



Brief Report

Neuroticism and attachment insecurity as predictors of bereavement outcome

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Abstract

Adult attachment dimensions as well as the personality trait neuroticism have been shown to be related to psychological adjustment after bereavement. No investigations so far have studied the relative contribution of these constructs to grief and depression. In our study of 219 bereaved parents, the two adult attachment dimensions, attachment anxiety and attachment avoidance, were compared to the personality trait neuroticism in predicting psychological adjustment. The attachment dimensions explained a unique part over and above neuroticism, but contrary to expectations, neuroticism explained more variance than attachment dimensions. Implications are discussed.

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1. Introduction

Attachment theory provides a framework for understanding individual differences in grief following the death of a close person (Bowlby, 1980). Insecurity of attachment (i.e., feelings of insecure emotional connectedness to a significant other) is in fact related to poor

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adjustment to bereavement (for a review, see Stroebe, Schut, & Stroebe, 2005). Yet personality theory also offers a promising approach to the study of such patterns, particularly (as we argue below) through the basic trait of neuroticism (McCrae & Costa, 1999). Neuroticism—characterized as a proneness to experience unpleasant and disturbing emotions (McCrae & Costa, 1999)—is related to poorer adjustment after bereavement (Meuser & Marwit, 2000). Questions about the two theoretical approaches arise then: are we measuring essentially the same construct across the two theoretical domains—or does each of these constructs have unique explanatory power?

Anxious attachment in adulthood reflects the degree to which a person worries that a partner will not be available in times of need, while avoidant attachment has been described as reflecting the extent to which a person distrusts a relationship partners' goodwill and strives to maintain autonomy and emotional distance from partners (Mikulincer, Dolev, & Shaver, 2004). It is important to emphasize that these two dimensions are not referring to generic anxiety or avoidance, but rather to anxiety or avoidance *in relationships with other persons*. Attachment security clearly has particular relevance to the domain of close relationships, and more specifically, to feelings and behaviors that occur following the ending of such relationships, as in bereavement. It is, after all, a theory of separation anxiety: the attachment behavioral system comes into play particularly in situations, where proximity to the loved person is severed (either temporarily or, as in bereavement, permanently).

Turning to the personality predictors, there are good reasons to focus on neuroticism: this trait, which includes anxiety, hostility, depression, self-consciousness, impulsiveness and vulnerability, has been shown to correlate more highly with insecure dimensions of attachment than any of the other traits (extraversion, agreeableness, conscientiousness or openness to experience). Neuroticism actually correlates even higher with attachment anxiety than with attachment avoidance (Shaver & Brennan, 1992; for a review see Nofhle & Shaver, 2006). Another reason to select neuroticism is that it has been researched extensively and is considered to be one of the most central factors of personality (McCrae & Costa, 1999).

While, to our knowledge, no previous study has investigated the comparative explanatory power of theoretical constructs from attachment and personality theories specifically with respect to bereavement outcome, some relevant investigations have been conducted in other areas. In their recent article, Nofhle and Shaver (2006) reported investigation of romantic relationships in association with the neuroticism and the attachment dimensions mentioned above. The attachment dimensions consistently predicted relationship quality better than the big five factors. In several further studies from different research areas (e.g., cosmetic surgery, jealousy) similar results were found. For example, in their study comparing the relative contributions of neuroticism and attachment dimensions in the use of cosmetic surgery, Davis and Vernon (2002) found that, although attachment anxiety and neuroticism were highly related, attachment anxiety was a better predictor of having cosmetic surgery than was neuroticism. In his study of jealousy, Buunk (1997) found that the effects of attachment style stayed virtually the same when controlling for neuroticism. Insecurity of attachment was related to high levels of jealousy.

In summary, patterns so far seem to indicate moderate relationships between attachment dimensions and neuroticism: those for anxious attachment are typically the stronger positive ones, with avoidant attachment mostly also showing a positive relationship. Interestingly, in studies examining the relative predictive power of neuroticism and attachment dimensions in predicting relationship related feelings or behavior, attachment dimensions emerged as more highly predictive than neuroticism. Again, this seemed to be particularly,

the case for anxious attachment, as found across a range of studies. However, it remains to be seen whether these patterns pertain for those enduring the loss of an interpersonal relationship through bereavement. Is there here too an added value in examining and understanding the nature of attachment among persons experiencing this type of stressor?

Thus, the general aim of our study was to try to establish the relative merits of adopting a personality theory compared to the attachment theory perspective for the prediction of bereavement outcome. To this end, we analyzed data from our longitudinal investigation of the adaptation of parents to the death of their child (see also Wijngaards-de Meij et al., 2005). More specifically, the goals of the present study were as follows: (1) to examine the relationship between anxious and avoidant attachment dimensions and neuroticism and (2) to compare the ability of the constructs neuroticism, from personality theory, and insecurity (avoidant, anxious in relationships) from attachment theory to predict bereavement outcome. In view of the overlap between the constructs of attachment security and neuroticism, and given the research findings reviewed above, we expected neuroticism to have a moderate positive correlation with the anxiety and avoidance attachment dimensions. On the basis of previous results in other domains, and given the fact that attachment theory (1) is an interpersonal relationship approach and (2) that it provides analysis of *separation* phenomenon, we expected the set of attachment dimensions to explain variance over and above neuroticism in predicting parents' outcomes. Additionally, we predicted that the adult attachment dimensions would explain more variance in grief and depression than the personality trait neuroticism.

2. Materials and methods

In total, 463 Dutch couples who had lost a child were contacted via obituary notices in local and national newspapers. Bereaved grandparents (i.e., those parents whose deceased child was a parent him/herself) were not included this investigation, given that they are likely to experience additional difficulties in their grieving. Single parents were also not included, because the study was designed to investigate couple of parents. In total, 219 parent couples (47%) agreed to participate.¹ Informed consent procedures were utilized. Parents who participated ranged in age from 26 to 68 years ($M = 42.2$, $SD = 9.1$) and their deceased child was under 30 years of age ($M = 10.2$, $SD = 9.8$). Of the deceased children, 68.7% were boys. The causes of death varied from neonatal death or stillborn (16.3%), through illness or disorder (47.7%), to accident, SIDS, suicide or homicide (36.1%). There were three points of measurement: 6, 13 and 20 months after the death of the child. The attrition rate over the 14 month period was 17.8%. Parents filled in the questionnaires separately. Biographical data about the parents, the child and circumstances surrounding the loss were gathered during an interview with the couple at the first measurement point after their loss.

2.1. Independent variables

Attachment was measured using the adult attachment scale (AAS, Collins & Read, 1990). In line with contemporary agreement on the two dimension structure of attachment,

¹ The deceased children of the non-respondents turned out to be older than the children of the parents participating in the study ($t(378) = -5.29$, $p < .001$).

two subscales, attachment anxiety and attachment avoidance, were used (Brennan, Clark, & Shaver, 1998). To construct these scales, we followed the item-structure by Hazan and Shaver (1987).² A confirmative factor analysis was conducted for both scales in which the items that had factor loadings below the .32 were not selected. The anxious attachment scale consisted of six items, e.g., ‘I often worry that my partner doesn’t love me’ and ‘I find others are reluctant to get as close as I would like’. Cronbach’s α was .61. The avoidance scale consisted of five items, e.g., ‘People are never there when you need them’ and ‘I am somewhat uncomfortable being close to others’. Cronbach’s α was .60. High scores represent more insecure attachment.

Neuroticism was measured using the neuroticism-subscale of the Eysenck Personality Questionnaire-Revised Short Scale (Eysenk & Eysenck, 1991, Dutch version by Sanderman, Arrindell, Ranchor, Eysenck, & Eysenck, 1995). This scale consists of 12 items, answered by yes or no. The subscale ‘neuroticism’ has high internal consistency, varying from .81 to .84.

2.2. Dependent variables

Grief reactions were measured with the Inventory of Complicated Grief (ICG, Prigerson et al., 1995; Dutch version by Dijkstra, 2000). The ICG consists of 19 items covering psychological aspects of grief, e.g., ‘I find it difficult to accept the death of our child’ and ‘I feel that it is unfair that I should live when our child died’. Answers are given on a 5-point scale ranging from ‘never’ (1) through ‘sometimes’ (3) to ‘always’ (5). In our study Cronbach’s alpha was .90 to .92, and test-retest coefficients varied from .81 to .88.

Depression was measured using the subscale of the Symptom Checklist-90 (SCL-90, Derogatis, 1977; Dutch version by Arrindell & Ettema, 1986). The subscale depressive symptomatology consists of 16 items. Answers are given on a 5-point scale, ranging from ‘not at all’ (1) to ‘very much’ (5). In our study Cronbach’s alpha was .94 and test-retest reliability was .86.

2.3. Control variables

Factors that were shared by parents were child’s age, cause of death, unexpectedness of the loss (5-point scale), number of remaining children and subsequent pregnancy and/or baby 20 months after the death. Cause of death was categorised in three groups: stillbirth or neonatal death (0), illness or disorder (1), or traumatic death (SIDS, accident, suicide, homicide) (2). Individual factors were gender, education (6-point scale), employment (in hours), religious affiliation (non-religious vs. religious) and professional help-seeking.

2.4. Analysis

To deal with the complications associated with having to control for multiple predictors in a dependent structure, the data were analyzed with multilevel regression analysis

² The approach used by Collins (e.g., Collins, Ford, Guichard, & Allard, 2006) differs mainly in that her avoidant scale is constructed by avoidant and secure items (of the original Hazan and Shaver conceptualisation). However, the secure items (which Collins included) were not included in constructing our avoidance scale, because the inclusion of the secure items did not improve the psychometric properties of our avoidance scale.

(Hox, 2002). A unique feature of multilevel analysis is that it works with a specific statistical model designed for nested data. In our data there is a nested structure captured by a three-level hierarchy. The three measurement moments in time are nested in one person, the father or mother. The measurements of the parents are dependent and are thereby nested in a couple. Therefore, time since death is the lowest level (1st level), nested in the individual, the parent (2nd level) and the parents are nested in a couple (3rd level). Each independent variable varies only at one specific level. Time since the loss of the child varies only at the lowest level, the time level (1st level). The individual factors of the parent differ at the individual level (2nd level). The remaining factors are the same for the parents in a couple, but these factors do vary between the couples at the shared parent level (3rd level).

2.5. Statistical procedure

First, correlations between the attachment variables and neuroticism were calculated. Starting with the multilevel procedure, intra-class correlations were calculated to indicate the proportion of variance at one specific level [after individual and loss-related risk factors (control variables) were included in the model (see Wijngaards-de Meij et al., 2005)]. For each of the two dependent variables (grief and depression) a multilevel regression analysis was done with MLwiN (Rasbash et al., 2000). First, the two individual attachment variables (avoidant attachment and anxious attachment) were put in the multilevel regression model (Model 1). Second, the two attachment variables were taken out of the model and the variable ‘neuroticism’ was put in. In the third model both the attachment variables and the variable neuroticism were included. The amount of explained variance was calculated for each model. Multilevel analysis has advantages with respect to dealing with missing data. Problems associated with panel attrition (i.e., individuals who drop out of the study) are of relevance here. According to Hox (2002) multilevel analysis leads to unbiased estimates when the panel attrition follows a pattern defined as missing-at-random (for more information see Hox, 2002; Little, Schnabel, & Baumert, 2000).

3. Results

Correlations between all the relevant variables were calculated (Table 1). Avoidant attachment and anxious attachment each had fairly small correlations with neuroticism ($r = .32$ and $r = .28$), the correlation between avoidant and anxious attachment was also small ($r = .32$) (Table 2).

When avoidant attachment and anxious attachment were included in the multilevel regression equation, both were significant ($p < .05$), as was the variable neuroticism

Table 1
Correlations

	Anxious attachment	Neuroticism	Grief	Depression
Avoidant attachment	.32	.32	.28	.34
Anxious attachment	1.00	.28	.27	.33
Neuroticism		1.00	.38	.51
Grief			1.00	.72

*All correlations are significant at the .01 level (two-tailed).

Table 2
Explained variance in grief and depression

	Grief (%)	Depression (%)
Model 1 attachment	12.9	15.9
Model 2 neuroticism	18.0	24.4
Model 3 attachment and neuroticism	22.0	27.6

($p < .05$). When all three variables were included, the strength of the associations with grief and depression diminished, but all associations remained significant ($p < .05$).

3.1. Grief

In the first model (Model 1) 12.9% of the variance was explained by the variables anxious and avoidant attachment (see Table 1). When these variables were taken out of the equation, and neuroticism was included, the variable neuroticism explained 18.0% of the unexplained variance (Model 2). When both attachment and neuroticism were included, in total 22.0% of variance was explained (Model 3). When the attachment variables were already included in the equation, adding neuroticism contributed another 9.1% resulting in a total of 22.0% for the full model (Model 3). When neuroticism was included in the model (Model 2) the addition of attachment added another 4.0%, resulting in the total of 22.0%.³

3.2. Depression

A total of 15.9% was explained by the variables anxious and avoidant attachment (Model 1). When these variables were taken out of the equation, and neuroticism was included, the variable neuroticism explained 24.4% of the unexplained variance. When both attachment and neuroticism were included, in total 27.6% of variance was explained. This implies that, when the attachment variables were included first (Model 1), adding the variable neuroticism resulted in an increase of 11.7% culminating in a total of 27.6% (Model 3). By contrast, when neuroticism was put first in the equation (Model 2), adding the attachment variables increased the percentage of explained variance by 3.2% (Model 3).

4. Discussion

The first prediction was that both constructs, attachment insecurity and neuroticism, would have unique contributions to adjustment to bereavement. This was indeed found—both had a small but unique contribution to grief and depression. In line with previous research on personality traits and adult attachment styles/dimensions, we expected attachment dimensions to explain more variance than neuroticism. Contrary to these expectations, neuroticism and not the adult attachment dimensions, explained a larger part of the variance.

³ The possible interactions between time and neuroticism and time and attachment on grief and depression were calculated. There was only a small interaction between anxious attachment and time on grief and depression. The relationship between anxious attachment and the dependent variables became weaker over time.

There are good reasons to argue that attachment should be a better predictor than neuroticism on bereavement outcome. The adult attachment approach focuses on the formation, maintenance and dissolution of interpersonal relationships, linking patterns of attachment to individual well-being. Therefore, one would expect it to be a more useful framework in understanding grief reactions. The theory of attachment security is directed at interpersonal processes. Furthermore, the division of insecurity of attachment into two dimensions leads to a more dynamic approach than the more uni-dimensional neuroticism-perspective: the attachment perspective lends itself to analyses of *processes* in relationships of individual differences and ill health by postulating underlying models of self and other.

Although the adult attachment dimensions made a unique contribution, they were not the best predictors of grief and depression. We noted that the reliabilities of the attachment scales were adequate, but not very high. It is possible that the unique contribution of attachment would have been greater, had these been better. In our view, however, the fact that attachment was not a better predictor is likely to have had more to do with the fact that our study was of parental, not spousal bereavement. The nature of a parent's attachment to a child is unique and different from that of romantic partners. As [Shaver and Tancredy \(2001\)](#) stated 'a parent who occupies the role of primary caregiver does not look to the child for protection, as safe haven or a secure base'(pp. 75–76). The concept of being (or expected to be) the safe haven is essential in the attachment relationship. In our study, the relationship with the child was broken and not the relationship with the romantic partner (we studied couples, so partner relationships were intact in our study), while the adult attachment dimensions are focused on the cognitions and emotions related to the relationship with the romantic partner. Future research should examine whether grief reactions following loss of a partner relationship *through death* might more closely parallel the findings of [Nofle and Shaver \(2006\)](#), where attachment theory was indeed a better predictor of loss of romantic partner. However, the power of neuroticism to predict outcome could also have to do with the fact that there is conceptual overlap between neuroticism and the dependent variables. Neuroticism is characterized as a proneness to experience unpleasant and disturbing emotions. According to [McCrae and Costa \(1999\)](#) there are six facets: anxiety, angry hostility, depression, self-consciousness, impulsiveness and vulnerability (though these facets were not measured in our study). It follows that, because there is conceptual overlap between neuroticism and psychological symptoms (e.g., depression, anxiety and grief), these symptoms are connected to neuroticism. This could be one other reason why neuroticism was a better predictor of depression and grief than the attachment dimensions.

A limitation of our study was that no pre-bereavement measures of personality or attachment could be taken. In prior research, although it is considered "trait-like" and reasonably stable, adult attachment style as well as personality traits have been shown to be susceptible to some change over time, for example, they may be influenced by major life-events (for review on stability of attachment see [Davila & Cobb, 2004](#), personality traits, see [Robert, Walton, & Viechtbauer, 2006](#)).

In our view, both attachment and personality theories have unique contributions to offer in understanding bereavement. Further examination of their relative impact across different types of loss (e.g., conjugal bereavement) is needed. Furthermore, it must be remembered that the power of the personality variable neuroticism in predicting outcome may be (partly) accounted for by conceptual overlap.

References

- Arrindell, W. A., & Ettema, J. H. M. (1986). *SCL-90: Handleiding bij een multi-dimensionele psychopathologie-indicator*. Swets & Zeitlinger: Lisse, The Netherlands.
- Bowlby, J. (1980). Attachment and loss (Vol. 3). New York: Basic Books.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: an integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford Press.
- Buunk, B. P. (1997). Personality, birth order and attachment styles as related to various types of jealousy. *Personality and Individual Differences*, 23, 997–1006.
- Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology*, 58, 644–663.
- Collins, N. L., Ford, M. B., Guichard, A. C., & Allard, L. M. (2006). Working models of attachment and attribution processes in intimate relationships. *Personality and Social Psychology Bulletin*, 32, 201–219.
- Davis, D., & Vernon, M. L. (2002). Sculpting the body beautiful: Attachment style, neuroticism, and use of cosmetic surgeries. *Sex Roles*, 47, 129–138.
- Davila, J., & Cobb, R. J. (2004). Predictors of change in attachment security during adulthood. In J. A. Simpson & W. S. Rholes (Eds.), *Adult attachment: theory, research, and clinical implications* (pp. 133–156). New York: Guilford Press.
- Derogatis, L. R. (1977). *SCL-90: administration, scoring and procedures manual-I for the R (revised) version*. Baltimore: John Hopkins University School of Medicine.
- Dijkstra, I. C. (2000). *Living with loss: parents grieving for the death of their child*. Enschede, The Netherlands: FeboDruk.
- Eysenk, H. J., & Eysenck, S. B. G. (1991). *Manual of the Eysenck personality scales (EPS, adult)*. London: Hodder & Stoughton.
- Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 59, 511–524.
- Hox, J. (2002). *Multilevel analysis: techniques and applications*. Mahwah, NJ: Erlbaum.
- Little, T. D., Schnabel, K. U., & Baumert, J. (2000). *Modeling longitudinal and multilevel data: Practical issues, applied approaches, and specific examples*. Mahwah, NJ: Erlbaum.
- McCrae, R. R., & Costa, P. T., Jr. (1999). A five-factor theory of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). New York: Guilford.
- Meuser, T. M., & Marwit, S. J. (2000). An integrative model of personality, coping and appraisal for the prediction of grief involvement in adults. *Omega*, 40, 375–393.
- Mikulincer, M., Dolev, T., & Shaver, P. R. (2004). Attachment-related strategies during thought suppression: ironic rebounds and vulnerable self-representations. *Journal of Personality and Social Psychology*, 87, 940–956.
- Noftle, E. E., & Shaver, P. R. (2006). Attachment dimensions and the big five personality traits: associations and comparative ability to predict relationship quality. *Journal of Research in Personality*, 40, 179–208.
- Prigerson, H. G., Maciejewski, P. K., Reynolds, C. F., Bierhals, A. J., Newsom, J. T., Fasiczka, et al. (1995). Inventory of complicated grief: a scale to measure maladaptive symptoms of loss. *Psychiatry Research*, 59, 65–79.
- Rasbash, J., Browne, W., Goldstein, H., Yang, M., Plewis, I., Healy, M., et al. (2000). *A user's guide to MLwiN*. University of London: Multilevel Models Project.
- Robert, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: a meta-analysis of longitudinal studies. *Psychological Bulletin*, 132, 1–25.
- Sanderman, R., Arrindell, W.A., Ranchor, A.V., Eysenck, H.J., & Eysenck, S.B.G. (1995). *Het meten van persoonlijkheidskenmerken met de Eysenck Personality Questionnaire (EPQ): Een handleiding*. Groningen, The Netherlands: Noordelijk Centrum voor Gezondheidsvraagstukken, RUG.
- Shaver, P. R., & Brennan, K. A. (1992). Attachment style and the big five personality traits: their connections with romantic relationship outcomes. *Personality and Social Psychology Bulletin*, 18, 536–545.
- Shaver, P. R., & Tancredy, C. M. (2001). Emotion, attachment and bereavement: a conceptual commentary. In M. S. Stroebe, R. O. Hansson, W. Stroebe, & H. Schut (Eds.), *Handbook of bereavement: consequences, coping, and care* (pp. 63–88). Washington, DC: American Psychological Association.
- Stroebe, M., Schut, H., & Stroebe, W. (2005). Attachment in coping with bereavement: a theoretical integration. *Review of General Psychology*, 9, 48–66.
- Wijngaards-de Meij, L., Stroebe, M., Schut, H., Stroebe, W., Van den Bout, J., Van der Heijden, P., & Dijkstra, I. (2005). Couples at risk following the death of their child: predictors of grief versus depression. *Journal of Consulting and Clinical Psychology*, 73, 617–623.