Psychologica Belgica
2010, 50-1&2, 49-67.
DOI: http://dx.doi.org/10.5334/pb-50-1-2-49

ANXIOUS AND DEPRESSIVE AVOIDANCE AND SYMPTOMS OF PROLONGED GRIEF, DEPRESSION, AND POST-TRAUMATIC STRESS DISORDER

Paul A. BOELEN & Jan van den BOUT
Utrecht University, The Netherlands

Following loss, people can develop symptoms of depression, Post-Traumatic Stress Disorder (PTSD), or Complicated Grief (CG) – also termed Prolonged Grief Disorder (PGD). A recent cognitive-behavioural model has proposed that avoiding confrontation with the reality of the loss (called "anxious avoidance" [AA]) and refraining from activities that could foster adjustment (called "depressive avoidance" [DA]) both play a critical role in CG/PGD. The present study examined this assumption, using self-reported data from 161 mourners. Findings showed that items constituting AA and DA represented two distinct factors. Both factors were strongly correlated with other measures of bereavement-related avoidance and both accounted for a unique part of the explained variance in CG/PGD severity, beyond relevant background variables, negative cognitions, and concomitant symptom-levels of depression and PTSD. DA also explained unique variance in depression beyond these variables. Moreover, AA and DA mediated the linkages of neuroticism, attachment anxiety, and attachment avoidance with symptom-levels of CG/PGD.

Introduction

There is increasing evidence that in an estimated 5 to 20% of bereaved people a loss gives rise to serious mental health problems such as depression, Post-Traumatic Stress Disorder (PTSD), or Complicated Grief (CG; Forstmeier & Maercker, 2007; Prigerson & Jacobs, 2001). CG, or Prolonged Grief Disorder (PGD) as it is recently termed, entails chronic, intense grief-reactions including separation distress, difficulties accepting the loss, preoccupation, and recurrent images of the lost person that cause significant impairments in functioning for at least 6 months (Prigerson, Horowitz, Jacobs, Parkes, Aslan, Goodkin et al., 2009; Prigerson, Vanderwerker, & Maciejewski, 2008). Parallel to the development of validated criteria for CG/PGD, there is increasing attention for the treatment of this condition. For instance, Shear,

---

Paul A. Boelen, Department of Clinical and Health Psychology, Utrecht University; Jan van den Bout, Department of Clinical and Health Psychology, Utrecht University.
This study was supported by an Innovative Research Incentive Veni Grant (451-06-011) from the Netherlands Organisation for Scientific Research (NWO) awarded to the first author.
Correspondence concerning this article should be addressed to Paul A. Boelen, Department of Clinical and Health Psychology, Utrecht University, PO Box 80140, 508 TC Utrecht, The Netherlands. E-mail: P.A.Boelen@uu.nl

Frank, Houck, and Reynolds III (2005) found "complicated grief treatment" – a novel treatment containing elements of interpersonal therapy and cognitive-behavioural therapy (CBT) – to be effective in the reduction of CG/PGD symptoms. Boelen, de Keijser, van den Hout, and van den Bout (2007) found evidence for the effectiveness of brief cognitive-behavioural therapy for CG/PGD. Although these findings are encouraging, not all patients included in these studies improved, leaving room to further improve and refine treatments. For the refinement of effective treatments for CG/PGD, it is essential to have more knowledge about intrapersonal processes that are involved in the development and maintenance of this condition.

Recently, we developed a cognitive-behavioural (CB) conceptualisation of CG/PGD that was designed to offer a framework for the generation of hypotheses about processes involved in this condition and to inform efficacious treatment for it (Boelen, van den Hout, & van den Bout, 2006). This model proposes that CG/PGD develops and persists under the influence of three interrelated processes: (a) insufficient elaboration of the reality of the loss resulting in a lack of integration of this reality with pre-existing knowledge about the self and the lost person stored in autobiographical memory; (b) persistent negative thinking, specifically negative assumptions about global themes (self, life, and the future) and catastrophic misinterpretations of one's own grief-reactions (e.g., "If I express my feelings, I will go mad"), and (c) avoiding stimuli that remind of the loss (called anxious avoidance) and avoiding activities that could facilitate adjustment (called depressive avoidance). The model is strongly influenced by Ehlers and Clark's (2000) model of Post-Traumatic Stress Disorder (PTSD). In addition, several of its propositions are also part of other theories of grief. For instance, Shear and Shair's (2005) recently developed "biobehavioural model of bereavement" proposes that symptoms of acute grief usually resolve following revision of the internalised representation of the deceased to incorporate the reality of the death and that failure to accomplish this integration results in CG/PGD. This notion resembles the first of the three processes from our own model. In Stroebe and Schut's (1999) "dual process model of bereavement" (DPM), confronting the loss and the associated pain (loss-orientated coping) and confronting stressors that came about as a result of the bereavement (restoration orientated coping) are both critical in the process of coming to terms with loss. This is reminiscent of, albeit not totally similar to, our model's third process proposing that anxiety-driven avoidance of "loss-orientation" (i.e., anxious avoidance) and sombreness and pessimism-driven avoidance of "restoration-orientation" (i.e., depressive avoidance) are important in the development and maintenance of CG/PGD.

Research has confirmed some of the basic hypotheses from our CB model. For instance, a recent study found evidence that a "sense of unrealness"

about the loss, conceptualised as a subjective sense of uncertainty or ambivalence about the irreversibility of the separation resulting from a lack of integration of the loss with pre-existing knowledge, plays a role in CG/PGD (Boelen, 2010). In addition, a prospective study yielded evidence that both global negative beliefs and catastrophic misinterpretations play a role in the development of CG/PGD (Boelen, van den Bout, & van den Hout, 2006). Importantly though, no studies have yet directly tested the role of depressive and anxious avoidance strategies. That is not to say that researchers have not theorised about (e.g., Ramsay, 1977) and investigated the role of avoidance in grief. For instance, in several studies we ourselves found distinct measures of cognitive avoidance (e.g., thought suppression, rumination) and behavioural avoidance (avoidance of places that remind of the loss) to be correlated with CG/PGD severity and related symptoms (e.g., Boelen, 2009; Boelen & van den Hout, 2008; Boelen, van den Bout et al., 2006). Likewise, in studies of Bonanno, Keltner, Holen, and Horowitz (1995) and Shear, Monk, Houck, Melhem, Frank, Reynolds et al. (2007) generic measures of deliberate avoidance of loss-related stimuli have been found to be significantly associated with loss-related distress. However, the distinct role of depressive and anxious avoidance as conceptualised in our CB model has not yet been studied (Boelen, van den Hout et al., 2006).

Both anxious and depressive avoidance are postulated to be detrimental. Among other reasons, anxious avoidance is assumed to maintain CG/PGD symptoms by preventing elaboration and integration of the loss, whereas depressive avoidance is assumed to block the correction of negative views of the self, life, and future that may develop following loss. Important too is that, as one of the model's three key processes (poor integration, negative thinking, and avoidance), both depressive and anxious avoidance are assumed to mediate the role of personality variables that may exert an influence on CG/PGD symptom severity, such as neuroticism and insecure attachment.

The overarching aim of this study was to advance our understanding of mechanisms involved in the development of CG/PGD by examining the role of anxious and depressive avoidance in emotional complications following loss. To this end, a nine-item Depressive and Anxious Avoidance in Prolonged Grief Questionnaire (DAAPGQ) was constructed, encompassing items that represent manifestations of both depressive avoidance (DA) and anxious avoidance (AA). Next, we tested a number of predictions derived from our CB model of CG/PGD.

With respect to the dimensionality it was predicted that (a) items of DA and AA constituted distinguishable factors rather than a single dimension. Items were subjected to a confirmatory factor analysis (CFA) to test this prediction. With respect to the linkages of DA and AA with general features of the loss, we predicted that (b) both DA and AA would diminish over time

and would thus be correlated with the time that had passed since the loss occurred. To examine convergent validity of DA and AA, we examined their correlation with other measures of loss-related avoidance (see Method section), expecting (c) that these correlations would be strong and significant. As noted, the CB model proposes that DA and AA contribute to emotional complications following loss. Accordingly, on the condition that DA and AA would emerge as separate factors in the CFA, it was expected that (d) both factors would be strongly correlated with self-reported CG/PGD severity – even when controlling for the influence of background and loss-related variables that affected DA, AA, or these symptoms. The CB model predicts that DA, AA, and negative cognitions represent partially overlapping but distinct determinants of post-loss psychopathology (Boelen, van den Hout et al., 2006). With this in mind, it was also predicted that (e) DA and AA would remain associated with symptom-levels of CG/PGD, even when controlling the shared variance between DA and AA, and the variance explained by indices of catastrophic misinterpretations of grief-reactions and global negative beliefs. The CB model also posits that DA and AA are more central to symptoms of CG/PGD, than to other emotional problems following loss. Accordingly, it was also predicted (f) that DA and AA would be more strongly related to symptom-levels of CG/PGD than symptom-levels of depression and PTSD, when controlling for the shared variance between these symptoms, as well as for the degree to which global negative beliefs and catastrophic misinterpretations were endorsed. Finally, based on the CB model, it was predicted that (g) DA and AA would mediate the linkages of neuroticism and attachment style – personality variables that have been found to be correlated with CG/PGD in previous research (e.g., Wijngaards-de Meij, Stroebe, Schut, Stroebe, van den Bout, van der Heijden et al., 2007) – with symptom-levels of CG/PGD.

Methods

Participants and procedure

Data were available from 161 bereaved people who were recruited in the context of an ongoing research program on cognitive processes in emotional problems following loss that the current study was part of. All were recruited via professional and lay mental health care workers (e.g., grief counsellors, therapists, clergy) who handed out questionnaire packets to mourners they came in contact with through their work-related or voluntary activities. The research program was approved by an institutional review board and written informed consent was obtained from all participants. Characteristics of the

sample are displayed in Table 1. Most participants were women, most had lost a partner, and losses were mostly due to illness.

Table 1
Demographic and loss-related background variables of the sample (N = 161)

Demographic Characteristics:	
Gender *(N (%))*	
Men	33 (20.5)
Women	128 (79.5)
Age (years) *(M (SD))*	53.5 (14.4)
Education (years) *(M (SD))*	15.6 (3.1)
Loss-related Characteristics:	
Deceased is *(N (%))*	
Partner	89 (53.4)
Child	16 (9.9)
Parent	39 (24.2)
Other relative	20 (12.4)
Cause of death is *(N (%))*	
Illness	90 (55.9)
Violent (accident, suicide, homicide)	19 (11.8)
Unexpected Medical Cause (e.g., heart attack)	26 (16.1)
Other cause	19 (11.8)
Time from loss in months *(M (SD))*	53.6 (80.7)
Symptom Scores *(M (SD))*:	
ICG-r	69.4 (23.1)
BDI	32.5 (8.8)
PSS-SR	11.9 (8.1)

Note: BDI = Beck Depression Inventory. ICG-r = Inventory of Complicated Grief-revised version. PSS-SR = PTSD Symptom Scale Self-Report version.

Symptom Measures

Inventory of complicated grief-revised (ICG-r)

The ICG-r is a 30-item questionnaire that taps symptoms of CG/PGD and other maladaptive grief-reactions. Participants rate the presence of symptoms in the last month on 5-point scales ranging from "never" to "always". Items (e.g., "I feel myself longing and yearning for [–]") are summed to form an overall CG/PGD severity score. The English version (Prigerson & Jacobs, 2001) and the 29-item Dutch version (Boelen, van den Bout, de Keijser, & Hoijtink, 2003) have adequate psychometric properties. In the present sample, the α was .96.

PTSD symptom scale self-report version (PSS-SR)

The PSS-SR is a 17-item measure of PTSD symptom severity. Respondents rate the frequency of symptoms on 4-point scales ranging from "not at all" to "five or more times per week/almost always". The index event was defined as "the death of your loved one" (e.g., "How often did you have unpleasant dreams or nightmares about the death of your loved one?"). The English (Foa, Riggs, Dancu, & Rothbaum, 1993) and Dutch versions (Engelhard, Arntz, & van den Hout, 2007) have good psychometric properties. In the present sample, the α was .88.

Beck depression inventory (BDI)

The BDI is a frequently used 21-item measure of depressive symptoms. It contains 21 groups of four statements representing depressive symptoms at increasing levels of severity. Items are summed to form an overall depression severity score. The English (Beck, Steer, & Brown, 1996) and Dutch versions of the BDI (Van der Does, 2002) have adequate psychometric properties. The α in this sample was .92.

Personality measures

Revised experiences in close relationships questionnaire (ECR-r)

The shortened version of the ECR-r (Fraley, Waller, & Brennan, 2000) was used to measure two components of insecure attachment, namely attachment anxiety (i.e., a person's predisposition toward anxiety and vigilance about rejection and abandonment) and attachment avoidance (i.e., a person's discomfort with closeness and dependency or a reluctance to be intimate with others). Attachment anxiety was tapped by a 5-item scale and attachment avoidance by a 6-item scale. Respondents rate their agreement with statements on 7-point scales ranging from "strongly disagree" to "strongly agree". In the present sample, the attachment anxiety and attachment avoidance scales had α's of .80 and .75 respectively.

Neuroticism scale from the Eysenck personality questionnaire (EPQ-N)

The Neuroticism subscale from the EPQ (Eysenck, Eysenck, & Barrett, 1985) was used to assess neuroticism. Respondents indicate their agreement with 12 statements (e.g., "I am a nervous person") using a dichotomous (yes/no) response format. The α was 0.79.

Measures of negative cognitions and avoidance

Grief cognitions questionnaire (GCQ) subscales self, life, future, and catastrophic misinterpretations

The GCQ is a 38-item measure of negative bereavement-related cognitions (Boelen & Lensvelt-Mulders, 2005). In the current study, four of its nine subscales were used, namely the subscales Self (six items, e.g., "Since [–] is dead, I am of no importance to anybody anymore"), Life (four items, e.g., "My life has no purpose anymore, since [–] died"), Future (five items, e.g., "In the future I will never become really happy anymore"), and Catastrophic Misinterpretations of grief (four items, e.g., "If I would fully realise what the death of [–] means, I would go crazy"). Internal consistencies of the four scales in the current sample were: Self, $\alpha = .86$; Life, $\alpha = .90$; Future, $\alpha = .83$; Catastrophic Misinterpretation of grief, $\alpha = .87$. Scores on the Self, Life, and Future scale were averaged to obtain one "global negative beliefs" index. This was done to limit the number of predictor variables in subsequent regression analyses.

Depressive and anxious avoidance in prolonged grief questionnaire (DAAPGQ)

The DAAPGQ was specifically constructed for the current study to examine the role of depressive and anxious avoidance (DA and AA) as defined in Boelen, van den Hout et al.'s (2006) CB theory of CG/PGD. Nine items were formulated, based on interviews with mourners suffering from emotional complications after their loss and literature on coping with loss. Five items were constructed to tap DA and four items to tap AA. Items are shown in Table 2. Participants rated their agreement with each item on 8-point scales ranging from "not at all true for me" to "completely true for me". Psychometric properties of the scale are described below.

Measure of avoidance strategies (MAS)

The MAS is a 10-item measure of bereavement-related avoidance strategies that includes 4 brief subscales (Boelen, 2009; Boelen & van den Hout, 2008). It was included in this study to examine convergent validity of the DAAPGQ. We included three of its subscales, namely the subscale Ruminative Avoidance (two items, $\alpha = .57$, e.g., "I ponder about the question why [–] died"), the subscale Suppression (3 items, $\alpha = .76$, e.g., "I try to keep my feelings and thoughts about the loss under control"), and the subscale Continuing Bonds (two items, $\alpha = .62$, e.g., "I cherish particular objects that are closely linked with [–]"). Participants rated how often they usually engaged in these behaviours on 11-point scales ranging from "never" to "all the time". Subscale total scores were calculated as the summed subscale item scores.

Table 2
Factor loadings of items from the depression and anxious avoidance in prolonged grief questionnaire (DAAPGQ)

		Factor 1 Depressive Avoidance	Factor 2 Anxious Avoidance
1	Since [–] is dead, I do much less of the things that I used to enjoy.	.82	
2	Since [–] died, I avoid activities that used to give me satisfaction, because these activities now seem meaningless to me.	.80	
3	I avoid doing activities that used to bring me pleasure, because I feel unable to carry out these activities.	.84	
4	I develop very few new activities since [–] died, because I am unable to do so.	.80	
5	Since [–] died, there are several activities, hobby's, and acquaintances that I pay much less attention to.	.79	
6	I avoid to dwell on the fact that [–] is dead and will never return.		.62
7	I avoid situations and places that confront me with the fact that [–] is dead and will never return.		.61
8	I avoid to dwell on painful thoughts and memories connected to his/her death.		.80
9	I deliberately retrieve positive memories related to [–] as a means to avoid thinking about the fact that [–] is dead and will never return.		.52

Results

Dimensionality and internal consistency of the DAAPGQ

To address hypothesis (a) CFA was used to compare the fit of a unitary model with the fit of a two-factor model with distinct DA and AA factors. Outcomes showed that the one-factor model did not fit the data (CFI = 0.88, TLI = 0.85, RMSEA = 0.14). The two-factor model with two distinct, but correlated factors fit significantly better than the unitary model ($\chi^2_{\text{difference}}$ = 41.02, Δdf = 1, $p < .001$) and had reasonably good fit estimates (CFI = 0.94, TLI = 0.92, RMSEA = 0.10). Modification indexes indicated that the fit would improve when error-terms of the first and third AA items (items 6 and 8 in Table 2) were allowed to correlate. Given the similarity in content of both items, we assumed that these correlations reflected non-random measurement error stemming from content overlap. Accordingly, we tested the fit of an adjusted two-factor model in which these error terms were allowed to be correlated. This model was a significant improvement over the second

model ($\chi^2_{difference}$ = 13.3, Δdf = 1, $p < .05$) and had good fit estimates (CFI = 0.96, TLI = 0.94, RMSEA = 0.08). Table 2 shows factor loadings of this model. The correlation between the DA and AA factors was 0.77. Internal consistencies of the DA and AA subscales were .90 and .74 respectively and did not improve with the deletion of a single item.

Descriptive statistics

Table 1 shows mean scores on the ICG-r, BDI, and PSS-SR. Scores were all in the subclinical range (cf. Boelen, 2010; Engelhard et al., 2007; Van der Does, 2002). Normality data indicated that BDI scores, PSS-SR scores, GCQ subscale scores, AA scores (DAAPGQ), and MAS Suppression scores were positively skewed. Therefore, these scores were log-transformed in all analyses described below. Transformations reduced non-normality of the variables.

Variation in DA and AA as a function of time and other demographic and loss-related background variables

To examine hypothesis (b) we examined the degree to which DA and AA varied as a function of demographic and loss-related variables. As expected, DA and AA were inversely related with time from loss (r = -.29, $p < .001$ and r = -.17, $p < .05$, respectively). Moreover, DA and AA were inversely related with years of education (r = -.17, $p < .05$ and r = -.37, $p < .001$, respectively) and positively associated with age (r = .17, $p < .05$ and r = .19, $p < .05$, respectively). In addition, DA and AA varied as a function of kinship ($F(3, 160) = 6.76$, $p < .001$ and $F(3, 160) = 4.64$, $p < .01$ respectively). Post-hoc tests showed that those who lost a parent had significantly lower DA scores than those who lost a partner ($p < .001$) or child ($p < .01$) and significantly lower AA scores than those who lost a partner ($p < .01$). AA and DA did not vary as a function of cause of loss or gender (Fs < 2.8, ps > .05).

Convergent validity of DA and AA

To test hypothesis (c) correlations between DA, AA, and the MAS scores were calculated. The correlation of DA with MAS Suppression was r = .71, with MAS Rumination was r = .57, and with MAS Continuing Bonds was r = .36. The correlation of AA with MAS Suppression was r = .57, with MAS Rumination was r = .57, and with MAS Continuing Bonds was r = .41 (all ps < .001). Findings support the convergent validity of DA and AA.

Association of DA and AA with symptom-levels of CG/PGD, depression, and PTSD

Next, to test hypotheses (d), (e), and (f), we examined associations of DA and AA with the severity of symptoms of CG/PGD, depression, and PTSD. We also examined the degree to which associations remained significant when taking into account relevant demographic and loss-related background variables, negative cognitions, and concomitant symptoms. Relevant background variables were those that were associated with DA and/or AA (see above) and those associated with symptom-levels. CG/PGD severity varied as a function of age (r = .20), years of education (r = -.30), time from loss (r = -.28, ps < .01), and kinship ($F(3, 160) = 17.73$, $p < .001$). Depression varied as a function of time from loss (r = -.18, $p < .05$), and kinship ($F(3, 160) = 4.28$, $p < .01$). PTSD severity varied as a function of education (r = -.21, $p < .01$), time from loss (r = -.24, $p < .01$), and kinship ($F(3, 160) = 9.04$, $p < .001$). Three regression analyses were run with CG/PGD, depression, and PTSD severity consecutively treated as dependent variables. Predictors were entered sequentially in blocks. First, relevant background variables were entered (block 1), followed by DA and AA scores (block 2). Then, scores on the GCQ subscales were entered (block 3). Finally, we entered concomitant symptoms (e.g., symptom-levels of depression and PTSD when CG/PGD severity was the dependent variable) in order to examine the associations of DA and AA with each symptom measure, when controlling for the shared variance between symptoms. Outcomes of the regressions are summarised in Table 3.

Block 1: background variables

Relevant background variables explained 30.6%, 10.2%, and 20.7% of the variance in symptom-levels of CG/PGD, depression, and PTSD severity. Time, education, child loss, and parent loss explained unique variance in CG/PGD severity. None of the variables explained unique variance in depression and PTSD severity.

Block 2: DA and AA

In block 2, DA and AA added 40.7%, 46.6%, and 38.7% to the explained variance in CG/PGD, depression, and PTSD severity respectively. Child loss, parent loss, DA, and AA explained unique variance in CG/PGD severity. DA explained unique variance in depression severity. DA and AA explained unique variance in PTSD severity.

Block 3: negative cognitions

Negative cognitions added 11.4%, 13.6%, and 6% to the explained variance in CG/PGD, depression, and PTSD severity. Unique correlates of CG/

Table 3

Summary of regression analyses predicting symptom-levels of CG/PGD, depression, and PTSD

	Block 1: Demographics			Block 2: Depressive and Anxious Avoidance			Block 3: Negative Cognitions			Block 4: Concomitant Symptoms		
	CG/PGD	DEP	PTSD	CG/PGD	DEP	PTSD	CG/PGD	DEP	PTSD	CG/PGD	DEP	PTSD
	β	β	β	β	β	β	β	β	β	β	β	β
Background Variables												
Age	-.059	-.109	-.139	-.037	-.111	-.124	.032	-.040	-.076	.055	-.022	-.079
Time from loss	-.154*	-.104	-.143	-.014	.054	-.003	-.014	.046	.001	-.018	.048	-.007
Education	-.162*	-.092	-.164	-.046	-.041	-.071	-.034	-.015	-.066	-.014	.009	-.045
Partner Loss	.168	.160	.095	.086	.073	.015	.040	.014	-.013	.043	.013	-.037
Child Loss	.202*	.149	.183	.132*	.058	.109	.095	.031	.079	.072	-.006	.022
Parent Loss	-.266*	-.106	-.230	-.170*	-.003	-.135	-.138	.036	-.116	-.110*	.090	-.059
Depressive and Anxious Avoidance												
Depressive Avoidance				.493***	.724***	.540***	.286***	.491***	.401***	.141*	.330***	.105
Anxious Avoidance				.277***	.032	.199**	.138**	-.084	.089	.120*	-.129	.047
Negative Cognitions												
Global Negative Beliefs							.255***	.409***	.121	.192***	.338***	-.133
Catastrophic Misinterpretations							.278***	.144*	.256***	.198***	.029	.073
Concomitant Symptoms												
Complicated Grief										-	.132	.496***
Depression										.074	-	.131
PTSD										.270***	.306***	-
R^2	.306	.102	.207	.714	.568	.594	.828	.704	.654	.859	.748	.742
R^2 change	.306	.102	.207	.407	.466	.387	.114	.136	.060	.032	.044	.088
F change	10.75***	2.76*	6.34	102.52***	77.78***	68.67	46.82***	32.60***	12.23***	15.78***	12.12***	23.92***

Note: CG/PGD = complicated grief/prolonged grief disorder. DEP = depression. PTSD = Post-Traumatic Stress Disorder. * p < .05. ** p < .01. *** p < .001.

PGD severity were DA, AA, global negative beliefs, and catastrophic misinterpretations. Unique correlates of depression severity were DA, global negative beliefs, and catastrophic misinterpretations. Unique correlates of PTSD severity were DA and catastrophic misinterpretations.

Block 4: concomitant symptoms

In block 4, depression and PTSD scores added a small but significant amount of 3.2% to the explained variance in CG/PGD symptom severity. Apart from parent loss and concomitant PTSD, DA, AA, global negative beliefs, and catastrophic misinterpretations explained unique variance in CG/PGD severity in this final model. CG/PGD and PTSD severity added 4.4% to the explained variance in depression. Concomitant PTSD, DA and global negative beliefs were unique correlates of depression in this final model. Finally, CG/PGD and depression severity added 8.8% to the explained variance in symptom-levels of PTSD. CG/PGD severity was the single variable explaining unique variance in PTSD severity in this fourth block.

Tests for mediation

To test hypothesis (g), six distinct mediational models were tested in which DA and AA were considered as separate mediators of the linkages of neuroticism, anxious attachment, and avoidant attachment with CG/PGD symptom severity. Mediational models were tested using guidelines of Baron and Kenny (1986). Four criteria had to be met to establish mediation. First, the independent variable (IV) had to be significantly associated with CG/PGD severity (Step 1 - estimation of "path c"). Second, the independent variable had to be significantly associated with the mediator (Step 2 - estimation of "path a"). Third, the mediator had to be significantly associated with CG/PGD severity (Step 3 - estimation of "path b"). Finally, the effect of the IV on CG/PGD severity should attenuate when controlling for the mediator (Step 4 - estimation of "path c'"). The mediator variable could be considered a "partial mediator" when the association of the IV with CG/PGD severity would be reduced but still would be significant, and a "perfect mediator" when it became non-significant. If Steps 1 through 4 were met, Sobel's test was conducted to examine if the mediational pathway was significant (Preacher & Hayes, 2004; Sobel, 1982). In all regression analyses, we controlled for age, education, time, and kinship as these variables were associated with CG/PGD severity.

Outcomes of the regression are summarised in Table 4. Findings showed that both DA and AA were partial mediators of the linkage between neuroticism and symptom-levels of CG/PGD (see Models 1 and 2). With respect to attachment, DA emerged as a perfect mediator of the linkage between

Table 4
Summary of mediational analyses

Model	Path a	Path b	Path c	Path c'	Sobel's test
1 N → DA → CG/PGD	1.46 (0.26)***	1.23 (0.12)***	3.91 (0.48)***	2.12 (0.41)***	4.92**
2 N → AA → CG/PGD	0.03 (0.01)***	39.23 (4.90)***	3.91 (0.48)***	2.69 (0.43)***	2.89**
3 Attachment Anxiety → DA → CG/PGD	0.49 (0.12)***	1.46 (0.13)***	1.01 (0.26)***	0.30 (0.19) ns	3.84**
4 Attachment Anxiety → AA → CG/PGD	0.01 (0.003)**	48.10 (5.33)***	1.01 (0.26)***	0.48 (0.21)*	3.40**
5 Attachment Avoidance → DA → CG/PGD	0.26 (0.12)*	1.47 (0.12)***	0.70 (0.24)**	0.32 (0.17) ns	2.13*
6 Attachment Avoidance → AA → CG/PGD	0.01 (0.003)*	49.91 (5.12)***	0.70 (0.24)**	0.35 (0.19) ns	2.27*
7 N → DA → depression	1.46 (0.26)***	0.006 (0.001) ***	0.022 (0.003) ***	0.013 (0.002)***	4.10***
8 Attachment Anxiety → DA → depression	0.489 (0.124) ***	0.008 (0.001) ***	0.006 (0.001) ***	0.002 (0.001)**	3.54***
9 Attachment Avoidance → DA → depression	0.260 (0.119)*	0.008 (0.001)***	0.004 (0.001)**	0.002 (0.001)*	2.11*

Note: Paths are unstandardised regression weights (SE). AA = Anxious Avoidance. CG/PGD = complicated grief/prolonged grief disorder. DA = Depressive Avoidance. N = neuroticism
* $p < .05$. ** $p < .01$. *** $p < .001$.

anxious attachment and CG/PGD severity (Model 3), whereas AA partially mediated this association (Model 4). Finally, both DA and AA were perfect mediators of the linkage between attachment avoidance and CG/PGD severity (Models 5 and 6).

The previous section showed that DA made a unique and specific contribution to the explained variance in depression severity, above and beyond concomitant symptom-levels of PTSD and negative beliefs. Hence, it was deemed relevant to explore whether or not DA also mediated possible associations of neuroticism, anxious attachment, and attachment avoidance with depression. Accordingly, three additional mediational models were tested: Neuroticism → DA → Depression (Model 7), Attachment Anxiety → DA → Depression (Model 8), and Attachment Avoidance → DA → Depression (Model 9). Outcomes of the regression analyses and Sobel tests conducted to examine these models are summarised in Table 4. Outcomes showed that DA was a partial mediator of the linkages between these three personality variables and depression symptom severity.

Discussion

Research has shown that different forms of deliberate avoidance behaviours in the aftermath of the death of a close loved one are related to emotional complications following loss (e.g., Boelen & van den Hout, 2008; Bonanno et al., 1995; Shear et al., 2007). In line with these findings, in our recently developed CB model of CG/PGD, avoidance behaviour is regarded as one of three processes that are critical to the development and maintenance of this condition – the other two processes being a lack of integration of the loss with the autobiographical knowledge base and negative thinking (Boelen, van den Hout et al., 2006). In this model, we tried to come up with a parsimonious distinction between DA and AA in an attempt to specify the forms of avoidance that are particularly maladaptive in coming to terms with loss. DA reflects depressive withdrawal and restriction from activities, that is assumed to be driven by negative expectations about the *effects* of engaging in potentially helpful behaviours (e.g., "Meeting friends will not make me feel better") and *one's abilities* to do so (e.g., "I am unable to take up new responsibilities"). AA has been defined as occurring when mourners avoid confrontation with the reality of the loss, driven by fear that confrontation with this reality is unbearable and will have disastrous consequences, such as going "mad".

The current study represents the first attempt to examine the role of DA and AA in emotional problems following loss, using the newly constructed 9-item DAAPGQ. The main findings can be summarised as follows. First,

CFA confirmed that items constituting DA and AA represented two distinct correlated factors, rather than a single dimension. Both factors had high internal consistencies. Importantly, these findings confirm the distinction between both constructs made in the CB model. Second, it was found that both DA and AA scores were significantly lower in those whose bereavement was of longer duration. Yet, correlations were low suggesting that, once present, tendencies to avoid the reality of the loss (AA) and active adjustment (DA) only marginally decline under the influence of time. A third main finding was that both DA and AA were significantly related with other indices of loss-related avoidance, which supports the convergent validity of these constructs. It is noteworthy that both DA and AA were highly associated with items tapping loss-related rumination (e.g., "I ponder about the question why [–] died"). This supports the notion that, as in PTSD (cf. Ehlers & Clark, 2000), in the context of grief, rumination can represent a form of cognitive avoidance (Boelen, van den Bout et al., 2006; Stroebe, Boelen, van den Hout, Stroebe, Salemink, & van den Bout, 2007).

Next, we examined associations of DA and AA with symptom-levels of CG/PGD, depression, and PTSD in a series of regression analyses. A fourth main finding was that, as predicted, both AA and DA were correlated with symptom-levels of CG/PGD, even when we controlled for the influence of relevant background and loss-related variables. Notably, correlations remained significant when we controlled for the influence of loss-related global negative beliefs and catastrophic misinterpretations. In fact, DA, AA, loss-related global beliefs, and catastrophic misinterpretations each were unique correlates of CG/PGD severity. These findings are in line with one of the basic premises of our cognitive-behavioural model (Boelen, van den Hout et al., 2006) which postulates that these variables represent distinguishable processes, each accounting for a unique part of the explained variance in CG/PGD.

Apart from CG/PGD, we also examined associations of DA and AA with symptom-levels of depression and PTSD and tested the specificity of DA and AA to these three symptom-clusters. Findings showed that DA but not AA was significantly associated with depression severity, even when controlling for relevant background variables, negative cognitions, and concomitant symptoms. Yet, neither DA nor AA was associated with PTSD severity when controlling for these variables. The finding that DA was also specifically associated with depression runs counter to our prediction that DA and AA would be specific to CG/PGD. However, the finding of a significant linkage between DA and depression severity is not unexpected as, by definition, depression is associated with a reduction of normal activity levels.

In our final round of analyses, we tested the hypothesis that DA and AA would mediate the linkage of neuroticism, attachment anxiety, and attachment avoidance with CG/PGD severity. Indeed, in keeping with earlier find-

ings (Wijngaards-de Meij et al., 2007) we found that neuroticism and both attachment dimensions were significantly related with the severity of CG/PGD. Importantly though, these associations attenuated when we controlled for DA and AA. Stated differently, in distinct mediational models, it was found that DA and AA were significant mediators of the linkages between neuroticism, attachment anxiety, and attachment avoidance on the one hand, and CG/PGD severity on the other hand. These findings confirm another notion that is central to our CB model, namely, that DA and AA mediate the contribution of personality factors to the development and maintenance of CG/PGD. Given that DA turned out to be a significant correlate of depression, we also examined mediational models in which DA mediated the association of neuroticism and the attachment dimensions with depression severity. Findings showed that DA emerged as a significant mediator in these analyses.

Several limitations should be kept in mind when interpreting outcomes of this study. First, the cross-sectional design precludes any conclusions about causality. The current findings are in accord with the notion that DA and AA contribute to CG/PGD severity following loss. However, prospective and experimental studies are needed to establish the causal role of these variables in post-loss psychopathology. In a related vein, prospective studies are needed to test the notion that personality factors such as neuroticism and insecure attachment style precede the tendency to engage in avoidance of the reality of the loss and making active adjustments which, in turn, precedes the maintenance of CG/PGD and depression. A second caveat is that this study mostly relied on women who were bereaved by the loss of their partner due to an illness. Thus, generalisation of the findings to non-assessed groups should be done with caution. A third limitation is that only few additional measures of loss-related avoidance were used to assess convergent validity of the DA and AA constructs. It would be relevant for future studies to explore the validity of DA and AA, taking into account other measures of deliberate grief-avoidance such as the one constructed by Shear et al. (2007) and more general (not specifically loss-related) measures of avoidance, such as the Cognitive-behavioural Avoidance Scale (Ottenbreit & Dobson, 2004).

Notwithstanding these considerations, the current study is the first to provide evidence for the role of DA and AA in emotional problems following loss, by showing that both forms of avoidance are distinct, that both make a significant unique contribution to the explained variance in symptom-levels of CG/PGD – even when controlling for negative cognitions and concomitant symptoms of depression and PTSD, and that both DA and AA mediate the associations of neuroticism, attachment avoidance, and attachment anxiety with CG/PGD symptom severity. As such, the findings support important assumptions from our CB model (Boelen, van den Hout et al., 2006). Moreover, indirectly, findings support the distinction and distinct importance of loss-

orientation and restoration orientation as conceptualised within the DPM (Stroebe & Schut, 1999). If future studies would confirm that both forms of avoidance are involved in the development and maintenance of CG/PGD, this would suggest that targeting these behaviours is important in the treatment of this condition. Boelen, van den Hout et al. (2006) have described several interventions based on general cognitive-behavioural therapy that can be used to reduce the maladaptive avoidance behaviours. For instance, exposure to stimuli that are reminders of the loss could be used to target AA. In addition, to curb DA, therapists could use pleasant event scheduling (helping the person to schedule activities he/she previously enjoyed and that will likely give a sense of achievement) and systematic activation (helping the person to achieve specific occupational, recreational, and social goals by identifying and planning steps towards these goals). There is quite some evidence for the effectiveness of exposure in the treatment of CG/PGD (Boelen et al., 2007; Ramsay, 1977; Shear et al., 2005). Less clear is the effectiveness of directly targeting DA using the aforementioned and other interventions. Research in the field of depression suggests that behavioural activation and related interventions are very effective (Cuijpers, van Straten, & Warmerdam, 2007; Hopko, Lejuez, Ruggiero, & Eifert, 2003). This may well also be the case in the treatment of CG/PGD. "Restoration of a satisfying life" and "a focus on personal life goals" were part of Shear et al.'s (2005) Complicated Grief Treatment. However, the isolated effectiveness of interventions directly targeting DA and AA remains unclear. Future studies could explore this topic to further enhance our understanding of the role of DA and AA in CG/PDG.

References

Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.

Beck, A.T., Steer, R.A., & Brown, G.K. (1996). *Beck Depression Inventory-II.* San Antonio, TX: The Psychological Corporation.

Boelen, P.A. (2009). The centrality of a loss and its role in emotional problems among bereaved people. *Behaviour Research and Therapy, 47*, 616-622.

Boelen, P.A. (2010). A Sense of "Unrealness" about the Death of a Loved-One: An Exploratory Study of its Role in Emotional Complications among Bereaved Individuals. *Applied Cognitive Psychology, 24*, 238-251.

Boelen, P.A., de Keijser, J., van den Hout, M.A., & van den Bout, J. (2007). Treatment of complicated grief: A comparison between cognitive behavioral therapy and supportive counseling. *Journal of Consulting and Clinical Psychology, 75*, 277-284.

Boelen, P.A., & Lensvelt-Mulders, G.J.L.M. (2005). Psychometric properties of the Grief Cognitions Questionnaire (GCQ). *Journal of Psychopathology and Be-*

havioral Assessment, 27, 291-303.

Boelen, P.A., van den Bout, J., de Keijser, J., & Hoijtink, H. (2003). Reliability and validity of the Dutch version of the Inventory of Traumatic Grief. *Death Studies, 27*, 227-247.

Boelen, P.A., van den Bout, J., & van den Hout, M.A. (2006). Negative cognitions and avoidance in emotional problems after bereavement: A prospective study. *Behaviour Research and Therapy, 44*, 1657-1672.

Boelen, P.A., & van den Hout, M.A. (2008). The role of threatening misinterpretations and avoidance in emotional problems after loss. *Behavioural and Cognitive Psychotherapy, 36*, 71-88.

Boelen, P.A., van den Hout, M.A., & van den Bout, J. (2006). A cognitive-behavioral conceptualization of complicated grief. *Clinical Psychology: Science and Practice, 13*, 109-128.

Bonanno, G.A., Keltner, D., Holen, A., & Horowitz, M.J. (1995). When avoiding unpleasant emotions might not be such a bad thing: Verbal-autonomic response dissociation and midlife conjugal bereavement. *Journal of Personality and Social Psychology, 69*, 975-989.

Cuijpers, P., van Straten, A., & Warmerdam, L. (2007). Behavioral activation treatments of depression: A meta-analysis. *Clinical Psychology Review, 27*, 318-326.

Ehlers, A., & Clark, D.M.. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy, 38*, 319-345.

Engelhard, I.M., Arntz, A., & van den Hout, M.A. (2007). Low specificity of symptoms on the post-traumatic stress disorder (PTSD) symptom scale: A comparison of individuals with PTSD, individuals with other anxiety disorders and individuals without psychopathology. *British Journal of Clinical Psychology, 46*, 449-456.

Eysenck, S.B.G., Eysenck, H.J., & Barrett, P.T. (1985). A revised version of the Psychoticism scale. *Personality and Individual Differences,* 6, 21-29.

Foa, E., Riggs, D., Dancu, C., & Rothbaum, B. (1993). Reliability and validity of a brief instrument for assessing post-traumatic stress disorder. *Journal of Traumatic Stress, 6*, 459-474.

Forstmeier, S., & Maercker, A. (2007). Comparison of two diagnostic systems for complicated grief. *Journal of Affective Disorders, 99*, 203-211.

Fraley, R.C., Waller, N.G., & Brennan, K.A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology, 78*, 350-365.

Hopko, D.R., Lejuez, C.W., Ruggiero, K.J., & Eifert, G.H. (2003). Contemporary behavioral activation treatments for depression: Procedures, principles, and progress. *Clinical Psychology Review, 23*, 699-717.

Ottenbreit, N.D., & Dobson, K.S. (2004). Avoidance and depression: The construction of the Cognitive-Behavioral Avoidance Scale. *Behaviour Research and Therapy, 42*, 293-313.

Preacher, K.J., & Hayes, A.F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*, 717-731.

Prigerson, H.G., Horowitz, M.J., Jacobs, S.C., Parkes, C.M., Aslan, M., Goodkin, K., Raphael, B., Marwit, S.J., Wortman, C., Neimeyer, R., Bonanno, G.A., Block,

S.D., Kissane, D., Boelen, P.A., Maercker, A., Litz, B.D.W., Johnson, J.G., First, M.B., & Maciejewski, P.K. (2009). Prolonged Grief Disorder: Psychometric validation of criteria proposed for DSM-V and ICD-11. *PLoS Medicine, 6*, e1000121. doi:10.1371/journal.pmed.1000121.

Prigerson, H.G., & Jacobs, S.C. (2001). Traumatic grief as a distinct disorder: A rationale, consensus criteria, and a preliminary empirical test. In M.S. Stroebe, R.O. Hansson, W. Stroebe, & H.A.W. Schut (Eds.), *Handbook of bereavement research. Consequences, coping, and care* (pp. 613-647). Washington DC: APA Press.

Prigerson H.G., Vanderwerker L.C., & Maciejewski, P.K. (2008). A case for inclusion of Prolonged Grief Disorder in DSM-V. In M.S. Stroebe, R.O. Hansson, W. Stroebe, & H.A.W. Schut (Eds.), *Handbook of Bereavement Research and Practice: 21st Century Perspectives* (pp. 165-186). Washington, DC: American Psychological Association Press.

Ramsay, R.W. (1977). Behavioural approaches to bereavement. *Behaviour Research and Therapy, 15*, 131-135.

Shear, K., Frank, E., Houck, P.R., Reynolds III, C.F. (2005). Treatment of complicated grief. A randomised controlled trial. *Journal of the American Medical Association, 293*, 2601-2608.

Shear, K., Monk, T., Houck, P., Melhem, N., Frank, E., Reynolds, C., & Sillowash, R. (2007). An attachment-based model of complicated grief including the role of avoidance. *European Archives of Psychiatry and Clinical Neuroscience, 257*, 453-461.

Shear, K., & Shair, H. (2005). Attachment, loss, and complicated grief. *Developmental Psychobiology, 47*, 253-267.

Sobel, M.E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological Methodology 1982* (pp. 290-312). Washington DC: American Sociological Association.

Stroebe, M.S., Boelen, P.A., van den Hout, M.A., Stroebe, W., Salemink, E., & van den Bout, J. (2007). Ruminative coping as avoidance: A reinterpretation of its function in adjustment to bereavement. *European Archives of Psychiatry and Clinical Neuroscience, 257*, 462-472.

Stroebe, M., & Schut, H. (1999). The dual process model of coping with bereavement: rationale and description. *Death Studies, 23*, 197-224.

Van der Does, A.J.W. (2002). *Handleiding bij de Nederlandse versie van Beck Depression Inventory – second edition (BDI – II - NL) [Manual for the Dutch version of the Beck Depression Inventory – second edition (BDI – II - NL)].* Amsterdam, NL: Harcourt.

Wijngaards-de Meij, L., Stroebe, M., Schut, H., Stroebe, W., van den Bout, J., van der Heijden, P., & Dijkstra, I.C. (2007). Neuroticism and attachment insecurity as predictors of bereavement outcome. *Journal of Research in Personality, 41*, 498-505.

Received June 18, 2009
Revision received August 10, 2009
Accepted September 10, 2009