



Articles

Crying in Context: Understanding Associations With Interpersonal Dependency and Social Support

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Abstract

This study examines the associations among interpersonal dependency, social support, and crying proneness, since crying is a behavior that is particularly relevant to the affiliative interpersonal goals characterizing maladaptive forms of dependency (Keltner & Kring, 1998). Data were collected from 305 first-year university students (M age = 18 years). A series of hierarchical linear regressions, controlling for gender, commuting status, romantic relationship status, stress, loneliness, and depressive symptoms, partially supported our hypotheses. That is, we found that a measure of maladaptive dependency (destructive overdependence, or DO) and crying proneness were positively correlated, and that DO moderated the associations between social support and crying proneness. Specifically, we found that social support and crying were more closely positively associated among individuals high on DO compared to individuals low on DO. Our findings imply that interpersonal dependency may be an important factor in understanding individual differences in crying, and in determining whether crying is a successful elicitor of social support.

Keywords: over-dependence, crying proneness, interpersonal behaviors, personality types

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Crying is a compelling form of human behavior, and yet has remained largely unstudied in research on social behavior and emotions (Ekman & Oster, 1979; Tomkins, 1963), perhaps in part because it is viewed as a *symptom* rather than as a unique behavior (Vingerhoets, 2013). In fact, however, the shedding of emotional tears is *not* just a symptom or sign of sadness and/or other emotions. Rather, it is a very complex behavior that is under the influence of biological, psychological, and sociocultural forces. Although an individual's crying behavior may seem rather stable, it actually changes considerably depending on context and the individual's physical/psychological state and interpersonal functioning. Furthermore, crying is postulated to serve both intra-person (catharsis, mood improvement) and inter-personal (reducing aggression, promoting social bonding) functions (Vingerhoets, Bylsma, Rottenberg, & Fögen, 2009).

While much of the limited existing research on adult crying has focused on developmental perspectives (Rottenberg & Vingerhoets, 2012), culture and gender differences (van Hemert, van de Vijver, & Vingerhoets, 2011), and social context (Harber, Einev-Cohen, & Lang, 2008; Hendriks & Vingerhoets, 2006), some studies have focused on individual differences in crying behavior *within* a social context (Vingerhoets et al., 2009). Theory suggests that

developing a comprehensive account of crying necessitates an evaluation of the interplay among crying, individual differences, and the social context (Vingerhoets, 2013; Vingerhoets, Cornelius, Van Heck, & Becht, 2000; Vingerhoets, Van Tilburg, Boelhouwer, & Van Heck, 2001). The current report examines the role of a specific individual difference variable, namely interpersonal dependency, in moderating the association between social support and crying. Because crying is a behavior that is particularly relevant to the affiliative interpersonal goals characterizing maladaptive forms of dependency (Keltner & Kring, 1998), we expected the link between social support and crying proneness to be stronger among individuals high on this personality style.

Model of Adult Crying

According to the biopsychosocial model of adult crying (Vingerhoets, 2013; Vingerhoets et al., 2000), adult crying is a result of the interaction among cognitive, social, and psychobiological processes. There are four factors that may help determine whether or not a crying response will occur: (1) the objective situation; (2) (re)appraisal; (3) emotional state; and (4) moderating factors. More specifically, the model proposes that the way in which an individual appraises a particular objective situation will put in motion a set of patterned, biologically- and socially-based collections of responses (i.e., internal representations) that then influence the emotional state of the individual. This emotional state, in turn, determines whether or not an individual will cry. Then, the act of crying itself, as well as reactions of the social environment to the crying (e.g., emotional support), can provide a feedback loop to further influence the nature of the situation, the individual's appraisals, and/or the individual's emotional state. Moderating factors (e.g., psychosocial factors like personality and situational factors like the presence of others), are also hypothesized to influence nearly all aspects of the model. According to Vingerhoets (2013), it may be particularly important to examine how individual differences *interact* with the social context to predict crying, which is the purpose of the present study.

Crying and Social Support

Although the specific functions of crying vary across the lifespan, at its core it can be understood as an attachment behavior (Nelson, 1998; Rottenberg & Vingerhoets, 2012). In infancy, crying serves to ensure the protection and nurturing of caregivers. During the transition to adulthood, faced by the individuals in the current study, the functions of crying become more diffuse and diverse, and perhaps less tied to immediate survival needs (Rottenberg & Vingerhoets, 2012). However, the attachment functions of crying seem to endure even into adulthood, since crying behavior continues to both elicit caregiving and emotional support, and reduce aggression in others (Hendriks & Vingerhoets, 2006). In addition, with age, individuals become better at emotion regulation – such that adults can be more strategic in their crying (e.g., crying around individuals who are highly motivated to provide care for them, and inhibiting crying in the presence of those who may be disinclined to tolerate it) (Rottenberg & Vingerhoets, 2012; Zeman & Shipman, 1996; also see Tamir, 2009).

In fact, social-functional theory suggests that adult crying is a behavior that facilitates social interactions that allow for adaptive responding and/or facilitate social opportunities (Keltner & Kring, 1998). Consistent with this view are data showing that adult crying motivates caretaking and affiliative behaviors, thereby enhancing social bonds with intimate others (Hendriks, Croon, & Vingerhoets, 2008; Hendriks & Vingerhoets, 2006; Nelson, 1998; Vingerhoets, 2013). However, less understood is whether individuals are strategic in their crying. To this point, Cornelius (1997, 2001) has argued that crying can be instrumental. Although not consciously manipulative, this type of crying has at its origins the desire for comfort and reassurance. Cornelius claims that the often presumed cathartic effects of crying might actually be the consequence of positive changes in the situation or relationships with others that crying helps to bring about. One study that has looked explicitly at the role of the social context in predicting the

cathartic nature of crying supports this idea. [Bylsma, Vingerhoets, and Rottenberg \(2008\)](#), in a large sample of young adult male and female students in 35 countries, found that the receipt of social support was positively related to the experience of catharsis after a crying episode. There is also evidence that there might be individual differences in its use (e.g., [Buss \(1992\)](#) claims that women are more likely to use such instrumental crying).

The Role of Individual Differences in Crying Proneness

Crying proneness and/or crying frequency have been found to be associated with a number of individual difference factors, including gender, temperament, attachment style, socialization, confrontation with stressful/traumatic life events, being engaged in a romantic relationship, and the transition to parenthood ([Vingerhoets et al., 2009](#)). Gender, in particular, has been shown to be a powerful predictor of crying, in that women report more crying than do men in adulthood (e.g., [Peter, Vingerhoets, & Van Heck, 2001](#); [Van Tilburg, Unterberg, & Vingerhoets, 2002](#); [Vingerhoets, 2013](#); [Vingerhoets et al., 2000](#)). There is also quite a lot of empirical evidence to support the idea that crying proneness is influenced by personality ([Rottenberg, Bylsma, Wolvin, & Vingerhoets, 2008](#); [Vingerhoets, 2013](#); [Vingerhoets, Van Tilburg, et al., 2001](#); [Vingerhoets et al., 2009](#)). For example, weeping frequency has been found to be positively associated with neuroticism ([De Fruyt, 1997](#)), even when controlling for the effects of gender and age. In addition, individuals with personality disorders, such as borderline or histrionic personality disorders, are known for their theatrical and manipulative behavior, which is often accompanied by crying ([Alexander, 2003](#)). In the present study, we are particularly interested in the capacity of one particular personality factor, interpersonal dependency, to predict crying proneness at varying levels of social support.

Interpersonal Dependency: The Cognitive Interactionist Model

The present study is based on the Cognitive/Interactionist (C/I) model of interpersonal dependency ([Bornstein, 2011](#)), since this model is consistent with social-functional theory, while additionally providing a framework from which to conceptualize interpersonal dependency with respect to the contextual variations in behavior that dependent individuals display (e.g., variations based on level of social support). The C/I model suggests that although behaviors of the dependent person may vary from situation to situation relative to the perceived risks and rewards, their core beliefs and motives do not. For example, even though dependent individuals tend to display passive and submissive behavior ([Bornstein, 1992](#); [Pincus & Wilson, 2001](#)), they may behave quite aggressively when they perceive either a need or the opportunity to strengthen ties with an authority figure ([Bornstein, Riggs, Hill, & Calabrese, 1996](#)).

In order to assess this multi-component definition of dependency from the C/I perspective, Bornstein and colleagues ([Bornstein, Geiselman, Eisenhart, & Languirand, 2002](#); [Bornstein et al., 2003](#)) developed the Relationship Profile Test (RPT) to more accurately evaluate the range of intra- and interpersonal manifestations of interactions among the cognitive, motivational, behavioral and affective tendencies of the dependent individual. As a result, the RPT assesses three hypothesized expressions of interpersonal dependency: Healthy Dependency (HD), Dysfunctional Detachment (DD), and Destructive Overdependence (DO). HD is characterized by help and support-seeking that results in strengthened interpersonal ties. That is, individuals high on HD can flexibly seek support without compromising social connectedness. It represents a functional blend of autonomy and connectedness. In contrast, DD is characterized by an inability to rely on others for help. Individuals high on DD are unable (or unwilling) to cultivate social ties or engage in appropriate affiliative behaviors ([Birtchnell, 1987](#)). DO, on the other hand, is characterized by a non-reciprocal clingy style of help-seeking and relating that leads to difficulties in personal and professional relationships. DO is thought to put an individual at increased risk for physical and psychological disease, at least in part due to affect dysregulation ([Bornstein et al., 2002](#)). In addition, DO, when coupled with high levels

of interpersonal stress, may lead to depression and/or may compromise immune function (Bornstein, 1995; Bornstein et al., 2002). More generally, high DO individuals may not benefit as much as others from their intimate relationships because they set their interpersonal goals unrealistically high and are frustrated when these goals are not met (Gardner & Helmes, 2006).

In the present study we operationalize maladaptive overdependence as DO, since DO is most closely related to the 'maladaptive interpersonal dependency' as typically understood in the literature and in measures using more unidimensional assessments of interpersonal dependency (e.g., the Interpersonal Dependency Inventory (IDI) (Hirschfeld et al., 1977). The advantage of the RPT is that in addition to destructive overdependence, it also assesses healthy dependency and dysfunctional detachment, for which we control in the present study.

Destructive Overdependence, Social Support, and Crying

Though no studies have directly examined the relationship between destructive overdependence and social support or destructive overdependence and crying, findings in related investigations suggest possible links. For example, previous studies have found that DO persons are at increased risk of negative health outcomes in the context of receiving inadequate social support (Bornstein, 1992, 1995), suggesting that social support may be particularly important for highly dependent people. In addition, overly dependent individuals were found to display greater emotionality in the interpersonal context (Mongrain & Zuroff, 1994). Furthermore, positive links between anxious attachment and crying have been established (Laan, van Assen, & Vingerhoets, 2012), and anxiously-attached individuals are similar to individuals high on maladaptive dependency in that they are guided in their behavior by the unfulfilled desire for attachment figures to pay 'adequate' attention to them and provide them with reliable protection (Mikulincer & Shaver, 2003). In addition, and as mentioned above, the social-functional model suggests that crying serves to elicit caretaking and affiliative behaviors. Thus, we conceptualized crying as a specific strategy that DO individuals might differentially employ to engage social support. In other words, crying may be used by individuals high on DO to facilitate supportive interpersonal exchanges, in contrast to individuals low on this personality style for whom crying may be less directly related to this social function. As such, we would expect DO to moderate the association between social support and crying, such that crying would be more closely linked to social support at high levels of DO.

The Present Study

In the current report, we evaluated whether social support and crying were more closely linked among overly dependent individuals compared to individuals low on destructive overdependence. More specifically, we tested two interrelated hypotheses.

Hypothesis 1: DO is positively correlated with crying proneness, and more strongly (and positively) linked with crying proneness than HD or DD.

Hypothesis 2: DO moderates the association between social support and crying proneness, controlling for levels of HD and DD. Based on our theoretical conceptualizations and the literature reviewed above, we expected that social support and crying would be more closely associated for individuals high on DO than for individuals low on DO, and specifically that crying would be associated with higher levels of social support among high DO individuals only (regardless of levels of HD and DD).

Method

Participants

Survey data for the present study were collected from 305 freshmen (reflecting a 39% response rate) during the first few weeks of classes at a small, private university in the northeast of the United States in September of 2010. A paper-and-pencil survey was distributed to first-year orientation classes. The survey included items on personality, social support, self-esteem, attachment, loneliness, expressive behavior, physical health/risk-taking behaviors, college adjustment, depressive symptoms, and life satisfaction. The mean age of the sample was 18.06 ($SD = 1.89$), and 84% of the participants were female. Although the university from which these data were obtained does consist of a much larger proportion of females (70%) than males (30%), 85% is a bit higher than this average proportion. However, this 85% is in line with the proportion of females in other studies conducted at the university with freshmen students. Furthermore, it could be that female undergraduates are more inclined than male undergraduates to complete surveys, in particular about social relationships. Sixty-three percent of the participants identified as White, 12% as Black, 10% as Asian, 8% as Latino, and 7% as "Other." Fifty-four percent of the students lived at home with their parents and commuted to campus, and 45% lived on campus.

Measures

Relationship Profile Test (RPT) — The RPT (Bornstein et al., 2003) is a 30-item questionnaire that assesses DO, DD, and HD. Responses were on a 4-point scale ranging from 1 (*not at all true of me*) to 4 (*very true of me*). The RPT yields three 10-item subscale sum scores (ranging from 10 to 40) for each of the personality styles. Sample items include: "I am easily hurt by criticism" (DO), "When someone gets too close to me, I tend to withdraw" (DD), and "I am comfortable asking for help" (HD). The RPT has good construct validity (Bornstein & Huprich, 2006; Bornstein et al., 2002; Bornstein et al., 2003). Cronbach's alphas for DO, DD, and HD in this study were .81, .76, and .80, respectively.

Social support variables — Prior research suggests the need to distinguish between structural characteristics (e.g., number of relationships, frequency of contact) and perceived support (House, Landis, & Umberson, 1988), as well as to distinguish between support from kin versus non-kin networks (Adams & Blieszner, 1995; Antonucci & Akiyama, 1995; Brown, Consedine, & Magai, 2005; Cavanaugh, 1998; Fiori, Consedine, & Merz, 2011). Taking these distinctions into account, the current report assessed social support in two ways. First, we adapted the Lubben Social Networks Scale (LSNS-18; Lubben et al., 2006) to assess the size, closeness, and frequency of contact from family and friends. There are six items in each subscale (family and friends), ranging from 0 (*none or never*) to 5 (*nine or more or always*) (e.g., "How many relatives do you see or hear from at least once a month?"). Sum scores for the subscales ranged from 0 to 30. Cronbach's alphas were .86 and .81, respectively.

Second, we used the Social Provisions Scale (Cutrona & Russell, 1987) to examine the degree to which respondents' social relationships provide various dimensions of social support. The scale contains 24 items, four for each of the following six dimensions: Attachment, Social Integration, Reassurance of Worth, Reliable Alliance, Guidance, and Opportunity for Nurturance. Responses to the items range from 1 (*strongly disagree*) to 4 (*strongly agree*) (e.g., "I feel part of a group of people who share my attitudes and beliefs"). The scale has established reliability and validity (Russell, Cutrona, Rose, & Yurko, 1984). Items were reverse-coded as necessary and a total mean scale was created that ranged from 1 to 4 (Cronbach's alpha = .91).

Crying proneness — Crying proneness was assessed with a single item, “How would you rate your general tendency to cry?”, with responses ranging from 1 (*I hardly ever cry*) to 10 (*I can very easily cry*) (Vingerhoets & Becht, 1996). Previous studies have demonstrated predictive validity between self-reported crying proneness and observed crying episodes (Kraemer & Hastrup, 1986), so we reasoned that self-reported crying proneness was a reasonable estimate of actual crying episodes.

Control variables — For our primary regression analyses we included several control variables that have established associations with crying and/or social support, particularly among adolescents and young adults: gender (Antonucci, 2001; De Fruyt, 1997; Peter et al., 2001; Shumaker & Hill, 1991), romantic relationship status (Connolly & Johnson, 1996), stress (Choti, Marston, Holston, & Hart, 1987; Cohen & Wills, 1985), loneliness (Jones & Moore, 1987; Rubenstein & Shaver, 1982), and depressive symptoms (Vingerhoets, Rottenberg, Cevaal, & Nelson, 2007). In particular, because crying frequency is likely linked to greater negative affectivity, we felt it was important to control for negative affect constructs (i.e., stress, loneliness, and depressive symptoms) to ensure that our results were not due solely to levels of negative affect.

Romantic relationship status was a dichotomous variable, 0 (*not in a relationship*) or 1 (*in a relationship*). Stress was measured with a single item ranging from 0 (*no stress*) to 4 (*tremendous stress*), since research (Elo, Lepänen, & Jahkola, 2003) indicates that a single-item measure of stress has satisfactory content, criterion, and construct validity. Loneliness was assessed with the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980), and depressive symptoms were measured using the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). Because of the unique breakdown of the sample (about half living on campus, half off), we also controlled for residence, 0 (*not living on campus*), 1 (*living on campus*). Finally, in all analyses testing for DO as a moderator, we controlled for levels of HD and DD.

Results

Descriptives and Bivariate Correlations

Table 1 provides the bivariate correlations among all of the study variables. Most notable is that crying proneness was positively associated with DO ($r = 0.22, p < .001$), and there was a trend for a negative association with HD ($r = -0.12, p < .10$), but no significant association with DD. Crying proneness was also significantly and positively associated with stress ($r = 0.30, p < .001$) and depressive symptoms ($r = 0.26, p < .001$), as well as being female ($r = 0.45, p < .001$) and being in a relationship ($r = 0.18, p < .01$).

Crying Proneness and DO, HD, and DD

To test our first hypothesis, we initially conducted a linear regression in which we regressed crying proneness on all three personality styles simultaneously. As predicted, only DO significantly (positively) predicted crying proneness ($\beta = 0.19, p < .01$).

Moderation Analysis

To test our hypothesis that DO would moderate the association between social support and crying proneness, we followed generally established procedures (Aiken & West, 1991) and conducted two hierarchical linear regressions (one for family and friend support, the other for the social provisions variable) with crying proneness as the outcome variable. The control variables (gender, relationship status, stress, loneliness, depressive symptoms, HD, and DD) were entered in the first step. The predictor variables, destructive overdependence and the social

Table 1
Correlations Among all Study Variables

Variable	M/%	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Female	83.50	n/a	–												
2. On Campus	44.90	n/a	-.01	–											
3. In Relationship	36.70	n/a	.06	.01	–										
4. Stress	2.41	0.88	.12*	.01	.09	–									
5. Loneliness	36.10	10.40	-.04	.01	-.06	.20**	–								
6. Dep. Symptoms	17.30	10.30	.13*	.04	.02	.33***	.60***	–							
7. Cry. Proneness	5.27	2.74	.45***	-.00	.18**	.30***	.02	.26***	–						
8. DO	23.10	5.71	.09	-.08	-.08	.12*	.37***	.43***	.22***	–					
9. DD	26.80	5.05	.02	-.02	-.05	.17**	.41***	.36***	.04	.14*	–				
10. HD	28.10	5.02	-.06	-.01	.18**	-.17**	-.59***	-.45***	-.12†	-.40***	-.30***	–			
11. Family Support	19.80	5.96	.13*	.02	.08	-.01	-.29***	-.17**	.06	-.05	-.24***	.26***	–		
12. Friend Support	21.90	4.75	.02	-.02	.11†	.05	-.45***	-.16**	.06	-.05	-.22***	.32***	.31***	–	
13. Supp. Provision	3.39	0.40	.01	.02	.10	-.01	-.67***	-.38***	.01	-.24***	-.22***	.53***	.32***	.47***	–

†p < .10. *p < .05. ***p < .001.

support variables, were entered in the second step. Finally, the interactions between DO and the social support variables were added in the third step. Because the direction, significance, and approximate magnitude of slopes for the control variables did not change between Steps 1 and 2, for reasons of parsimony we include only Steps 2 and 3 in our regression tables.

As seen in Step 2 of the hierarchical linear regression predicting crying proneness from destructive overdependence, family and friend support, and their interactions (Table 2), being female, in a relationship, and highly stressed predicted a greater tendency to cry. Whereas depressive symptoms were positively associated with crying proneness, loneliness was *negatively* associated. In this second step, DO was positively associated with crying proneness ($\beta = 0.11$, $p = .079$), but only at the level of a trend, and neither family nor friend support was predictive of crying proneness. With the addition of the interactions of DO with family and friend support in Step 3, and consistent with our predictions, we found a trend for a significant interaction between DO and family support ($\beta = 0.51$, $p = .056$). This interaction is depicted in Figure 1.

Table 2

Hierarchical Linear Regression Predicting Crying Proneness From Destructive Overdependence, Family and Friend Support, and Their Interactions

Variables	B	SE B	β
Step 2			
Female	2.32	0.41	0.32***
On Campus	0.14	0.30	0.03
In a Relationship	1.01	0.32	0.18**
Stress	0.53	0.18	0.17**
Loneliness	-0.07	0.02	-0.25**
Depressive Symptoms	0.06	0.02	0.24**
Healthy Dependency	-0.09	0.04	-0.16*
Dysfunctional Detachment	-0.03	0.03	-0.06
Destructive Overdependence	0.05	0.03	0.11 [†]
Family Support	0.01	0.03	0.03
Friend Support	-0.00	0.04	-0.01
Step 3			
Female	2.35	0.41	0.32***
On Campus	0.08	0.30	0.01
In a Relationship	0.96	0.32	0.17**
Stress	0.51	0.18	0.17**
Loneliness	-0.06	0.02	-0.24**
Depressive Symptoms	0.06	0.02	0.24**
Healthy Dependency	-0.08	0.04	-0.14 [†]
Dysfunctional Detachment	-0.03	0.03	-0.06
Destructive Overdependence	0.04	0.14	0.09
Family Support	-0.18	0.10	-0.38 [†]
Friend Support	0.15	0.14	0.27
DO x Family Support	0.01	0.00	0.51 [†]
DO x Friend Support	-0.01	0.01	-0.39

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

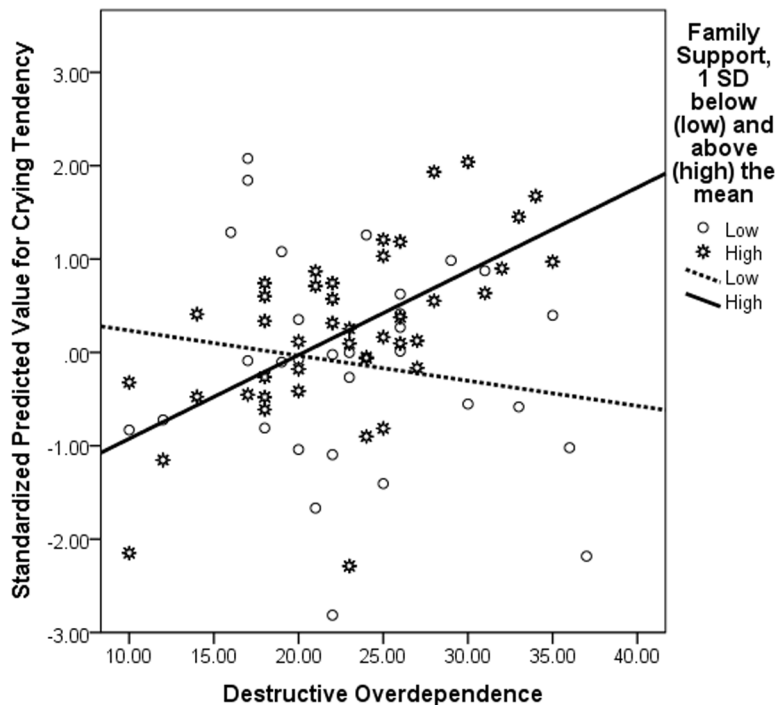


Figure 1. The association between DO and crying proneness (predicted values from full regression model), separately for individuals low and high on family support (based on one standard deviation below and above the mean on Family Support).

For individuals low on DO, reporting low levels of support is associated with a greater tendency to cry, whereas reporting high levels of support is associated with a lesser proneness to crying. However, at high levels of DO we see the opposite pattern; individuals reporting high levels of support have a *greater* tendency to cry, whereas individuals with low levels of support report a *lesser* tendency to cry. We did not find a significant interaction between DO and friend support.

In the second step of the hierarchical linear regression predicting crying proneness from destructive overdependence, social provisions, and the interaction between the two (Table 3), we see the same associations of the control variables and destructive overdependence with crying proneness as in the previous regression. Support provision was not predictive of crying proneness. With the addition of the interaction between DO and support provision in Step 3, and again, consistent with our predictions, we found a significant interaction between DO and support provision ($\beta = 1.25, p < .01$). This interaction is depicted in Figure 2 and mirrors the interaction found above. For individuals low on DO, reporting low levels of support is associated with a greater tendency to cry, whereas reporting high levels of support is associated with a lesser proneness to crying. However, at high levels of DO we see the opposite pattern: individuals reporting high levels of support have a *greater* tendency to cry, whereas individuals with low levels of support report a *lesser* tendency to cry.

Table 3

Hierarchical Linear Regression Predicting Crying Proneness From Destructive Overdependence, Social Provisions, and Their Interaction

Variables	B	SE B	β
Step 2			
Female	2.35	0.41	0.32***
On Campus	0.14	0.30	0.03
In a Relationship	1.01	0.32	0.18**
Stress	0.53	0.18	0.17**
Loneliness	-0.07	0.02	-0.26**
Depressive Symptoms	0.06	0.02	0.24**
Healthy Dependency	-0.08	0.04	-0.15*
Dysfunctional Detachment	-0.03	0.03	-0.06
Destructive Overdependence	0.05	0.03	0.11 [†]
Support Provision	-0.04	0.51	-0.01
Step 3			
Female	2.34	0.40	0.32***
On Campus	0.14	0.30	0.03
In a Relationship	1.02	0.31	0.18**
Stress	0.57	0.18	0.19**
Loneliness	-0.07	0.02	-0.26**
Depressive Symptoms	0.07	0.02	0.26**
Healthy Dependency	-0.08	0.04	-0.15*
Dysfunctional Detachment	-0.04	0.03	-0.07
Destructive Overdependence	-0.55	0.23	-1.15*
Support Provision	-4.15	1.63	-0.62*
DO x Support	0.18	0.07	1.25**

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The aim of the present study was to evaluate two hypotheses regarding the associations among interpersonal dependency, crying proneness, and social support. First, as expected, we found a positive association between maladaptive interpersonal dependency (i.e., destructive overdependence) and crying proneness in a sample of first-year college students, controlling for healthy dependency and dysfunctional detachment. Second, also as expected, we found that DO moderated the association between the appraisal of support and crying proneness, and there was a trend towards DO also moderating the association between family support and crying proneness. However, we did not find DO moderation between friend support and crying proneness. Below, we revisit these results more fully, concentrating on the implications our findings have for the understanding of interpersonal functioning across types of dependency orientations and the links among crying, personality, and social support.

Crying: The Link to Personality Functioning

One key contribution of the current report is the demonstration that personality – in this instance, DO – has a robust link with greater crying proneness. Interestingly, although DD was unrelated to crying tendency, HD was negatively associated with crying tendency. As noted, a few prior studies have shown greater crying to be associated with greater neuroticism (De Fruyt, 1997; Peter et al., 2001; Rottenberg, Bylsma, Wolvin, et al., 2008), attachment

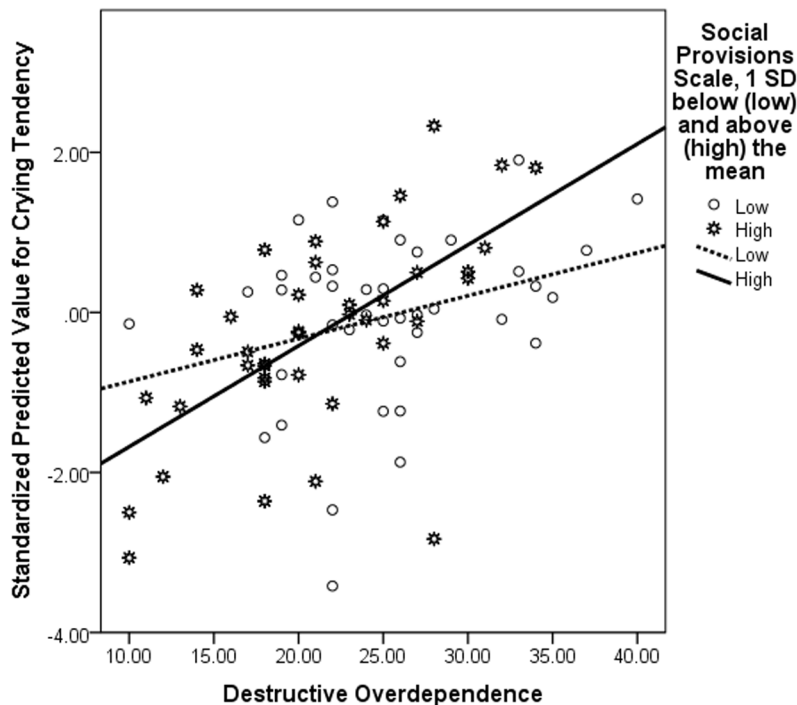


Figure 2. The association between DO and crying proneness (predicted values from full regression model), separately for individuals low and high on social support (based on one standard deviation below and above the mean on the Social Provisions Scale).

characteristics (Laan et al., 2012), and greater empathic skills (Williams, 1982). Consistent with these few works, our findings suggest that DO, in particular, may be an important predictor of crying proneness in adults. Namely, the link between DO was sustained despite our controlling for a host of demographic, intrapersonal, and contextual variables. In addition to controlling for gender (Peter et al., 2001) and relationship status, it is noteworthy that the link between DO and crying remained even when controlling for stress, loneliness, and depressive symptomology. Although crying occurs in response to many internal states (Vingerhoets et al., 2001), persons with greater neuroticism (a trait negative affect construct) consistently report more frequent crying (Rottenberg, Bylsma, Wolvin, et al., 2008). Although findings in depressed samples are complex, crying frequency is likely linked to greater negative affectivity. Thus, finding that DO predicts crying proneness even when several negative affect constructs (i.e., stress and depressive symptoms) were controlled implies that individuals high on DO are not simply crying more due to greater negative affect.

It should also be noted here that although the zero-order correlation of crying with loneliness was nonsignificant, in our regression models loneliness was significantly *negatively* correlated with crying - that is, increased loneliness was associated with lower levels of crying proneness after controlling for depressive symptoms, stress, gender, etc. This could be related to the idea of crying as a form of communication; perhaps lonely individuals do not have anyone to cry *to*. Of course, people often cry alone, and empirical data show that adults often do cry when alone or in the company of just one other individual, preferably one's mother or partner (Frey, 1985; Vingerhoets, 2013; Vingerhoets, Van Geleuken, Van Tilburg, & Van Heck, 1997). However, Fridlund (1994) claims that even private emotional expressions may be considered social, since the aim (like in infancy) may still be to draw others near. It may also be that individuals are more prone to cry with decreasing loneliness because they are experiencing

exposure to a wider range of "positive" social experiences, which nonetheless can be associated with increased crying proneness, since there are both positive and negative antecedents to crying (Bindra, 1972; Scheirs & Sijtsma, 2001).

The question then is why, specifically, do high DO individuals report more crying? Theory suggests that this occurs for a number of reasons. First, while controlling for several affective confounds on crying tendency makes interpretations in which crying results from greater negative emotionality less likely, it may be that the greater crying among persons high in DO reflects their *specific* emotional profile. It may be that there is something about the discrete emotional composition of their emotional lives not controlled for by our comparatively global constructs or, more speculatively, that the specific emotional profile of persons with high DO differentially lends itself to crying or to specific kinds of crying (e.g., DO individuals may be engaging in more 'instrumental crying;' Cornelius, 1997, 2001).

Second, it may be that there is a situationally self-selective process occurring in which persons high in DO differentially "choose," expose themselves to, or even create contexts in which crying (or particular types of crying) is more likely to occur (i.e., the 'objective situation' part of Vingerhoets and colleagues' (2000) biopsychosocial model of crying). Although we controlled for relationship status, such a variable does not necessarily offer particularly robust control over the nature of individual relationships or participants' situational exposures more broadly. It is possible, for example, that high DO individuals differentially expose themselves to sad movies, music, novels, poems or thoughts (Frey, Hoffman-Ahern, Johnson, Lykken, & Tuason, 1983) containing strong themes eliciting crying (Nelson, 2000, 2005). Equally, it may be that the relational dynamics of persons with greater DO systematically vary such that they differentially lend themselves to more frequent relational conflicts and reunions. Recall that DO is characterized by a needy, non-reciprocal, and clingy style of relating that likely creates friction inside relationships. Crying in relationships is common (Frey et al., 1983), and conflict and reunion are major contexts for crying (Avery, 1983; Hendriks, Nelson, Cornelius, & Vingerhoets, 2008) that may be differentially common among persons high in DO.

However, prior work indicates that being exposed to emotional situations or strong emotional memories are necessary but not sufficient conditions for crying (Vingerhoets et al., 2001). A third possibility is that persons high in DO cry more frequently because they gain greater relief from this behavior. Many people report feeling better after crying (Bylsma et al., 2008), although such an effect is not seen in laboratory settings (Rottenberg, Bylsma, & Vingerhoets, 2008). Making such an interpretation less likely, however, is the fact that (a) DO was positively correlated with loneliness and depressive symptoms (i.e., if they feel better it appears short-lived); and (b) persons high in neuroticism are no more likely to benefit from crying than non-neurotics (Rottenberg, Bylsma, Wolvin, et al., 2008). Preliminary work suggests that persons who experience emotions like shame and embarrassment when crying do not benefit (Bylsma et al., 2008), and this pattern would seem likely to be more, rather than less, common in persons high in DO. However, as we discuss below, these interpretations must be taken as contingent given the interactions between DO and social support.

Personality and Crying in Relational Contexts

A second major focus in the current study regarded the interactions between personality variables and aspects of the social context in which crying typically occurs. Given that crying may or may not elicit support (Averill, 1968; Harber et al., 2008; Hendriks, Croon, et al., 2008; Hendriks & Vingerhoets, 2006; Nelson, 1998; Sander, Frome, & Scheich, 2007) and may or may not lead to feeling better or to the receipt of support (Bylsma et al., 2008), a

fuller understanding of crying necessitates examinations of the interactions between individual difference factors and the contexts in which both crying and social support occur (Peter et al., 2001; Vingerhoets et al., 2000). As expected, analyses in the current report showed that although DO predicted greater crying, this effect was moderated by social support such that the positive link between DO and crying was stronger among persons reporting higher levels of social support.

In our opinion, this core finding is consistent both with social-psychological theories of crying as a communicative signal as well as with theory regarding the interpersonal functioning of DO individuals. Theory suggests that crying communicates that one is vulnerable, suffering, and/or in need of aid (Hendriks, Nelson, et al., 2008) and has benefits for the crier in terms of the empathy, sympathy, pity and/or comfort that it elicits (Buss, 1992; Cornelius, 1997, 2001; Hendriks, Croon, et al., 2008; Keltner & Kring, 1998). On this basis, we suspected that crying might be used by DO persons to engage support (i.e., ‘instrumental crying;’ Cornelius, 1997, 2001). Our data suggest that this interpretation is possible, with one important caveat: the crying behavior must be “rewarded” or, at the very least, occur in a supportive environment. Prior findings suggest that criers who received social support during crying were more likely to report mood benefits than were criers who did not and/or when the precipitating event was resolved rather than not resolved (Bylsma et al., 2008; Rottenberg, Bylsma, & Vingerhoets, 2008). To this our results add the suggestion that at least some individuals may be highly strategic in their crying such that they cry differentially more when a supportive social environment is available.

The design of our study allowed us to make the important theoretical distinction between support from family and support from friends (Antonucci & Akiyama, 1995; Fiori et al., 2011). Interestingly, we found a trend for an interaction between DO and family support but no interaction between DO and friend support in predicting crying proneness. Attachment theory suggests that affiliative behaviors are established in the context of early parental relationships (Bowlby, 1969). As such, we might expect such affiliative attachment behaviors (e.g., crying) to be especially salient in the context of relationships with family members and other significant others. Furthermore, family relationships can be seen as ‘obligatory,’ whereas friend relationships are often seen as ‘voluntary’ (Antonucci & Akiyama, 1995). DO individuals are particularly invested in receiving social support in part because they have trouble functioning autonomously. As a result, these individuals must strike a balance between crying to garner support and the potential negative consequences of crying (i.e., alienating others). Expressions of negative affect (like crying) may be acceptable in the context of obligatory family relationships, but may alienate more voluntary relationships (i.e., friendships).

Limitations and Future Directions

Although these data represent a useful contribution to work in the area, they are not without their weaknesses. First, the most obvious limitation is that imposed by a correlational and cross-sectional design. Although our primary theoretical assumption was that crying elicits support for DO individuals, we were purposefully vague in interpreting directionality in understanding our results both because of our design and because we assume that crying and support have a bidirectional relationship. In terms of Vingerhoets and colleagues’ (2000) biosychosocial model of crying, it could be that for DO individuals, having more support actually increases situational opportunities for crying (e.g., by having more contact with others), and/or that DO individuals have more difficulty with self-regulation (i.e., controlling the expression of emotions) when others are available to support them. In other words, although crying likely elicits support, support may also elicit crying. Experimental research is needed to disentangle cause and effect, although as stated above (and consistent with the biosychosocial model of crying), we believe that the association between crying and support is most likely bi-directional.

Second, and relatedly, we should remain aware that the temporal aspect of crying and social support is obscured within the current report. Crying proneness does not actually let us determine whether individuals who reported crying did so in interpersonal contexts. Vingerhoets et al. (2001) note that people appear able to suppress crying or delay it until after moving away from others and/or the elicitor; it may be that people wait for the presence/absence of specific others to cry (see Vingerhoets, 2013; Vingerhoets et al., 1997). Thus, although our data are clear in demonstrating that individuals high in DO are differentially likely to report a greater proneness to crying when they also report high social support, they do not illuminate the (interpersonal) contexts in which crying occurs or the type of crying that is being reported on. That is, we were not able to distinguish in the present study among potential types of crying (Cornelius, 1997, 2001; Nelson, 1998), although we theorized that DO individuals might be particularly likely to cry instrumentally (i.e., to elicit support).

Third, although we controlled for gender in our modeling, it remains unclear whether the personality-social support interactions described here will generalize (i.e., to males). It is known that women cry more than men (Vingerhoets, 2013), and that men and women tend to cry in somewhat different situations and for somewhat different reasons. Women are more prone to cry during conflict or when angry, whereas tears among men are more evident in situations involving tenderness (Bindra, 1972; Vingerhoets, 2013). It seems possible, for example, that views of crying as weak or self-indulgent may differentially apply to (and deter) male crying, perhaps further moderating links between DO, social support, and crying proneness. Furthermore, women are more likely to use social support based coping mechanisms than are men (Thoits, 1995), and crying and emotional expressiveness may also be support-seeking strategies used more frequently by women (Barbee et al., 1993; Flaherty & Richman, 1989). Therefore, the interactions we found in our study may not hold for a sample of just males. Unfortunately, due to the high percentage of females in our sample (84%), we did not have the power to test for three-way interactions.

Thus, future research should include experimental work in which the presence of others is manipulated for individuals of varying levels of interpersonal dependency in situations likely to elicit crying (e.g., sad film, discussion of a difficult time in one's life). Presumably, highly dependent individuals would be *more* likely to cry in the presence of another (in particular, a close other) than when alone. Such an experimental paradigm might allow us to more definitively determine whether support elicits crying (since research has already shown that crying elicits support; Hendriks, Croon, et al., 2008; Hendriks & Vingerhoets, 2006). Relatedly, qualitative research could potentially shed light on the prevalence and use of instrumental crying (Cornelius, 1997, 2001); that is, it would be interesting to determine if certain individuals either consciously or unconsciously use crying as a way to get the support they (think they) need. Finally, more research is needed with a larger sample of males to determine if and in what way gender may interact with interpersonal dependency to predict crying.

Conclusions

Testament to the contextual sensitivity of crying as a strategy that may (potentially) help ensure ongoing emotional intimacy and investment among persons who fundamentally doubt the affection of others (DO), crying was only more common among DO individuals when support was seen as high. Future research is needed to assess whether or not this behavior is actually adaptive. There is research indicating that crying may improve mood for some individuals but not others (e.g., Rottenberg, Bylsma, Wolvin, et al., 2008); it may be that crying improves mood mainly for individuals high on DO, or alternatively (or additionally) that it improves mood for DO individuals but only in the context of high levels of support. The present study is a first step in understanding the complex associations between individual differences and social support in predicting crying proneness.

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