ORIGINAL PAPER

Differentiation of Self and Well-being: The Moderating Effect of Self-construal

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Abstract Differentiation of self is defined at the interpersonal level as the ability to achieve emotional autonomy from the family of origin while maintaining a degree of connectedness and at the intrapsychic level as the capacity to distinguish thoughts from feelings (Kerr and Bowen (1988) Family evaluation. W. W. Norton and Company, New York). Research indicates that differentiation of self is positively related to well-being (Skowron et al. (2009) Contemp Fam Ther 31:3–18. doi:10.1007/s10591-008-9075-1; Murdock and Gore (2004) Contemp Fam Ther 26(3):319–335. doi:10.1023/B:COFT.0000037918.53929.18), and that cultural forces of individualism and collectivism may affect this relationship (Chung and Gale (2006) Contemp Fam Ther 28:367–381. doi:10.1007/s10591-006-9013-z). However, no previous studies have looked at the impact of self-construal, or how one views the self in relation to others, on the relationship between differentiation of self and well-being at the individual level. The purpose of this study was to determine if self-construal moderates the relationship between differentiation of self and well-being among US college students, with a focus on within-culture variation. The results indicated that differentiation of self is positively correlated with independent self-construal and negatively correlated with interdependent self-construal. In addition, independent self-construal moderates the relationship between differentiation of self and well-being such that high levels of independent self-construal serve as a buffer to psychological symptoms for those with low levels of differentiation of self. We also found that fusion and emotional reactivity, aspects of differentiation of self, mediate the relationship between interdependent self-construal and well-being.

Keywords Bowen · Differentiation · Self-construal · Interdependent · Fusion

Introduction

Kerr and Bowen (1988) proposed that, over the course of our individual development, natural forces within the self push us to separate from our family of origin while simultaneously acting to keep us connected to our family. The ability to balance these forces, the drive to gain emotional autonomy from the family of origin and that toward togetherness, is called differentiation of self from the family of origin. Those with high differentiation of self have the ability to distinguish thoughts from feelings (Kerr and Bowen 1988). They have a stable sense of self, react calmly in emotional situations, think things through, and make decisions based on their own beliefs and intellect. In addition, they are able to be emotionally close to others yet maintain a solid sense of self. Individuals with low levels of differentiation of self have difficulty distinguishing their thoughts from their feelings and often react to other people with unnecessary emotion. They have unstable senses of self, have difficulty adhering to their convictions when pressured by others, and evidence extreme reactions to important others, either behaving as if emotionally inseparable from them or cutting them off completely.

Skowron and Schmitt (2003) identified four aspects of differentiation of self: emotional reactivity, I-position, fusion, and emotional cut-off. Emotional reactivity is characterized by automatic emotional responses to others and difficulty staying calm in emotionally intense situations.

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I-position is the ability to make decisions, adhere to one's convictions despite external pressure, and to claim ownership of one's feelings and thoughts. Fusion is characterized by an unstable sense of self that leads an individual to become emotionally overinvolved with family members or significant others and take on their attitudes, values, and opinions without question. Emotional cut-off occurs when the individual emotionally distances the self from others.

Although research has accumulated supporting Bowen's hypotheses about differentiation of self, some have suggested that the construct is culturally biased (Chung and Gale 2006, 2009; Gushue and Constantine 2003; Tamura and Lau 1992), promoting a view of psychological health that overemphasizes individualism. Some research has investigated the relations among differentiation and well-being in cultures thought to be collectivist in nature, finding mixed results (Chung and Gale 2006; Tuason and Friedlander 2000). The goal of our study was to attempt to provide a more complex understanding of the operation of differentiation of self by adding to the equation the degree to which the individual adopts surrounding cultural values regarding concepts of the self, known as self-construal.

Self-construal is defined as how one views the self in relation to others. Markus and Kitayama (1991) posited that there are two types of self-construal, independent and interdependent, which are closely tied to culture. Those raised in collectivist cultures typically have self-construals that are more interdependent and those raised in individualistic cultures tend to have self-construals that are more independent. However, self-construal is determined by more than the culture in which one is raised, such as the unique environment one is exposed to growing up, individual personality characteristics, and relationships with family members who may have differing values and beliefs than those of the dominant culture (Singelis 1994). Therefore, within any given society, whether collectivist or individualistic, there are individuals who have high levels of independent self-construal and other individuals who have high levels of interdependent self-construal. Singelis (1994) proposed that individuals within each culture have varying degrees of each type of self-construal, with one usually being more prominent than the other. Those who have high levels of independent self-construal see themselves as being a separate entity from others, with a sense of self that is stable across most contexts. They often view others as a source of comparison, and see their internal, private self as of the utmost importance. Those with high levels of interdependent self-construal still have a separate sense of self, but they see their relationships with others as a part of the self as well. They have a sense of self that is fluid and varies depending on the situation and their role in relation to others, and believe that relationships, adherence to expectations and roles, and togetherness are of highest importance. Those with high levels of interdependent self-construal tend to value group harmony over the individual self, whereas those with high levels of independent self-construal tend to value uniqueness and autonomy over group goals. The concept of self-construal can be distinguished from differentiation of self by looking at the expression of the constructs. Low differentiation of self results in difficulty tolerating chronic anxiety in one's relationships and efforts to control this anxiety by fusing with others or cutting off from others emotionally (Kerr and Bowen 1988). In contrast, the theory of self-construal indicates that there are two ways of viewing the self in relation to others, with neither view suggesting a level of ability to handle anxiety or tendency to have maladaptive emotional reactions to others (Singelis 1994).

Research on Self-construal and Well-being

Several studies have found a connection between self-construal and well-being. Kwan, Bond, and Singelis (1997) found that self-esteem was positively correlated with independence and negatively correlated with interdependence among US college students. Furthermore, life satisfaction and relationship harmony were both positively correlated with independence, but had no significant relationship with interdependence. Mak et al. (2011) investigated the effects of self-construal and sociotropy, which was defined as an exaggerated concern for what others think, dependency, and a need to please others, on depression and anxiety in samples of Asian Americans and European Americans. For both samples, they found that those with high levels of interdependence were more likely to have higher levels of sociotropy, anxiety, and depression. High levels of independence were negatively associated with sociotropy, anxiety, and depression for both samples. Norasakkunkit and Kalick (2002) also found a negative relationship between independence and depression among European Americans and Asian Americans.

Kwan et al. (1997) proposed that the negative correlation between interdependence and measures of well-being could be due to the conflict between maintaining interpersonal harmony and self-enhancement. Self-enhancement requires a degree of psychological separation from others that is unlikely to be found among those with high levels of interdependent self-construal. In addition, to refrain from perceiving the self in self-enhancing ways has functional value for those who see others as a part of the self and value group harmony (Norasakkunkit and Kalick 2002). To view one's self as being more well-off than others is counterintuitive when one views others as part of the self. This culturally invoked internalized tendency to refrain from self-enhancement may then lead to lower scores on measures of well-being because those with higher

levels of interdependent self-construal are unlikely to rate themselves as having higher well-being than others who are inherently part of their self-concept. In addition, the impulse to refrain from "rocking the boat" and promote group harmony outweighs the desire to enhance the self and see one's self as having higher well-being than others.

Research on Differentiation of Self and Well-being

Research has repeatedly shown that differentiation of self is positively correlated with well-being and negatively correlated with indices of distress (e.g., Elieson and Rubin 2001; Gubbins et al. 2010; Johnson and Buboltz 2000; Miller et al. 2004; Peleg-Popko 2002; Peleg and Yitzhak 2011). Skowron et al. (2009) demonstrated that higher differentiation of self was related to increased interpersonal and psychological well-being in college students. In addition, Murdock and Gore (2004) found that low levels of differentiation of self were a strong predictor of psychological distress. They also determined that differentiation of self moderated the relationship between perceived stress and psychological distress such that the relationship between perceived stress and psychological distress was stronger for those with lower levels of differentiation of self than it was for individuals higher in differentiation. Furthermore, we know that numerous factors, such as emotional support, perceived stress, and stressful life events can play a role in the relationship between differentiation of self and well-being (Krycak et al. 2012).

Research on Differentiation of Self and Self-construal

Very little research has been done on the relationship between differentiation of self and self-construal. Therefore, it is helpful to look at cross-cultural comparison studies in which one culture is assumed to be individualistic (where individuals are more likely to have high levels of independent self-construal) and the other is collectivist (more likely to have high levels of interdependent self-construal). Tuason and Friedlander (2000) sought to directly test the applicability of differentiation of self in what is thought to be a collectivist culture, the Phillipines. They found that low differentiation of self was associated with higher psychological distress in a Filipino sample, and that the Filipino sample displayed levels of differentiation of self similar to those of a US sample. This study demonstrated that the construct of differentiation of self, which emphasizes independence, is also relevant in societies that value interdependence.

Chung and Gale (2006) tested the cross-cultural validity of differentiation of self by measuring differentiation, self-esteem, and depressed mood in two samples of college students, one living in an individualistic culture (the United States) and the other living in a collectivist culture (South

Korea). They found that differentiation of self was positively correlated with well-being for both groups, but the US sample had higher levels of differentiation than the Korean sample on overall differentiation and the four components of emotional reactivity, I-position, fusion, and emotional cutoff. In addition, a larger amount of variance in self-esteem and depressed mood was accounted for by levels of differentiation in the US group compared to the Korean sample. Cross-culturally, the relationships between differentiation of self, self-esteem, and distress were the same, but in the collectivistic sample, they were simply weaker. Chung and Gale's (2006) work suggests that the effect of differentiation of self on well-being is weaker in collectivist cultures. This finding is consistent with Tamura and Lau's (1992) assertion that the culturally preferred direction for change for individuals who have higher levels of interdependent self-construal is toward integration into a family system, whereas individuals who have higher levels of independent self-construal are more likely to seek change by differentiating from the family system. In a later work, Chung and Gale (2009) point out that although this difference exists, both integration and differentiation are valued in both collectivist and individualistic cultures, but there is a difference in the degree of value between cultures. Therefore, for individuals with high levels of interdependent self-construal, who have a worldview that includes others as a part of the self, differentiation of self may play a lesser role in determining well-being than for those with lower levels of interdependent self-construal. Because individuals within cultures vary in terms of the degree to which they absorb cultural tendencies towards individualism and collectivism, that tendency, self-construal, may help to understand the relationships between differentiation and well-being within cultures.

Rationale and Hypotheses

Our research sought to evaluate whether self-construal has a moderating effect on the relationship between differentiation of self and well-being in a sample of US born college students. Based on Chung and Gales's (2006) findings that the relationship between differentiation of self and well-being was stronger for individuals who reside in individualistic cultures (and thus typically have higher levels of independent self-construal) than those who reside in collectivist cultures (and thus typically have higher levels of interdependent self-construal), it seems possible that if self-construal could account for the differences in the strength of relationships between cultures, that when looking at within-in culture variation in a US sample the relationship between differentiation of self and well-being will differ depending on levels of interdependence and independence. Research suggests that differentiation of self is a valid construct across

cultures (e.g., Tuason and Friedlander 2000); however, Chung and Gale's (2006) findings suggests that for individuals who view the self as intimately connected to others (those with high levels of interdependent self-construal) the relationship between differentiation of self and well-being may not be as strong. If this assumption is correct, it would imply that self-construal is moderating the relationship between differentiation of self and well-being such that differentiation of self is a stronger predictor of well-being for those high on independence than for those high on interdependence. In addition, criticism that differentiation of self is an individualistic construct more suited for those who highly value independence, which has been addressed at the macroculture level, comparing one culture to another (Chung and Gale 2006), should also be addressed at the individual level. In order to investigate these possibilities, we tested the following hypotheses:

Hypothesis 1 Consistent with findings that individuals from individualistic cultures have higher levels of differentiation than those living in less individualistic societies (Chung and Gale 2006), we hypothesized that independence is more strongly positively correlated with overall differentiation of self than is interdependence in a sample of US college students, with the correlation between overall differentiation of self and interdependence being positive but smaller than that of independence and differentiation of self or nonexistent. We also looked to see if the scores on the differentiation of self subscales were significantly related to levels of independence and interdependence in a sample of US college students.

Hypothesis 2 Several studies (e.g., Chung and Gale 2006; Tuason and Friedlander 2000; Gushue and Constantine 2003) provide evidence that differentiation of self is a valid construct for presumably interdependent individuals (i.e., those in cultures assumed to be collectivistic). Therefore, we hypothesized that differentiation of self will account for a significant portion of the variance in levels of well-being regardless of self-construal in a sample of US college students. This pattern will lend further support to the universal applicability of differentiation of self.

Hypothesis 3 Chung and Gale (2006) found that the relationship between differentiation of self and well-being was stronger for individuals who reside in individualistic cultures, who typically have higher levels of independence compared to the relationship found among individuals who lived a in presumably collectivistic culture. Considering that individuals with high levels of interdependent self-construal have a worldview that includes others as a part of the self, differentiation may not play as big a role in determining well-being as it might for those with lower levels of interdependent self-construal. Therefore, we

hypothesized that self-construal will moderate the relationship between overall differentiation of self and well-being such that the positive relationship between differentiation of self and well-being will be stronger for those with high levels of independent self-construal compared to those with low levels of independent self-construal. Likewise, the positive relationship between differentiation of self and well-being will be stronger for those with low levels of interdependent self-construal compared to those with high levels of interdependent self-construal.

Method

Participants

The participants were 296 US born student volunteers (71 males and 225 females) ranging in age from 18 to 62 ($M = 24.65$, $SD = 7.42$) who were enrolled in an urban Midwestern university. Out of the 296 participants, 214 of the participants identified as White/Caucasian or European American (72.3 %), 32 as Black or African American (10.8 %), 18 as Asian or Asian American (6.0 %), 12 as Hispanic or Latino/a (4.0 %), 12 as Multiracial (4.0 %), 4 as Native American/American Indian (1.4 %), 2 as Pacific Islander (.7 %), and 2 as Other (.7 %).

Procedure

Participants were recruited via an electronic link sent to university listservs and the psychology department's online research participant recruitment system. They were invited to complete measures presented in the following order: a demographic questionnaire, the Differentiation of Self Inventory-Short Form (DSI-SF; Drake and Murdock 2012), Self-Construal Scale (SCS; Singelis 1994), Hopkins Symptom Checklist 21 (HSCL-21; Green et al. 1988), and the Satisfaction With Life Scale (SWLS; Diener et al. 1985). Participation was voluntary and anonymous. As an incentive for participation, those who were recruited via university listservs were redirected to a separate, unconnected survey and offered the opportunity to enter a drawing for a gift card. Participants recruited via the psychology department's online research participant recruitment system received course credit for their participation.

Measures

Demographic Form

Participants provided information regarding age, sex, and race/ethnicity. Because we were interested in within-

culture variation, citizenship status was also collected in order to limit the sample to US born citizens.

Differentiation of Self

Differentiation of self from the family of origin was measured with the Differentiation of Self Inventory-Short Form (DSI-SF; Drake and Murdock 2012), a 20-item self-report measure based on the 46-item Differentiation of Self Inventory-Revised (DSI-R; Skowron and Schmitt 2003). Participants respond to DSI-SF items on a 6-point Likert-type scale from *not at all characteristic of me* (1) to *very characteristic of me* (6). The measure has four subscales that measure the intrapsychic, I-position (IP) and emotional reactivity (ER) and interpersonal, emotional cut-off (EC) and fusion with others (FO), dimensions of differentiation. Example items include "I'm fairly self-accepting" (IP), "At times, I feel as if I'm riding an emotional roller coaster" (ER), "I tend to distance myself when people get too close to me" (EC), and "I feel a need for approval from virtually everyone in my life" (FO). The scale yields a total differentiation score as well as scores for each of the four subscales, all of which were utilized in this study. Higher scores indicate higher levels of differentiation and for each subscale, higher differentiation according to that aspect (e.g., high scores on the fusion subscale connote less fusion, whereas higher scores on I-position indicate more I-position).

Drake and Murdock (2012) found a Cronbach's alpha of .88, and provided evidence of convergent and concurrent criterion validity by relating the DSI-SF with another measure of differentiation of self, the Level of Differentiation of Self Scale (Haber 2003) as well as measures of depression, self-esteem, anxiety, and stress. Internal consistency for the DSI-SF in this study was good, with a Cronbach's alpha of .73. Likewise, the DSI-SF subscales had good internal consistency in this study had Cronbach's alphas of .69 for FO, .78 for IP, .83 for EC, and .83 for ER.

Self-construal

Self-construal was assessed with Singelis' (1994) Self-Construal Scale, a 24-item self-report instrument, which contains two uncorrelated subscales that measure levels of independence (SCS-Indep; 12 items) and interdependence (SCS-Inter; 12 items). No overall score is provided; rather each participant is given two separate scores. The measure uses a 7-point Likert-type scale from *strongly disagree* (1) to *strongly agree* (7). An example of a question on the interdependence subscale is "My happiness depends on the happiness of those around me." An example of a question on the independence subscale is "I enjoy being unique and different from others in many respects." Singelis (1994)

found Cronbach's alphas of .76 and .69 for interdependence and independence respectively and provided evidence of construct validity by demonstrating that Asian Americans had higher interdependence than European Americans scores and that European Americans had higher independence scores than Asian Americans, relationships that are congruent with the scale's theoretical framework. He also gave evidence of predictive validity, showing that self-construal was a significant predictor of attributing causes to situational factors (consistent with high levels of interdependence), and was more predictive of attributing causes to situational factors than ethnicity alone. The interdependent subscale had good internal consistency in this study with a Cronbach's alpha of .72, and the independent portion of the scale had a Cronbach's alpha of .77.

Well-being

Well-being was measured with the Hopkins Symptom Checklist 21 (HSCL-21; Green et al. 1988) and the Satisfaction with Life scale (SWLS; first three items; Diener et al. 1985).

Hopkins Symptom Checklist 21 The Hopkins Symptom Checklist 21 (HSCL-21; Green et al. 1988) is a 21-item version of the original 58-item Hopkins Symptom Checklist (Derogatis et al. 1974). The instructions for the scale read "How have you felt during the past 7 days including today? Use the following scale to describe how distressing you have found these things over this time." Responses are measured on a 4-point Likert-type scale from *not at all* (1) to *extremely* (4). Some examples of items include "Trouble remembering things" and "Feeling blue." Higher scores indicate the report of more symptoms.

Green et al. (1988) found a Cronbach's alpha of .90 utilizing a sample of college students. Statistically significant differences have been found between clinical and nonclinical samples supporting the construct validity of the measure (Deane et al. 1992). Researchers have also demonstrated that HSCL-21 scores decrease over the course of psychotherapy, providing further evidence of construct validity (Deane et al. 1992). Concurrent validity has been provided by significant correlations between the HSCL-21 and other measures of psychological distress such as the State-Trait Anxiety Inventory Form Y (Spielberger 1983) and the Brief Hopkins Psychiatric Rating Scale (Derogatis 1978; Deane et al. 1992). Furthermore, Cepeda-Benito and Gleaves (2000) conducted confirmatory factor analyses on the HSCL-21 and determined that it was a valid measure of distress for European American, African American, and Latina/o college students. Internal consistency of the HSCL-21 was strong in this study with a Cronbach's alpha of .89.

Satisfaction with Life Scale The Satisfaction With Life Scale (SWLS) is a five-question self-report measure of the degree to which one is content with one's life (Diener et al. 1985). Participants are instructed to indicate their agreement on a 7-point Likert-type scale from *strongly disagree* (1) to *strongly agree* (7). An example item is "I am satisfied with my life." Diener et al. (1985) found that the scale's consistency was good, with a Cronbach's alpha of .87 and a 2-month test–retest reliability correlation coefficient of .82. Diener et al. (1985) also found moderately strong correlations between the SWLS and nine other scales assessing subjective well-being in a sample of college students, providing evidence of convergent validity. Internal consistency of the SWLS in this study was good, with a Cronbach's alpha of .88.

Only the first three questions of the SWLS were utilized for this study. Diener, Emmons, Larsen, and Griffin, (1985) found that the first three questions had better psychometric properties than the last two questions, which are "So far I have gotten the important things I want in life" and "If I could live my life over I would change almost nothing." Oishi (2006) found that Chinese students answered these items differently than North American students and posited that this difference was due to a desire to not appear self-enhancing, a quality characteristic of individuals with high interdependence. Consequently, some subsequent studies using culture-relevant constructs have dropped these items due to concerns about the validity for participants of Asian heritage (i.e., Kim et al. 2012). Because we were interested in looking at differences that are culturally linked, we removed these items in order to avoid inaccurately measuring the scores of those high on interdependence. In addition, the fourth question may not be relevant to college students, who may be pleased with their life but have yet to accomplish any of their career goals. Also, unlike the first three questions, the fourth and fifth questions are oriented toward the past, whereas this study was interested in current life satisfaction.

Results

Preliminary Analysis

Data were screened for missing values, univariate outliers, violations of assumptions, and all predictor variables were mean centered. A total of 22 cases were deleted due to missing data and 4 cases were deleted because the respondents were not US born citizens. One univariate outlier was deleted due to a Z score value on the HSCL scale greater than 3.29 standard deviations from the mean (Field 2005). A review of skewness and kurtosis statistics, as well as histograms, indicated that none of the predictor variables violated assumptions of normality. An evaluation of tolerance and VIF statistics and Pearson correlations indicated that multicollinearity was not a cause for concern. A visual inspection of scatterplots between each pair of variables indicated that all relationships between major variables were linear. The means and standard deviations of all relevant variables are provided in Table 1.

Main Analysis

Hypothesis 1 Correlations found in Table 1 show that DSI was negatively correlated with SCS-Inter, $r(295) = -.221$, $p = .000$ and positively correlated with SCS-Indep, $r(295) = .412$, $p = .000$. DSI was also strongly negatively correlated with HSCL, $r(295) = -.585$, $p = .000$ and positively correlated with SWLS, $r(295) = .418$, $p = .000$. SCS-Indep was positively correlated with the DSI EC subscale scores, $r(295) = .18$, $p = .002$, FO subscale, $r(295) = .36$, $p = .000.$, the ER subscale, $r(295) = .28$, $p = .000$, and the IP subscale scores $r(295) = .46$, $p = .000$ (higher scores on the DSI subscales indicate higher levels of differentiation). SCS-Inter was negatively correlated with the FO subscale, $r(295) = -.32$, $p = .000$, and the ER subscale, $r(295) = -.25$, $p = .000$.

Hypothesis 2–3 with HSCL as Criterion Based on findings that men and women differ significantly on measures of self-construal (Guimond et al. 2006), gender was entered into the multiple regression equations testing hypotheses 2–4 first as a control. In the second step, SCS-Indep and SCS-Inter scores were entered, and in the third step total DSI score was entered. In the last step both the product of DSI and SCS-Indep and the product of DSI and SCS-Inter interaction terms were entered into the model. The results of both regressions are presented in Table 2. SCS-Indep significantly predicted HSCL scores, $\beta = -.24$, $t(292) = -4.26$, $p = .000$. SCS-Inter also significantly predicted HSCL, $\beta = .14$, $t(292) = 2.57$, $p = .011$. Self-construal accounted for 8 % of the variance in HSCL scores, R^2 *change* = .08, *F change*(2, 292) = 12.95, $p = .000$.

In the third step of the regression, DSI accounted for a significant portion of the variance in levels of HSCL beyond self-construal, $R^2 = .34$, $F(4, 291) = 38.05$, $p = .000$. DSI explained 24.6 % more variance than gender and self-construal alone, R^2 *change* = .25, *F change*(1, 291) = 108.86, $p = .000$.

When both interaction terms were included in the model the fourth block explained 1.4 % more variance than the previous blocks, R^2 *change* = .014, *F change*(2, 289) = 3.18, $p = .043$. Neither of the interaction terms were significant; however, the interaction term for SCS-Indep and DSI approached significance, $\beta = .09$,

Table 1 Distributional statistics, Cronbach's alpha reliabilities, and intercorrelations of the variables in the model (N = 296)

	1	2	3	4	5	6	7	8	9
1. DSI-SF	.73								
2. DSI-EC	.57**	.83							
3. DSI-FO	.83**	.31**	.69						
4. DSI-IP	.81**	.28**	.56**	.78					
5. DSI-ER	.90**	.37**	.69**	.61**	.83				
6. SCS-Inter	−.22**	−.02	−.32**	−.07	−.25**	.72			
7. SCS-Indep	.41**	.18**	.36**	.46**	.28**	−.05	.77		
8. SWLS	.42**	.29**	.20**	.48**	.33*	.14*	.19**	.88	
9. HSCL	−.59**	−.38**	−.43**	−.51**	−.50**	.16**	−.26**	−.46**	.89
Minimum	31.00	1.00	1.60	1.33	1.00	29.00	31.00	3.00	21.00
Maximum	118.00	6.00	6.00	6.00	6.00	83.00	82.00	21.00	68.00
M	81.20	4.36	4.24	4.25	3.58	55.66	59.00	14.85	38.10
SD	16.22	1.25	.93	.89	1.11	9.23	10.57	4.12	9.90

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 2 Hierarchical regressions of gender, differentiation of self, interdependence, independence, and their interactions on HSCL and SWLS

	HSCL					SWLS				
	R^2 Chng.	F	B	SE B	β	R^2 Chng.	F	B	SE B	B
Model 1										
Gender			−3.08	1.34	−.13*			−.19	.56	−.02
R^2 Chng	.018	5.32*				.00	.12			
Model 2										
Gender			−2.44	1.29	−.11			−.31	.55	−.03
SCS-Inter			.15	.06	.14*			.06	.03	.15**
SCS-Indep			−.22	.05	−.24**			.08	.02	.21**
R^2 Chng	.08	12.95**				.06	9.49**			
Model 3										
Gender			−.46	1.12	−.02			−1.02	.50	−.11*
SCS-Inter			.04	.05	.03			.11	.02	.24**
SCS-Indep			−.02	.05	−.02			.01	.02	.02
DSI			−.35	.03	−.57**			.12	.02	.49**
R^2 Chng	.25	108.86**				.18	69.76**			
Model 4										
Gender			−.49	1.11	−.02			−1.02	.50	−.11*
SCS-Inter			.03	.05	.03			.11	.02	.25**
SCS-Indep			−.01	.05	−.01			.004	.02	.01
DSI			−.35	.03	−.57**			.12	.02	.49**
DSI × Indep			.01	.002	.10*			−.001	.001	−.06
DSI × Inter								.001	.001	.03
R^2 Chng	.01	4.80*				.006	1.12			

* p < .05; ** p < .01

$t(292) = 1.79$, $p = .075$. Therefore, the interaction term for SCS-Inter and DSI on HSCL was removed from the final model to better assess the interaction between SCS-Indep and DSI, which had the higher beta value of the two. Results showed that the interaction between SCS-Indep and DSI was a statistically significant predictor of HCSL scores, $\beta = .10$, $t(292) = 2.19$, $p = .029$ indicating that SCS-Indep moderated the relationship between DSI and HSCL. Figure 1 presents a graph of the interaction, plotting HCSL scores at plus and minus 1 SD values of DSI and SCS-Indep, and it demonstrates that that the negative relationship between DSI and HCSL scores is stronger for those with lower SCS-Indep scores. The fourth block explained 1.1 % more variance than the previous blocks, R^2 change = .011, F change(1, 290) = 4.81, $p = .029$.
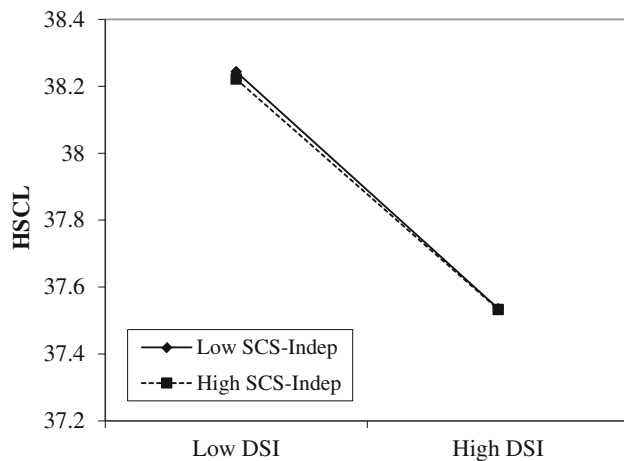
Fig. 1 Graph demonstrates the interaction SCS-Indep and DSI on HSCL scores

Hypothesis 2–3 with SWLS as Criterion As shown in Table 2, after controlling for gender, SCS-Indep significantly predicted SWLS scores, $\beta = .21$, $t(292) = 3.60$, $p = .000$. SCS-Inter also significantly predicted SWLS scores, $\beta = .15$, $t(292) = 2.63$, $p = .009$. After controlling for gender, self-construal accounted for 6.1 % of the variance in SWLS, R^2 $change = .06$, F $change(2, 292) = 9.49$, $p = .000$.

DSI accounted for a significant portion of the variance in SWLS scores regardless of self-construal, $R^2 = .24$, $F(4, 291) = 23.34$, $p = .000$. DSI explained 18.1 % more variance than gender and self-construal alone, R^2 $change = .18$, F $change(1, 291) = 69.76$, $p = .000$. Beta values for the interaction of SCS scores and DSI on SWLS scores were not significant, and the fourth block of the model did not explain any additional variance.

In order to further explain the contradictory finding that SCS-Inter predicted both higher SWLS and higher HSCL scores, while SWLS and HSCL were negatively related, we tested a mediation model with FO as a mediating variable in the relationship between SCS-Inter and SWLS. FO was selected as the mediator because we reasoned that fusion in Bowen's view is possibly the dysfunctional manifestation of interdependence. Support for this notion could be found in the negative correlation between FO and SCS-inter scores (recall that higher scores on the DSI subscales indicate higher levels of differentiation and so therefore less fusion; see Table 1). As Fig. 2 illustrates, the standardized regression coefficient between SCS-Inter and SWLS increased substantially when controlling for FO, indicating that FO acts as a suppressor on the relationship between SCS-Inter and SWLS. The other conditions of mediation were also met: SCS-Inter was a significant predictor of FO and SWLS, and FO was a significant predictor of SWLS while controlling for SCS-Inter.
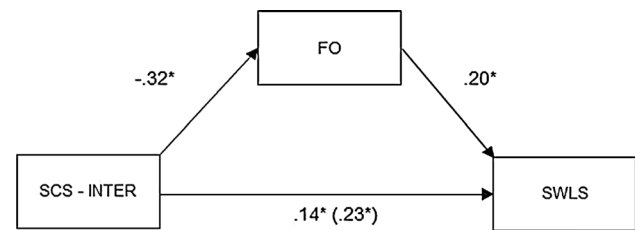

Fig. 2 Standardized regression coefficients for the relationship between SCS-Inter and SWLS as mediated by FO, which acts as a suppressor. The standardized regression coefficient between SCS-Inter and SWLS controlling for FO is in parentheses. *$p < .05$
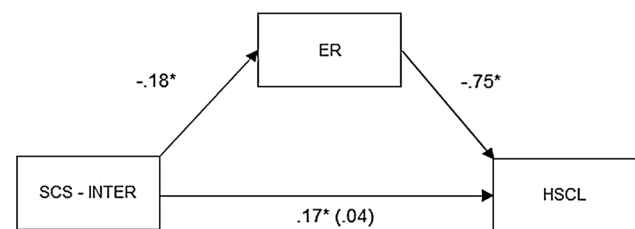

Fig. 3 Standardized regression coefficients for the relationship between SCS-Inter and HSCL as mediated by ER. The standardized regression coefficient between SCS-Inter and HSCL controlling for ER is in parentheses. *$p < .05$

Our attention then turned to the finding that SCS-Inter predicted higher HSCL scores. In addition to FO, SCS-Inter was also negatively related to ER, meaning that those higher on SCS-Inter may be more likely to experience and display strong emotional reactions. Higher ER would theoretically be more likely to cause noticeable psychological symptoms than FO and has been found to have a stronger relationship with psychological problems than FO in a previous study (Krycak et al. 2012). Therefore, a regression model was tested with ER as a mediator of the relationship between SCS-Inter and HSCL. As Fig. 3 illustrates, the standardized regression coefficient for SCS-Inter as a predictor of HCSL dropped from .14 to .04 and was no longer statistically significant after controlling for ER, indicating full mediation. The other conditions of mediation were also met, SCS-Inter was a significant predictor of ER and HSCL, and ER was a significant predictor of HSCL while controlling for SCS-Inter.

Discussion

The results of this study have substantial implications for theoretical conceptions both in family systems theory and the theory of self-construal. Based on cultural critiques of the construct of differentiation of self from the family of origin, we hypothesized that independent self-construal

would be more positively correlated with differentiation than interdependent self-construal, with the correlation between overall differentiation of self and levels of interdependent self-construal being smaller than that of levels of independent self-construal and differentiation of self or not significant. Independent self-construal was strongly positively correlated with differentiation of self, but interdependent self-construal was inversely related to differentiation of self rather than positively related or unrelated. One criticism of differentiation of self is that it is an individualistic construct, less relevant for individuals living in collectivist cultures (Chung and Gale 2006, 2009; Gushue and Constantine 2003; Tamura and Lau 1992). In this study, we focused on within-culture variation, to determine if the construct of differentiation of self is relevant for those with high levels of interdependent self-construal. What we found is that interdependent self-construal is inversely related to differentiation of self. One possible explanation for this finding is that individuals who are high on levels of interdependent self-construal could be more prone to expressions of fusion and emotional reactivity, subscales of differentiation of self that correlated with interdependent self-construal, when under stress due to their tendency to be more sensitive to social cues and the emotions of others than individuals with high levels of independence. Therefore, we took a closer look at the relationships among these variables and well-being.

As expected, levels of independent self-construal predicted high scores on satisfaction with life and low scores on psychological symptoms. However, one unexpected finding was that interdependent self-construal was positively correlated with satisfaction with life but also positively correlated with psychological symptoms. Previous research has typically shown no correlation between interdependent self-construal and measures of well-being (Kwan et al. 1997). However, some research has shown interdependent self-construal to be associated with sociotropy, a dysfunctional state defined as being overly concerned with other's views of oneself, establishing one's self-worth based on others' approval, attempting to please others, and being dependent on others (Mak et al. 2011), a construct that sounds fairly similar to fusion with others, one of the subcomponents of differentiation of self. Higher levels of fusion are thought to be indicative of the dysfunctional absence of solid self and therefore could represent an aspect of interdependent self-construal that manifests when individuals have difficulty coping with chronic anxiety. Inspection of subscale correlations indicated that higher interdependent self-construal scores were related to higher levels of fusion in this study, whereas fusion and life satisfaction were negatively correlated (recall that higher scores on the DSI subscales indicate higher levels of differentiation). Therefore, we took a

closer look at the relationships between fusion, interdependence, and satisfaction with life in an attempt to determine why interdependence was positively correlated with both satisfaction with life and psychological problems. Although the resulting mediation analyses were not planned, we thought that further investigation would be useful in fully understanding initial findings and could potentially contribute to further theoretical development. Our analysis demonstrated that fusion was acting as a suppressor variable in the relationship between interdependence and satisfaction with life. The relatively small correlation between interdependent self-construal and satisfaction with life increased once fusion was added as a mediating variable in the model. This finding indicated that interdependent self-construal is actually more related to satisfaction with life than we thought, once the effects of fusion were accounted for.

Our attention then turned to emotional reactivity because it was also correlated with interdependent self-construal and has been found in a previous study to be even more strongly related to psychological problems than fusion (Krycak et al. 2012). We found that emotional reactivity fully mediated the relationship between interdependent self-construal and psychological problems. The relationship between interdependent self-construal and psychological problems disappears after controlling for emotional reactivity, indicating that it is accounting for the positive relationship between interdependent self-construal and psychological problems.

Both the mediation and the suppressor effects that we found suggest that there are elements of interdependent self-construal that are dysfunctional and therefore are related to psychological symptoms and lower life satisfaction, aspects that are tapped by the fusion and emotional reactivity scales of the DSI. However, if individuals with high levels of interdependent self-construal have high levels of differentiation of self, and are thus able to adequately cope with stress and do not fall into fusion and emotional reactivity, they tend to have high satisfaction with life and the probability of psychological symptoms is not related to their self-construal. Originally, we hypothesized that because individuals with high levels of interdependent self-construal have a worldview that includes others as a part of the self, differentiation would not play as big a role in determining well-being as it might for those with lower levels of interdependent self-construal. However, instead we found that for individuals with interdependent self-construal, aspects of differentiation of self, fusion and emotional reactivity, are significantly related to well-being.

It should be noted that the correlations between interdependent self-construal and fusion and interdependent self-construal and emotional reactivity are not large enough

to indicate that the two scales are measuring the same construct. Therefore, one should not assume that interdependent self-construal is synonymous with either construct, or would necessarily lead to either fusion or emotional reactivity without significant stress. In addition, it is highly likely that there is a maladaptive expression of independent self-construal that occurs when individuals with high levels of independent self-construal experience stress and are unable to cope with it due to low differentiation of self. The logical assumption based on theory would be the tendency toward emotional cut-off, and empirical findings did indicate that independent self-construal had the smallest positive correlation to emotional cut-off. However, considering that it was still a positive correlation, more research will need to be conducted to test this hypothesis.

Research has indicated that differentiation of self is positively related to well-being (i.e., Skowron et al. 2009). Similarly, we found that differentiation of self was strongly negatively correlated with psychological symptoms and positively correlated with satisfaction with life, and accounted for a significant portion of the variance in psychological symptoms and satisfaction with life regardless of self-construal. That differentiation of self is a more powerful predictor of satisfaction with life and psychological symptoms than self-construal is consistent with the theoretical assumption that differentiation of self may be a broader construct than how one views the self in relation to others; indeed, that we identify an intrapsychic as well as an interpersonal dimension of differentiation supports this notion, and it is the intrapsychic aspects of differentiation that account for the relationship between interdependent self-construal with psychological symptoms, which disappears when emotional reactivity is taken into account (Kerr and Bowen 1988; Singelis 1994).

Another significant finding of this study is that independent self-construal moderated the relationship between differentiation of self and psychological symptoms such that the negative relationship between differentiation of self and psychological symptoms was stronger for those with lower levels of independence than for those at higher levels of independence. In other words, higher levels of independence may act as a buffer to psychological symptoms for those with low levels of differentiation of self. Considering that high levels of independent self-construal is the norm in the United States, behaviors consistent with high independent self-construal are often expected and rewarded, which may explain some of the buffering effect. In addition, emotional cut-off had the smallest positive correlation with independent self-construal compared to the other three subscales of differentiation of self, indicating that individuals who are high in independent self-construal may be more likely to engage in emotional cut-off, or perhaps a more subtle form of distancing that is not

captured by the DSI than fusion or emotional reactivity when experiencing chronic stress. Emotional distancing is likely to lead to more socially accepted behaviors in an individualistic society than fusion or emotional reactivity, which may explain why we found this interaction with independent self-construal, but not with interdependent self-construal, which seems to be associated with fusion and emotional reactivity. More research is needed to clarify why independent self-construal may be serving this buffering effect.

One limitation of this study was the nature of the sample used. Because the sample was largely White/Caucasian or European American college student females in their early 20 s, the findings of this study may not be generalizable to other populations. Furthermore, we did not have enough participants in different ethnic groups in order to make comparisons across ethnicities. Future research is needed to determine if there are between-group differences based on ethnicity and other cultural concepts such as ethnic identity development and acculturation. In addition, a larger sample size would have also provided the opportunity to calculate the regressions using the subscales of differentiation of self as well, an avenue that is recommended for future research.

Our findings also extend upon the previous literature on the relationship between differentiation of self and well-being by providing evidence that independence serves as a buffer to psychological symptoms for those with low differentiation of self. This finding gives us a more complex understanding of the relationship between differentiation and well-being. Further considering self-construal in combination with differentiation provided a better understanding of the operation of the components of differentiation and how they might function in samples that are less individualistic and more collectivistic in philosophy.

Our discovery of a buffer can also have implications for clinical practice. Considering that there is one buffer, there may be others. Determining what these are may help individuals who have difficulty increasing their differentiation of self to live more fulfilling lives by increasing levels of these buffers in times of stress, and it may also give an indication of factors that may be inhibiting individuals' differentiation of self. In this case, individuals who have well-developed independent self-construals may benefit from engaging in behaviors consistent with their independent self-construal, such as maintaining consistency in their self-image when interacting with others, relying less on others for their sense of self, and focusing on their own health and well-being in order to boost their feelings of autonomy and reduce psychological symptoms.

The findings that fusion suppresses the positive relationship between interdependent self-construal and satisfaction with life and that emotional reactivity mediates the relationship between interdependent self-construal and

psychological problems also have significant implications for clinical practice. Therapists should be aware that when working with US born individuals with high levels of interdependent self-construal periods of stress could lead to fusion and emotional reactivity. Working with these clients to reduce fusion and emotional reactivity may increase satisfaction with life and reduce psychological symptoms. In addition, these findings strengthen the literature on self-construal by providing a more nuanced explanation of the relationship between self-construal and well-being. More research is needed to determine what factors may lead someone who has high levels of interdependent self-construal to experience more fusion and emotional reactivity, particularly whether living in a culture that values independence over interdependence may result in higher chronic anxiety for these individuals. Furthermore, considering Tamura and Lau's (1992) assertion that moving toward integration into a family system is the most typical developmental process for individuals who have higher levels of interdependent self-construal, future research on interdependent self-construal and well-being should consider theoretical conceptions of the development of self that focus on integration in addition to Bowen's (1978) theory of differentiation of self.

Summary

This study examined the relationship between two concepts: *self-construal*, how one views the self in relation to others, which consists of two dimensions: independent self-construal and interdependent self-construal; and *differentiation of self*, the ability to balance the natural forces of togetherness and autonomy in relation to one's family of origin, which consists of four subcomponents: emotional reactivity, fusion, I-position, and emotional cut-off. Previous research (Chung and Gale 2006) has indicated that for individuals with high levels of interdependent self-construal the relationship between differentiation of self and well-being may not be as strong as it is for those with high levels of independent self-construal. After conducting analyses to test this and related hypotheses, we concluded the following:

- Independent self-construal moderates the relationship between differentiation of self and psychological symptoms, suggesting that higher levels of independence act as a buffer to psychological symptoms for those with low levels of differentiation of self.
- Fusion acts as a suppressor variable in the positive relationship between interdependence and satisfaction with life, indicating that interdependent self-construal

and satisfaction with life are more strongly related once fusion is accounted for.

- Emotional reactivity fully mediates the positive relationship between interdependent self-construal and psychological problems, indicating that for individuals with high levels of interdependent self-construal, levels of emotional reactivity may play a significant role in determining their psychological well-being.

These findings offer three primary implications for clinicians. First, when considering a client's level of differentiation of self it is important to also consider the client's self-construal and how it may interact with the client's level of differentiation of self to affect their well-being. Second, for individuals who have well-developed independent self-construals but low differentiation of self, taking steps to boost their levels of independent self-construal may provide as a buffer in times of stress. Finally, in time of stress, individuals with high interdependent self-construals and low levels of differentiation of self may be likely to engage in fusion and emotional reactivity; working with these clients to understand and manage these responses to stress may enhance their over-all psychological well-being.

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