, Soenens, & Beyers, 2008; Luyckx et al., 2007). In the present study, Cronbach's alphas were .92, .92 and .93 at Times 1, 2, and 3, respectively.

2.2.2. Contingent self-esteem

Contingent self-esteem was measured with a Dutch version of the 15-item Contingent Self-esteem Scale (CSS; Paradise & Kernis, 1999; Soenens & Duriez, 2012; see appendix for the full set of items), answered on a 5-point Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). After rescaling the reversed items, higher scores indicated higher contingent self-esteem (actual range of averaged scores 1.47–5.00). The CSS has been shown to relate to other measures of fragile self-esteem, including diary measures of self-esteem variability (Heppner & Kernis, 2011; Kernis et al., 2008). Also, this scale has been shown to relate to measures of theoretically overlapping constructs, such as narcissism and low authenticity (Kernis & Goldman, 2006). In terms of predictive validity, it has been shown to relate to different manifestations of defensiveness much in the same way as other markers of fragile self-esteem as well as to indicators of ill-being and psychopathology (Kernis et al., 2008; Neighbors, Larimer, Geisner, & Knee, 2004; Patrick, Neighbors, & Knee, 2004; Soenens & Duriez, 2012; Zeigler-Hill, Besser, & King, 2011). Soenens and Duriez (2012) further provided evidence for the predictive and discriminant validity of the Dutch version of the CSS in an adult sample. Cronbach's alphas in the current study were .81, .83 and .82 at Times 1, 2, and 3, respectively.

2.2.3. Depressive symptoms

To measure depressive symptoms we used the Dutch version of the 12-item shortened Center for Epidemiologic Studies Depression (CESD) scale (Hooge, Decaluwé, & Goossens, 2000; Roberts & Sobhan, 1992). This scale assessed how often students experienced each of 12 symptoms during the past week on a 4-point Likert scale ranging from 0 (*seldom or never*) to 3 (*most of the time or always*). After rescaling the reversed items, higher total scores indicated higher levels of depressive symptoms (actual range of averaged scores 0.00–2.75). Previous research has shown sufficient evidence for the reliability and the discriminant and predictive validity of the Dutch version of the CESD scale in undergraduate student samples (e.g., Duriez, Klimstra, Luyckx, Beyers, & Soenens, 2012; Klimstra et al., 2010; Soenens, Luyckx, Vansteenkiste, Duriez, & Goossens, 2008; Vanhalst, Luyckx, Teppers, & Goossens, 2012). Cronbach's alphas in the present study were .85, .87 and .87 at Times 1, 2, and 3 respectively.

2.3. Data-analyses

We used a cross-lagged structural equation modeling (SEM) approach in Mplus Version 6.1 (Muthén & Muthén, 1998–2010). To correct for measurement error, we created latent factors with multiple indicators for all study variables (i.e., level of self-esteem, contingent self-esteem, and depressive symptoms). We randomly selected three parcels of items per construct and used these as indicators (Marsh, Hau, Balla, & Grayson, 1998). To test whether both aspects of self-esteem were empirically distinguishable, we first compared confirmatory factor models with one factor versus two separate factors. Testifying to the distinctiveness of the measures for level of self-esteem and contingent self-esteem, the two-factor model showed a better fit than the one-factor model at all time-points [$\Delta\chi^2_{T1}(1) = 350.64, p < .0001$; $\Delta\chi^2_{T2}(1) = 431.36,$

$p < .000$; $\Delta\chi^2(1) = 405.76, p < .0001$]. Longitudinal invariance of the factor loadings was then tested in a measurement model, including all main variables, before proceeding with the structural models. In the structural phase, we analyzed two separate models in which we examined the separate predictive effects of level of self-esteem and contingent self-esteem on depressive symptoms, as well as a final model to examine the unique predictive effects of both self-esteem aspects. Standard fit indices were used to assess adequate model fit whenever possible (Kline, 2005). Nested models were compared using chi-square difference tests.

3. Results

3.1. Preliminary analyses

Table 1 presents means, standard deviations, and intercorrelations. Relatively high mean scores were found for level of self-esteem and contingent self-esteem, whereas relatively low mean scores were observed for depressive symptoms. All correlations were in the expected direction: Self-esteem level correlated negatively with contingent self-esteem and depressive symptoms, both concurrently and across time. Contingent self-esteem was systematically positively correlated with depressive symptoms. Zero-order correlations showed moderate to strong stability for all variables.

Independent *t*-tests yielded significant gender differences for depressive symptoms at Time 2 and for contingent self-esteem at all time points (see Table 1). Female students reported more depressive symptoms than male students at Time 2 and scored significantly higher on contingent self-esteem at all time points. Therefore, we controlled for mean-level gender differences in all structural models.

3.2. Measurement models

In a first model, all factor loadings were allowed to vary over time. In this model, all factors were allowed to correlate with each other and the uniquenesses of corresponding indicators were allowed to correlate over time. Overall, this model showed a good fit (see Table 2). In the second model, the factor loadings of corresponding indicators were constrained to be equal over time. To test for invariance, we examined whether the second, more parsimonious model would have an equally good fit as the first model. Because model fit was not significantly reduced by adding the longitudinal constraints, we could conclude that invariance was established [$\Delta\chi^2(12) = 15.77, p = .20$]. We therefore proceeded with this more parsimonious model as the baseline model for our structural models.

In the baseline measurement model, level of self-esteem had a significantly negative concurrent relationship with depressive symptoms at all time points (see Table 3). Contingent self-esteem, on the other hand, had a significantly positive concurrent relationship with depressive symptoms at each time point. Finally, both self-esteem constructs were negatively related to each other at all time points.

3.3. Structural models

To test whether the structural paths were longitudinally invariant, we compared alternative structural models. In each of these models we controlled for mean-level gender differences by including direct effects from gender to all latent factors. Building on the baseline measurement model, we added structural paths, including both stability and cross-lagged paths. First, we examined unconstrained models in which we allowed the structural coefficients

Table 1
Intercorrelations, means, and standard deviations for all variables.

Variable	1	2	3	4	5	6	7	8	9
1. Level of self-esteem 1	–								
2. Level of self-esteem 2	.78*	–							
3. Level of self-esteem 3	.69*	.77*	–						
4. Contingent self-esteem 1	–.36*	–.27*	–.22*	–					
5. Contingent self-esteem 2	–.35*	–.34*	–.27*	.72*	–				
6. Contingent self-esteem 3	–.35*	–.31*	–.26*	.65*	.72*	–			
7. Depression 1	–.57*	–.51*	–.46*	.32*	.26*	.28*	–		
8. Depression 2	–.48*	–.59*	–.53*	.25*	.26*	.22*	.53*	–	
9. Depression 3	–.43*	–.48*	–.59*	.23*	.17*	.23*	.44*	.50*	–
<i>M</i>	3.77	3.79	3.93	3.47	3.51	3.45	0.92	0.91	0.86
<i>SD</i>	0.72	0.71	0.74	0.47	0.48	0.48	0.52	0.55	0.55
<i>N</i>	454	447	418	454	447	418	449	446	417
<i>M</i> women	3.75	3.78	3.94	3.52	3.56	3.49	0.93	0.94	0.87
<i>SD</i> women	0.73	0.72	0.74	0.46	0.47	0.47	0.53	0.57	0.56
<i>M</i> men	3.87	3.89	3.87	3.18	3.23	3.19	0.85	0.78	0.82
<i>SD</i> men	0.62	0.62	0.75	0.46	0.48	0.48	0.50	0.39	0.50
<i>t</i> -test	1.22	1.21	–0.60	–5.58**	–5.53**	–4.67**	–1.11	–2.82*	–0.68

Note.
* $p < .01$.
** $p < .001$.

Table 2
Fit indices for measurement and structural models.

Models	Chi square (df)	RMSEA	90% BI of RMSEA	CFI	SRMR
Measurement model					
<i>Unique effects</i>					
Model 1 (free)	355.205 (261) [†]	.027	[.019–.034]	.990	.037
Model 2 (constrained)	370.975 (273) [†]	.027	[.020–.034]	.989	.041
Structural models					
<i>Level of self-esteem</i>					
Model 3 (free)	205.300 (126) [†]	.036	[.027–.044]	.988	.035
Model 3 (constrained)	209.232 (130) [†]	.035	[.026–.044]	.988	.038
<i>Contingent self-esteem</i>					
Model 4 (free)	188.588 (126) [†]	.032	[.022–.041]	.987	.048
Model 4 (constrained)	191.748 (130) [†]	.031	[.021–.040]	.987	.049
<i>Unique effects</i>					
Model 5 (free)	443.275 (300) [†]	.031	[.025–.037]	.984	.045
Model 5 (constrained)	451.367 (309) [†]	.031	[.024–.036]	.985	.046

Note.
† $p < .001$.

Table 3
Standardized within-time correlations.

	Time 1		Time 2		Time 3	
	LSE	CSE	LSE	CSE	LSE	CSE
<i>Model 2 (Unique effects)</i>						
Level of self-esteem (LSE)	–	–	–	–	–	–
Contingent self-esteem (CSE)	–.41*	–	–.40*	–	–.28*	–
Depressive symptoms	–.63*	0.39*	–.65*	0.33*	–.62*	.27*

Note.
* $p < .001$.

to vary freely across time. Overall, model fit was good (see Table 2). Next, we estimated models in which we constrained the (unstandardized) structural coefficients to be equal across time. Because model fit was not significantly reduced by adding these longitudinal constraints, we proceeded with the more parsimonious constrained models [$\Delta\chi^2(4) = 3.93, p = .42$ for Model 3 (level of self-esteem), $\Delta\chi^2(4) = 3.16, p = .53$ for Model 4 (contingent self-esteem), and $\Delta\chi^2(9) = 8.09, p = .52$ for Model 5 (unique effects model)].

Results for the final models are graphically represented in Figs. 1–3 and 95% confidence intervals for the corresponding stan-

dardized parameter estimates are reported in Table 4. First, the constrained models indicated moderate to high rank-order stability. Second, controlling for within-time correlations and stability, reciprocal negative effects were found between level of self-esteem and depressive symptoms (see Fig. 1), even when adding the effect of contingent self-esteem (see Fig. 3). In contrast, the observed unidirectional positive effect of contingent self-esteem on subsequent depressive symptoms (see Fig. 2) became non-significant when the effect of self-esteem level was added (see Fig. 3). Furthermore, results yielded a significant unidirectional negative effect of prior self-esteem level on subsequent contingent self-esteem in the unique effects model. Following the procedure for cross-lagged effect sizes as used by Orth et al. (2008), we calculated the effect sizes for our significant cross-lagged effects. More specifically, we calculated *z*-scores by dividing the unstandardized coefficients of these effects by their standard errors and then we used a formula of Rosenthal (1994) to obtain effect sizes in the *r*-metric. The resulting scores indicated small effect sizes for the effect of level of self-esteem on contingent self-esteem (–0.12) and for the effect of depressive symptoms on level of self-esteem (–0.10), but a medium effect size for the effect of level of self-esteem on depressive symptoms (–0.23).

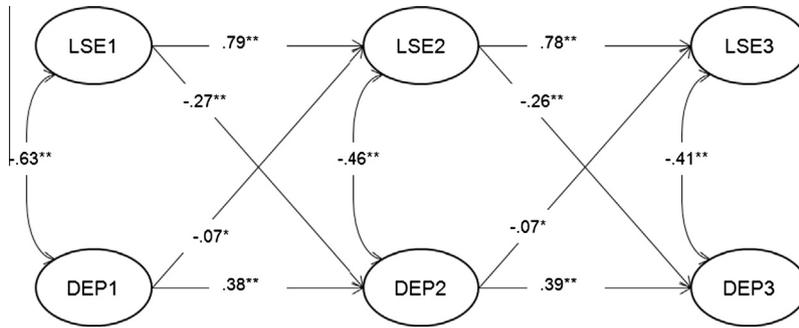


Fig. 1. Standardized stability and cross-lagged coefficients for the constrained cross-lagged model with level of self-esteem and depressive symptoms (Model 3). LSE = level of self-esteem, DEP = depressive symptoms. * $p < .05$. ** $p < .001$.

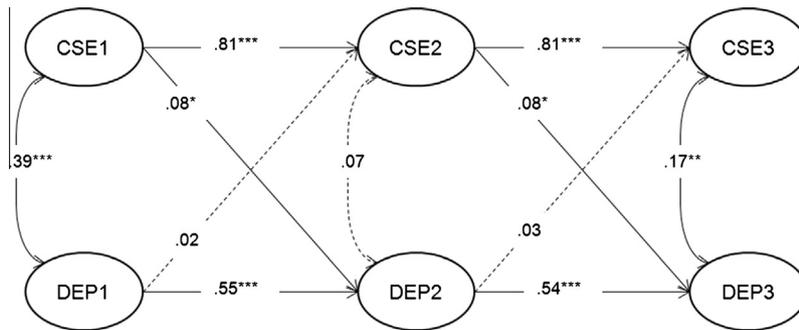


Fig. 2. Standardized stability and cross-lagged coefficients for the constrained cross-lagged model with contingent self-esteem and depressive symptoms (Model 4). CSE = contingent self-esteem, DEP = depressive symptoms. * $p < .05$. ** $p < .01$. *** $p < .001$.

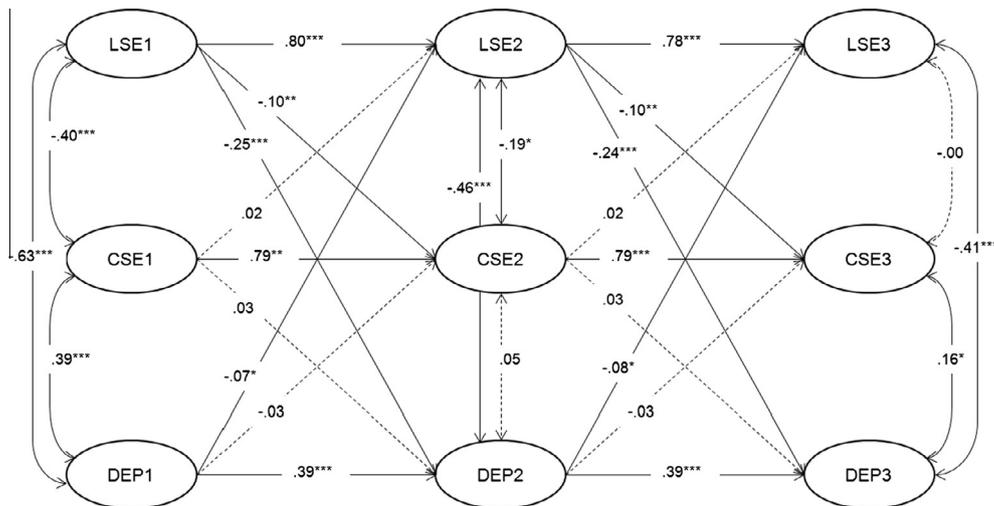


Fig. 3. Standardized stability and cross-lagged coefficients for the constrained cross-lagged model with level of self-esteem and contingent self-esteem and depressive symptoms (Model 5). LSE = level of self-esteem, CSE = contingent self-esteem, DEP = depressive symptoms. * $p < .05$. ** $p < .01$. *** $p < .001$.

Additionally, regarding the reciprocal effects between level of self-esteem and depressive symptoms, we tested whether the vulnerability effect (self-esteem → depressive symptoms) was significantly stronger than the scar effect (depressive symptoms → self-esteem) by estimating a model in which these particular cross-lagged paths were constrained to be equal. Results showed a trend towards a stronger vulnerability effect, although the difference was not statistically significant ($\Delta\chi^2(1) = 2.93, p = .09$). Finally, using the XWITH command in Mplus (Little, Bovaird, & Widaman, 2006), we checked for significant latent interaction effects between self-esteem and contingent self-esteem on depressive symptoms, but these effects were not significant.

4. Discussion

In line with theorizing and research viewing self-esteem as a heterogeneous construct (Heppner & Kernis, 2011), the present study focused on level of self-esteem and contingent self-esteem as two distinct psychological risk factors for developing depressive symptoms in university freshmen. Importantly, our study is the first to examine the relative predictive power of these two aspects of self-esteem for depressive symptoms over time.

Regarding the longitudinal link between level of self-esteem and depressive symptoms, our findings provided support for a reciprocal model with vulnerability as well as scar effects – even

Table 4

Confidence intervals for standardized parameter estimates of the cross-lagged effects.

	95% Confidence intervals
<i>Model 3 (constrained)</i>	
LSE1 → DEP2	[−.36, −.18]
LSE2 → DEP3	[−.35, −.17]
DEP1 → LSE2	[−.14, −.01]
DEP2 → LSE3	[−.14, −.01]
<i>Model 4 (constrained)</i>	
CSE1 → DEP2	[.01, .16]
CSE2 → DEP3	[.01, .16]
DEP1 → CSE2	[−.03, .08]
DEP2 → CSE3	[−.03, .08]
<i>Model 5 (constrained)</i>	
LSE1 → DEP2	[−.35, −.16]
LSE2 → DEP3	[−.34, −.15]
LSE1 → CSE2	[−.18, −.03]
LSE2 → CSE3	[−.17, −.03]
CSE1 → LSE2	[−.03, .08]
CSE2 → LSE3	[−.03, .08]
CSE1 → DEP2	[−.05, .11]
CSE2 → DEP3	[−.05, .11]
DEP1 → LSE2	[−.14, −.01]
DEP2 → LSE3	[−.14, −.01]
DEP1 → CSE2	[−.11, .04]
DEP2 → CSE3	[−.11, .04]

Note. LSE = level of self-esteem, CSE = contingent self-esteem, and DEP = depressive symptoms.

when controlling for within-time correlations, stability, and contingent self-esteem. These findings suggest not only that low levels of self-esteem may be an important psychological risk factor for developing depressive symptoms, but also that higher levels of depressive symptoms may result in more dysfunctional self-evaluative processes. These findings are in line with the conclusions from a recent meta-analysis performed by Sowislo and Orth (2012), although we could not fully replicate the finding that the vulnerability effect was significantly stronger than the scar effect.

Regarding the prospective effect of contingent self-esteem on depressive symptoms, results yielded the expected unidirectional positive effect of contingent self-esteem on subsequent depression levels, even when controlling for within-time correlations and stability. It appears that university freshmen who feel they have to relentlessly fulfill criteria to feel good about themselves have higher levels of depression 3 months later. The present findings thereby extend the results of Burwell and Shirk (2006) to late adolescence and further confirm theoretical assumptions referring to contingent self-esteem as an important vulnerability factor for depression (Bos et al., 2010; Burwell & Shirk, 2006; Kuiper & Olinger, 1986; Sargent et al., 2006). Additionally, they highlight the need to further study the effect of contingent self-esteem and other aspects of self-esteem on depressive symptoms and other relevant psychosocial outcomes.

However, the main contribution of the present study is that we studied the effect of contingent self-esteem on depressive symptoms while also controlling for self-esteem level. Some scholars have hypothesized that contingent self-esteem may even be a stronger predictor than self-esteem level (e.g., Burwell & Shirk, 2006; Sargent et al., 2006). In our study, however, we did not find that contingent self-esteem significantly predicted depressive symptoms when we took students' self-esteem level into account. Even in terms of concurrent associations, the relationship with depressive symptoms was weaker for contingent self-esteem than for level of self-esteem. It seems that, at least with regard to the short-term development of depressive symptoms in university freshmen, self-esteem level plays a more important role than the degree to which self-esteem is more or less contingent. This is in

line with the cross-sectional findings of Bos et al. (2010) who also found no unique effect of contingent self-esteem on depressive symptoms when taking self-esteem level into account. Unlike Bos and colleagues, we did not find interactive effects between self-esteem level and contingent self-esteem.

Although our findings seem to suggest that the role of contingent self-esteem is modest, they do not exclude the possibility that contingent self-esteem may have a unique predictive effect beyond level of self-esteem on other (internalizing) psychopathology outcomes. Bos et al. (2010), for instance, found unique cross-sectional effects of early adolescents' contingent self-esteem on anxiety and eating problems, beyond any effects of self-esteem level. Thus, our findings call for more longitudinal research examining the relative effects of different self-esteem aspects. Additionally, considering the multidimensional nature of depression risk factors, future research should address how the two aspects of self-esteem interact with other factors in predicting depressive symptoms. First, future research could focus on the interaction with stress and negative life events. One possible explanation for the relatively stronger longitudinal effect of self-esteem level on depressive symptoms, compared to contingent self-esteem, is that level of self-esteem relates to stress and negative life events in a relatively more proactive fashion (i.e., stress generation). It is possible that people with low self-esteem actively contribute to negative life events and feelings of stress that, in turn, increase the risk for depressive symptoms. In contrast, higher contingent self-esteem may relate to depression in a relatively more conditional fashion. That is, it may work according to the principle of diathesis-stress, such that it only conveys vulnerability to depressive symptoms when it is combined with negative life events or stress (Burwell & Shirk, 2006).

Second, researchers may also want to study the interaction between several self-esteem aspects and personality. Some studies have already shown that individuals scoring high on specific personality dimensions, such as neuroticism and narcissism, may be particularly prone to high contingent self-esteem (e.g., Collins & Stukas, 2008; Crocker & Luhtanen, 2003; Meier, Orth, Denissen, & Kühnel, 2011). However, more research into the specific interactions with multiple self-esteem aspects in the prediction of various outcomes is necessary. For instance, the link between contingent self-esteem and depression may be more pronounced for highly neurotic or narcissistic individuals.

4.1. Limitations

Despite the significance of its findings, the present study has some limitations, which should be addressed in future research. First of all, our sample mainly consisted of female psychology students who recently made the transition to higher education. Future research should investigate whether the current findings generalize to more diverse populations in terms of gender and educational background. Greater response variability and higher levels of depressive symptoms may be found in a more general community sample (as compared to a sample of relatively highly functioning university students) or in educational systems with extremely high levels of pressure to perform well in school, such as Chinese high schools (Li & Prevatt, 2008). This could then result in a stronger predictive effect of contingent self-esteem in these samples. Additionally, it may be interesting to examine our hypotheses in a more stable educational period, to see if the scar effect of depressive symptoms on level of self-esteem would be weakened when self-esteem is less fragile.

Second, we used relatively short time-intervals to study our hypotheses. Future research should investigate whether the relations, as found in our study, hold across longer time-periods. Additionally, the non-significant unique effect of contingent

self-esteem on depressive symptoms may accumulate over time, possibly leading to significant unique predictive effects when studying longer time-periods. Nevertheless, the current short-term intervals were ideally suited to inform us on the short-term longitudinal relationships between contingent self-esteem, level of self-esteem and depressive symptoms and to examine what happened to adolescents immediately after they entered university.

Third, in addition to global contingent self-esteem and level of self-esteem, it would be interesting to study the predictive effect of domain-specific forms of (contingent) self-esteem in future research. For instance, university students scoring high on contingent self-esteem in the social or academic domain may be particularly likely to develop depressive symptoms after entering into higher education because of the many changes in their social relations and the new academic demands.

Finally, all study variables were measured using self-report questionnaires. Regarding contingent self-esteem in particular, it may be interesting to compare results from self-report measures with results from more direct measures of the dependency between self-esteem and certain events (e.g., through the use of diary methods) in future research. Additionally, future studies may benefit from taking other sources of information into account (e.g., parent reports). On the other hand, when predicting internalizing symptoms, such as depressive symptoms, students' view on themselves may be most informative.

4.2. Conclusion

Regardless of these limitations, our study extends previous research by examining the relative predictive effect of two aspects of self-esteem on depressive symptoms in a sample of university freshmen using a three-wave longitudinal dataset. Contingent self-esteem positively predicted subsequent depressive symptoms, but when controlling for self-esteem level, only self-esteem level was found to predict changes in depressive symptoms. Although this effect of self-esteem level on depressive symptoms was only medium in size, we need to take into account that depression is a multiply determined mental health condition and that we found this effect while controlling for all within-time associations, stability paths, and contingent self-esteem. Therefore, we recommend paying more attention to first-year university students' self-esteem. Students who view themselves more positively are more likely to develop lower levels of depressive symptoms and contingent self-esteem, which should make their adjustment to higher education more trouble-free. This may, in turn, lead to higher levels of well-being in the long run. Hence, in line with the demonstrated effectiveness of interventions specifically aimed at enhancing adolescents' lowered self-esteem (Haney & Durlak, 1998), counselors trying to reduce depressive symptoms in adolescents may benefit from focusing on increasing these adolescents' self-esteem level.

Appendix A. Full set of items for the Contingent Self-esteem Scale (Paradise & Kernis, 1999)

1. An important measure of my worth is how competently I perform.
2. Even in the face of failure, my feelings of self-worth remain unaffected.
3. A big determinant of how much I like myself is how well I perform up to the standards that I have set for myself.
4. My overall feelings about myself are heavily influenced by how much other people like and accept me.
5. If I get along well with somebody, I feel better about myself overall.

6. An important measure of my worth is how physically attractive I am.
7. My overall feelings about myself are heavily influenced by what I believe other people are saying or thinking about me.
8. If I am told that I look good, I feel better about myself in general.
9. My feelings of self-worth are basically unaffected when other people treat me badly.
10. An important measure of my worth is how well I perform up to the standards that other people have set for me.
11. If I know that someone likes me, I do not let it affect how I feel about myself.
12. When my actions do not live up to my expectations, it makes me feel dissatisfied with myself.
13. Even on a day when I don't look my best, my feelings of self-worth remain unaffected.
14. My overall feelings about myself are heavily influenced by how good I look.
15. Even in the face of rejection, my feelings of self-worth remain unaffected.

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