Attachment and Severity of Grief:

The Mediating Role of Negative Appraisal and Inflexible Coping

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Abstract

According to the Dual Process Model of coping with bereavement (DPM; Stroebe & Schut, 1999), adjustment to bereavement involves a flexible oscillation between two types of coping strategies: loss-oriented (LO) and restoration-oriented (RO). This model postulates that extremely anxious or avoidant attachment disturbs the oscillation process by focusing more on one type of strategy, either LO or RO. The present study examined this assumption. We recruited 321 bereaved individuals who had lost a romantic partner. Our results showed that less negative appraisal of bereavement-related stressors, as well as higher use of RO strategies, mediated the link between attachment avoidance and low severity of grief reactions. However, the DPM variables were not found to mediate the link between attachment anxiety and elevated grief reactions. We discuss how these results provide an empirical basis of the DPM.

Keywords: grief; bereavement; attachment; appraisal; coping; flexibility

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Grieving the loss of a significant person is one of the most stressful experiences in human life. Although most bereaved individuals finally come to terms with such an experience, a significant minority (i.e., 10-15 %) suffer from a prolonged negative mood and specific grief reactions (Bonanno & Mancini, 2008). Specific grief reactions may become problematic if they extend over a period of time, including increased morbidity and higher risk of mortality (e.g., Prigerson et al., 2009). Such grief reactions include yearning (e.g., craving, pining, or longing for the deceased; physical or emotional suffering), difficulty accepting the loss, difficulty moving on with life (e.g., making new friends, pursuing new interests), feeling that life is unfulfilling, empty, or meaningless since the loss or feeling stunned, dazed or shocked by the loss (for a complete list of prolonged grief criteria, see Prigerson et al., 2009). Given the debilitating nature of these enduring grief reactions, it is crucial to examine the way such reactions are developed and maintained.

During last few decades, attachment theory has been one of the most comprehensive and widely used theoretical framework to understand why some individuals develop severe grief reactions (for a review, see Mikulincer & Shaver, 2008; Stroebe, Schut, & Stroebe, 2005). According to attachment theory, two separate attachment styles -anxious and avoidant- are differentially linked to grief reactions. Individuals with anxious attachment tend to show a lack of trust in oneself, anxiety about separations, abandonments, lack of love and support, extensive emotionality, inability to cope with attachment-related feelings and tendency to be clinging. As such, bereaved individuals with anxious attachment are likely to be very emotional and preoccupied after the loss of a significant other. More specifically, they often experience intense anxiety, anger, and sorrow, yearn inconsolably for the lost partner, fail to accept the loss and have difficulties in establishing a new life structure. This pattern is termed chronic grief. In striking contrast, individuals with avoidant attachment mistrust others, are compulsively independent, avoid deep emotional interdependency, and suppress

rather than express (attachment-related) emotions and other signs of need or vulnerability. As such, bereaved individuals with avoidant attachment are likely to avoid overt emotional upset about the loss of a significant other. They will also often use defensive reactions to inhibit anxiety and sadness, downplay the importance of loss, and try to steer clear of thoughts and memories focused on the deceased. This pattern is termed prolonged absence of conscious grieving. Several studies have found a strong relation between the aforementioned attachment styles and adjustment to grief. Quite consistently, anxiously-attached individuals often develop an overly dependent relationship to the deceased person and experience chronic bereavement-related distress and depression (Field & Sundin, 2001; Fraley & Bonanno, 2004; Wayment & Vierthaler, 2002). However, the results of studies examining avoidantly-attached individuals are less consistent. Some research has shown little or no association between avoidant attachment and grief, depression, or distress (e.g., Field & Sundin, 2001; Wayment & Vierthaler, 2002) while other research has shown a positive association between avoidant attachment and severity of grief (e.g., Wijngaards-de Meij, et al., 2007, Boelen & Klugkist, 2010; Boelen & van den Bout, 2010; van der Houwen, Stroebe, Schut, Stroebe, & van den Bout, 2010b). Finally, while the avoidant attachment has been shown to be associated with somatic symptoms in the research by Wayment and Vierthaler (2002), it has also been associated with resilience over time (Fraley & Bonanno, 2004).

While some aspects of attachment theory remain unclear, researchers have consistently found attachment insecurities to be among the major factors affecting bereavement outcomes. Thus, by using attachment theory, researchers may be able to help identify and support individuals at risk (e.g., Parkes, 2006; Zech & Arnold, 2011; Zech, Ryckebosch-Dayez, & Delespaux, 2010). However, to do so, the underlying processes connecting attachment style and poor adjustment need to be better understood. A few researchers have begun to examine these processes. For example, Field and Sundin (2001) showed that poor adjustment due to anxious attachment was mediated by the appraised inability to cope with the loss. In another study, van der Houwen, Stroebe, Schut, Stroebe,

and van den Bout (2010b) showed that the detrimental effects of avoidant attachment dimension were mediated by rumination and threatening interpretations of grief reactions (i.e., negative and fearful interpretations of grief reactions that are not necessarily indicative of disturbance). Finally, Boelen and van den Bout (2010), as well as Boelen and Klugkist (2010), recently examined two processes they defined as anxious avoidance (i.e., avoiding stimuli that remind one of the reality of the loss) and depressive avoidance (i.e., avoiding activities that facilitate adjustment). In their study, Boelen and Klugkist included negative cognitions (which are defined as negative thoughts about one's life) in their mediation analyses. Taken together, results of both studies demonstrated that anxious and depressive avoidance, as well as negative cognitions, mediated the link between anxious and avoidant attachment and severe grief reactions.

In fact, according to *Cognitive Stress Theory* (Folkman, 2001; Lazarus & Folkman, 1984), two core transactional phases are thought to be fundamental when dealing with a stressful event (i.e., the loss of a significant person). The process starts with a person and his or her beliefs, values, goals, and resources for coping, and a specific event or transition that signals a change or a threatened change in the status of a valued goal. The first phase consists of (1) the appraisal of the valence of the event and (2) the appraisal of the ability to cope with the event. Together, both appraisals affect the particular emotion the person will experience and its intensity (Folkman, 2001). Threatening grief interpretations as well as appraised inability to cope with the loss -two processes investigated in the previously reported studies- could be associated to this first phase. The appraisal process is supposed to shape the way an individual copes with the distressful event. After the individual finishes appraising the valence of the event, the second phase commences which consists of appraising their ability to cope with the event. That is, in what ways will they manage (reduce, master, tolerate) the external or internal demands of the stressful situation. The coping process is likely to change according to person-environment transactions. The change may be a result of extraneous modifications in the environments, the effects of coping efforts directed at changing the environment,

or coping efforts directed at altering the meaning of the event. Anxious and depressive avoidance investigated in the studies reported earlier could be associated to this second phase. According to the model, the more maladapted the coping strategies are, the less favorable the adjustment will be.

Yet despite the advances in understanding the mediating factors involved in how individuals cope with grief, no study has investigated appraisal and coping strategies as a global process. The coping strategies investigated in prior research have been based on a cognitive-behavioral conceptualization of complicated grief -which identify potentially dysfunctional processes that could lead to complicated grief (see Boelen, van den Hout & van den Bout, 2006)- but not on a model of coping with bereavement including specific dysfunctional and functional bereavement-related strategies. Thus, a more integrated investigation of both appraisal and coping processes, as well as further exploration about specific bereavement-related coping strategies, is still needed to better understand the processes underlying the relation between insecure attachments and adjustment to grief. The present study fills this lacuna.

The Present Study

To investigate both appraisal and bereavement-related coping processes, we used the *Dual Process Model of Coping with Bereavement* (DPM) (Stroebe & Schut, 1999; 2010). The DPM states that effective coping strategies need to be adapted to the specific stressors that are encountered during bereavement. Based on previous theorizations and empirical data, this model integrates and extends preexisting but limited bereavement coping models (for a review see Hansson & Stroebe, 2007). In addition and particularly relevant for the present concern, the DPM proposes that specific coping styles are adopted by bereaved individuals according to their degree of attachment insecurity. Consequently, coping strategies are believed to mediate the link between insecure attachments and adjustment to bereavement.

For a more comprehensive explanation of the proposed processes that mediate the relation between attachment insecurity and adjustment to grief, we first describe the coping strategies that

lead to maladjustment and then present the processes involved in attachment insecurity and the resulting adjustment pattern. According to the DPM, effective coping with bereavement includes dealing with both loss-oriented (LO) and restoration-oriented (RO) stressors. LO stressors include coping with the loss of the person him/herself (e.g., working through grief, searching for the meaning of the loss, thinking it through). By contrast, RO stressors include coping with secondary stressors that come about as an indirect consequence of the bereavement (e.g., coping with psychosocial changes such as changing identity or role from "wife" to "widow", dealing with an instrumental transition such as the need to assume new tasks and responsibilities). The specification that there are two categories of bereavement-related stressors may bring about a shifting from demands of a situation to the other focus of attention. Stroebe and Schut (1999) designated this dynamic coping process *oscillation*. Following this principle, the ability to effectively cope with the loss of a significant person implies an ability to remain flexible in dealing with both LO and RO stressors. According to the DPM, deficits in flexible coping processes is assumed to directly contribute to the occurrence of either severe, or absent grief reactions. Thus, on the one hand, according to the DPM, individuals who focus exclusively on LO stressors, avoiding the RO stressors, should experience chronic grief. On the other hand, bereaved individuals who focus exclusively RO stressors, avoiding the LO stressors, should experience little or no sign of grieving.

Interestingly, such deficits should be explained by specific insecure attachments to the deceased person (Stroebe et al., 2005). More specifically, anxiously-attached individuals are known to show extreme dependence on their partners as well as elevated preoccupation with relationship closeness. Thus, they are expected to appraise the loss of their attachment figure in a very negative way and to focus exclusively on LO (e.g., yearning and rumination) as a result of which they are at greater chance to develop severe grief reactions. Extremely avoidantly-attached individuals, on the other hand, keep safe distance from attachment figures and develop compulsive independence. After the loss of a significant person, they would deny the need for grieving over the loss of an attachment

figure, move thoughts related to the loss away and maintain their own ability to cope alone. Accordingly, they are expected to downplay the impact of the loss and focus exclusively on RO as a result of which they would be more prone to show few signs of grieving (i.e., absence of grieving in extreme cases).

To our knowledge, no study has yet examined the relation between insecure attachments and adjustment to grief as function of the specific role played by the appraisal of the loss-related stressors and the ability to oscillate between LO and RO stressors. Thus, the aim of the present study was to investigate the extent to which the appraisal and oscillation process mediates the influence of both anxious and avoidant attachments on grief reactions. In line with attachment theory (Mikulincer & Shaver, 2008) as well as the DPM (Stroebe et al., 2005), we predicted that individuals with higher attachment anxiety would exhibit more negative appraisals of LO and RO stressors, conduct primarily LO coping strategies, and show increased grief reactions. In striking contrast, we expected that individuals with higher attachment avoidance would exhibit lower negative appraisal of LO and RO stressors, conduct primarily RO coping strategies and show lower levels of grief reactions.

Method

Participants

Participants were recruited via announcements on French-speaking online discussion forums related and unrelated to bereavement (e.g., Doctissimo, Vivre son deuil; a detailed list can be provided by the lead author). Recruitment started in April 2009 and took place over a 12-month period. To take part into the study, participants had to meet 2 criteria: (1) be at least 18 years of age and (2) have experienced the death of a romantic partner. The sample consisted of 321 bereaved individuals (285 women), ranging from 17 to 88 years old ($M = 41$, $SD = 14.2$). Participants were predominantly French (75%) and well educated (54% having at least a post-graduate degree). Losses were mostly due to disease (45%) or accident (27%) and time since the death ranged from 6 days to 38 years ($M = 2.84$, $SD = 5.17$). Time since the death was less than 6 months for 1/3 of the sample,

between 6 to 12 months for 1/5, between 12 to 36 month for 1/5 and above 36 months for 1/5. Most

of the participants reported having lost a spouse (45%) or a companion (23%) after 3 to 779 months

from the start of the relationship. The complete characteristics of the sample are displayed in Table 1.

Procedure

After a brief description of the study, participants were invited to fill in an online

questionnaire. This questionnaire assessed background and loss-related variables, attachment to the

deceased partner, grief-related reactions, appraisal of LO and RO stressors as well as oscillation

between LO and RO strategies. After completing the questionnaire, participants were thanked for

their participation.

Measures

Background and loss-related variables. Participants were asked about their gender, age,

nationality, intimacy with the deceased ("to what extent were you intimate with your romantic

partner, i.e., the tendency to usually share emotions, concerns or ideas"; possible responses ranged

from 0 (*not intimate*) to 6 (*highly intimate*)), relationship type with the deceased (i.e., husband/wife,

companion, common law spouse, boy- or girlfriend, other), the length of their relationship and

cohabitation, the date and the cause of the death (i.e., natural, disease, accident, homicide, suicide,

other to be specified).

Attachment. A French version of the Experience in Close Relationships (ECR), initially

created by Brennan, Clark, and Shaver (1998), was used to assess attachment to a romantic partner

and adapted in order to assess the individual's current perception of their attachment to the deceased

partner. Participants rated on a 7-point scale ranging from 1 (*not at all*) to7 (*very much*) the extent to

which each item supported how they had been feeling about their romantic relationship before the

death. The ECR includes 18 items addressing the anxious dimension of attachment (e.g., *I worried*

about being abandoned) and 18 addressing the avoidant dimension of attachment (e.g., *I preferred*

not to show my partner how I felt deep down). The reliability and validity of the scales have

consistently been demonstrated in previous studies (e.g., Brennan et al., 1998). In the present sample, Cronbach's alpha coefficients were high for both the anxious dimension ($\alpha = .86$) and the avoidant dimension scales ($\alpha = .88$).

Appraisal. In order to evaluate how individuals appraised grief-related stressors, we created a 10-item questionnaire. Five items tapped LO stressors (e.g., *the death of the loved one; the loss of the bond with the loved one; the absence of the loved one; the emotions related to the loss; being widowed*) and five items tapped RO stressors (e.g., *planning future life; administrative tasks after the death of the loved one; tasks that the bereaved used to contribute to; the future life without the loved one*). Each item rated the extent to which individuals evaluated bereavement-related stressors negatively on a 7-point scale ranging from *not at all negative* (1) to *extremely negative* (7). A unique total LO and RO appraisal score was computed by computing the mean of the 10 items[1]. The score represented the extent to which bereavement-related stressors were appraised negatively. The scale presented good internal consistency with a relatively high Cronbach's alpha ($\alpha = .84$).

Oscillation between coping strategies. To examine the extent to which individuals oscillated between coping strategies, we created a 24-item grief coping questionnaire (for a complete description of the scale, see authors, in prep/2012). Items were primarily based on the 22-item Inventory of Daily Widowed Life (IDWL; Caserta & Lund, 2007) but were adapted to avoid certain shortcomings in the original questionnaire (e.g., confusion of some coping items with outcomes). The factor analysis with 2 fixed factors and varimax rotation, revealed that each item loaded on only one of two distinct factors that corresponded either to LO coping strategies (e.g., *trying to understand and accept the death; taking time to think about the loss and the deceased; trying to accept living without the deceased*), or to RO coping strategies (e.g., *trying to imagine life without the deceased; trying to accept being a widow/er; trying to develop a social, as well as an affective, life*). The 24-item questionnaire presented good internal consistency. Cronbach's α was .85 for LO strategies and .86 for RO strategies. Participants rated on a 5-point scale ranging from 1 (*never: less than once a*

month) to 5 (*always: several times a day*) the frequency in which they used the strategy during the past month. A sixth position could be checked for non-applicable situations (e.g., non-existing stressors). Non-applicable situations were recoded as missing values. Participants who presented more than 25% missing values on at least one subscale (either the LO, or the RO subscale) were excluded from the analyses (n = 21). The individuals excluded on this basis did not statistically differ from the rest of the sample in terms of age, gender, time elapsed since the death, length of partnership cohabitation, length of the relationship, marital status (spouse vs. girl/boyfriend), number of children or grandchildren, nor level of education. The LO and RO continuous scores were calculated by averaging items on each subscale. Based on Caserta and Lund's (2007) work, an oscillation score was computed by subtracting the total RO score from the total LO score. Hence, the oscillation score ranged from -5 (exclusively RO focus) to +5 (exclusively LO focus). A score around 0 indicated equal use of both LO and RO strategies. Participants with a score lower than 3 on both subscales were excluded (n = 22) to distinguish patterns of equilibrium between the two kinds of coping strategies from a pattern of very limited use of both coping strategies. Thus, the final sample for the oscillation measure included 278 participants. The LO strategies, RO strategies, and oscillation scores were normally distributed; skewness and kurtosis measures for each of these distributions had absolute values < 1.10.

Grief adjustment. A French version of the Inventory of Traumatic Grief (ITG) was used to measure severity of grief symptoms (Prigerson & Jacobs, 2001). The ITG is a 30-item self-report instrument assessing symptoms of grief severity (also called prolonged grief), as defined by a consensus panel (Prigerson et al., 1999). Levels of symptom severity during the last month were evaluated with five-point Likert scales ranging from 1 (*never*) to 5 (*always*). A continuous score ranging from 30 to 150 was computed by summing the items. The reliability and validity of the scale have been consistently found (e.g., Prigerson & Jacobs, 2001). In the present sample, Cronbach's alpha was high ($\alpha = .94$).

Table 1

Means, standard deviations and range for background and loss characteristics of the sample as well as mediation model variables (N = 321)

Background characteristics	
Sex (N (%))	
Men	36 (11.2)
Women	285 (88.8)
Age (in years) (M (SD); minimum – maximum)	41 (14.2); 17-88
Nationality (N (%))	
French	240 (74.8)
Belgian	37 (11.5)
Canadian	27 (8.4)
Other	17 (5.3)
Intimacy (M (SD); minimum – maximum)	5.53 (.8); 1-6
Level of education (N (%))	
Primary school	6 (1.9)
Secondary school	134 (41.8)
University degree / Some post-secondary school	172 (53.6)
Other	9 (2.8)
Status of the deceased person (N (%))	
Spouse (married couple)	143 (44.5)
Companion	75 (23.4)
Common law spouse	60 (18.7)
Boy- or girlfriend	39 (12.1)
Other	4 (1.2)
Length of relationship (in months) (M (SD); minimum – maximum)	161.7 (154.2); 3-779
Length of cohabitation (in months) (M (SD); minimum – maximum)	137.3 (151.3); 0-740
Time since the death (in month) (M (SD); minimum – maximum)	30.5 (56.1); 0.2-454
< 6 months	107 (33.4 %)
>=6 months and <12 months	69 (21.5%)
>=12 months and <36 months	71 (22.1 %)
>=3 years or more	73 (22.7 %)
Cause of death (N (%))	
Natural	17 (5.3)
Disease	143 (44.5)
Accident	86 (26.8)
Homicide	9 (2.8)
Suicide	31 (9.7)
Other	17 (5.3)
Mediation model variables	
Anxious dimension of attachment (M (SD); minimum – maximum)	3.25 (1.14); 1.11 - 6.78
Avoidant dimension of attachment (M (SD); minimum – maximum)	1.99 (.84); 1 - 5.33
Negative appraisal (M (SD); minimum – maximum)	5.12 (1.08); 1.40 - 7
Oscillation score (M (SD); minimum – maximum)	.57 (1.14); -3.34 - 2.93
ITG score (M (SD); minimum – maximum)	98.95 (21.68); 32 - 139

Note. ITG = Inventory of Traumatic Grief (Prigerson et al., 2001) is a measure of prolonged grief severity. M = Mean. SD = Standard deviation.

Data reduction and normality assumption

Participants who exhibited responses more than 3.29 standard deviations below or above the mean were discarded as outliers (less than .01% of the data). Before performing the analysis, the normality of the data was assessed using the Kolmogorov-Smirnov test. Data for the anxious dimension score, $D(274) = 1.08$, $p = .19$, the appraisal score, $D(274) = 1.30$, $p = .07$, as well as the oscillation score, $D(274) = .67$, $p = .77$, were not significantly different from the normal distribution. However, data for the avoidant dimension score, $D(274) = 2.29$, $p < .01$, and the ITG score, $D(274) = 1.44$, $p < .05$, were significantly different from the normal distribution. Due to positively skewed distributions, we used a logarithmic transformation prior to analysis for these two scores. Means, standard deviations and range of the mediation model variables are displayed in Table 1.

<div align="center">

Results

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Correlations

Zero-order correlations were computed among the variables. As shown in Table 2, there were significant correlations, ranging from moderate to high, among all variables except for the anxious dimension variable, which was not significantly associated with negative appraisal and the oscillation variables. More precisely, results showed that the avoidant dimension was negatively correlated with negative appraisal, oscillation, and grief severity. These results suggest that as avoidant dimension scores went up, individuals rated grief-related stressors as less negative and the more frequently individuals used RO strategies, the less severe they rated the symptoms of grief.

It should be noted that when we used a partial correlation controlling for the anxious dimension, all the correlations between avoidant dimension and other variables remained strongly significant. In addition, when using a partial correlation controlling for the avoidant dimension, the anxious dimension and the negative appraisal were all significantly associated, $r(275) = .21$, $p < .001$, indicating that bereaved individuals showing higher attachment anxiety tended to appraise bereavement-related stressors more negatively. However, even when using a partial correlation

controlling for avoidant dimension, the anxious dimension remained unrelated to the oscillation,

suggesting that attachment anxiety was not associated with a particular pattern of coping. Finally, all

correlations remained significant even after performing partial correlations controlling for the time

since the death, suggesting that links between attachment dimensions, negative appraisal, oscillation

as well as adjustment to grief were not influenced by the time since the death.

Table 2. *Zero-order correlations for attachment dimensions, mediators, and severity of grief*

reactions (N= 278)

	1.	2.	3.	4.
1. Anxious dimension	-			
2. Avoidant dimension	.27**	-		
3. Negative appraisal	.09	-.34**	-	
4. Oscillation	-.01	-.33**	.61**	-
5. ITG	.19**	-.21**	.70**	.61**

Note. Oscillation was calculated by subtracting the total RO score from the total LO score (a highly
positive score indicates a primarily use of LO strategies whereas a highly negative score indicates a
primarily use of RO strategies); ITG = Inventory of Traumatic Grief (Prigerson et al., 2001) is a
measure of *severity of grief reactions*.
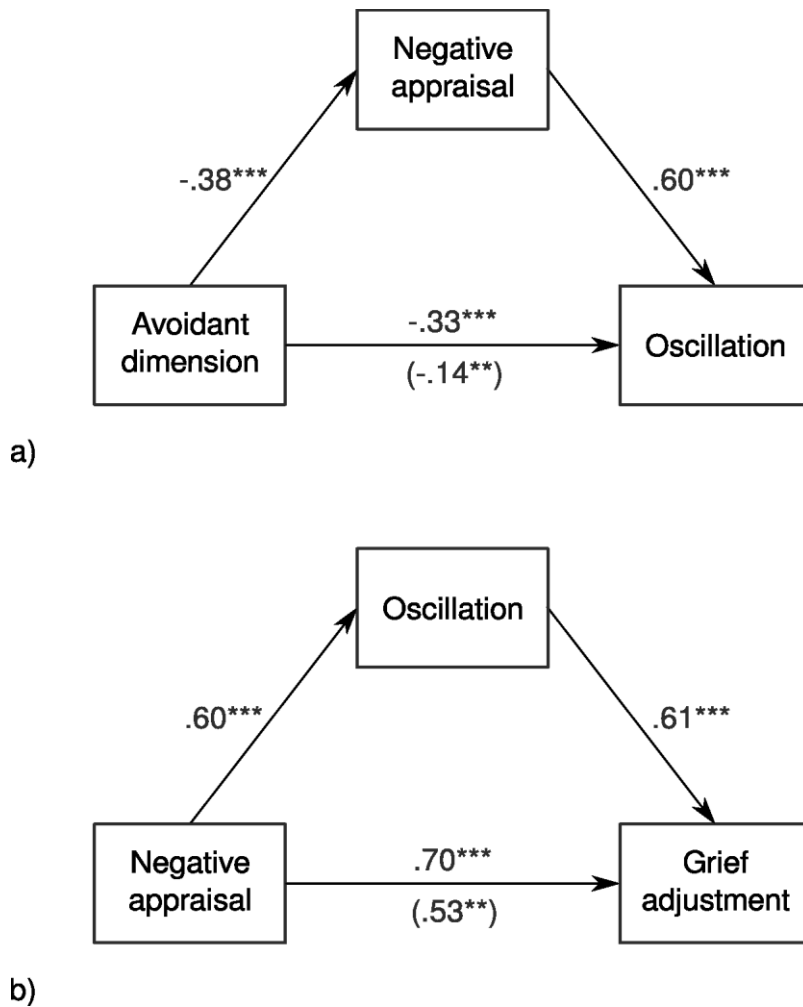**$p < .01$; ***$p < .00$.

Mediational analyses

To examine whether both negative appraisal and oscillation mediated the effects of the

attachment dimensions on grief adjustment, we performed meditational analyses following the

procedure outlined by MacKinnon, Fairchild, and Fritz's (2007). This procedure is a variation of the

Sobel (1982) test that accounts for the non-normal distribution of the αβ path through the

construction of asymmetric confidence intervals (MacKinnon et al., 2007). Older approaches of

mediational analysis (e.g., Sobel test) have been compromised by their reliance on the erroneous

assumption that the product of regression are normally distributed and have been surpassed by the

asymmetric distribution of products approach (MacKinnon et al., 2007). Indeed, as observed by

MacKinnon, Lockwood, Hoffman, West, and Sheets (2002), tests of significance of and confidence

limits for indirect effects based on the distribution of products method have more accurate Type I

error rates and more power than other commonly used tests. Finally, this procedure tests the product

of the coefficients for the effects of (a) the independent variable to the mediator (α), and (b) the

mediator to dependent variable when the independent variable is taken into account (β).

We initially examined whether negative appraisal mediated the effects of attachment

dimensions on oscillation. Regarding the anxious attachment dimension, inconsistent with a

statistically significant mediation, the 95% confidence interval of the indirect path ($\alpha\beta$ product)

contained zero (lower limit = -.003, upper limit = 0.02). Results from the Sobel test supported this

conclusion, $Z = 0.13$, $p = .45$.

With regard to the avoidant attachment dimension, consistent with a significant statistical

mediation, the 95 % confidence interval of the indirect $\alpha\beta$ path did not overlap with zero (lower limit

= -1.66, upper limit = -.96) and the Sobel test was statistically significant, $Z = 5.20$, $p < .0001$. As

shown in Figure 1a, this finding indicated that the avoidant attachment dimension decreased

oscillation through reduced negative appraisal.

Figure 1. (a) Negative appraisal as a mediator of the effects of avoidant attachment dimension on the oscillation score; (b) Oscillation as a mediator of the effects of the negative appraisal on grief adjustment.

a)

b)

Note. Coefficients appearing above lines are β weights for uncorrected paths. Coefficient in parentheses appearing below lines is β weight for corrected path.
 **$p < .01$. ***$p < .001$.

We also examined whether the oscillation score mediated the effect of negative appraisal on grief adjustment. Consistent with a statistically significant mediation, the 95% confidence interval of the indirect path ($\alpha\beta$) did not contain zero (lower limit = .01, upper limit = .03). Results from the Sobel test supported this conclusion, $Z = 5.12$, $p < .0001$. As shown on Figure 1b, this finding suggested that reduced negative appraisal improved grief adjustment through heightened focus on RO.

In order to test the impact of time since the death on the two previous mediational models, mediational analyses were performed separately for 3 different categories of time (i.e., less than 6 months; 6 to 36 months; over than 36 months). Results were consistent with statistically significant mediations across all three time periods, suggesting that the length of time from when their intimate partner died does not affect the associations outlined in the meditational model.

In brief, the present findings suggest that attachment avoidance decreases the oscillation score through reduced negative appraisal of bereavement-related stressors, which then, in turn, leads to improved grief adjustment.

Discussion

The main goal of this study was to examine the severity of grief reactions from a transactional perspective. In accordance with this perspective, we hypothesized that the severity of grief reactions would fluctuate as a function of the transactions between the bereaved individuals and their environment. In particular, we hypothesized that such transactions would mediate the relation between how the bereaved individuals felt during their previous relationship to the deceased and the severity of grief reactions after the loss of a romantic partner. Two core transactional/meditational processes were highlighted: the appraisal of the bereavement-related event and the coping strategies used to deal with it.

In accordance with the attachment theory (Bowly, 1980; Mikulincer & Shaver, 2008; Shaver & Tancredy, 2001; Stroebe et al., 2005), we first tested whether attachment dimensions would be associated with grief adjustment in bereaved romantic partners. In line with our prediction, the anxious dimension was significantly and positively correlated to elevated grief reactions. This is consistent with attachment theory and the *Dual Process Model of Coping with Bereavement* (DPM)'s assumptions about the development of more pronounced grief reactions for anxiously attached individuals (Bowly, 1980; Mikulincer & Shaver, 2008; Shaver & Tancredy, 2001; Stroebe et al., 2005). Indeed, anxiously attached individuals are more prone to invest heavily in their relationships

and develop high dependency on their romantic partners (Mikulincer & Shaver, 2008). Consequently, it is not surprising that losing a highly invested partner would lead to intense grief, failure to accept the loss and trouble in planning new roles and activities without the deceased (Mikulincer & Shaver, 2008). Also consistent with the hypotheses, attachment avoidance with the deceased partner was associated with less severe grief reactions. These results may suggest that the affective bond to the deceased may have been weaker for more avoidant individuals, leading them to grieve less. The strong negative correlation between specific attachment avoidance and the intimacy to the deceased in the present study ($r(278) = -.58, p < .001$) support this suggestion. However, these results contradict recent studies that have shown an association between avoidant attachment and elevated grief severity (e.g., Boelen & Klugkist, 2011; Boelen & van den Bout, 2010; Wijngaards-de Meij, et al., 2007). Such inconsistencies could be explained by Jerga, Shaver, and Wilkinson's study (2011), which has shown that general attachment avoidance (i.e., feelings and behaviors in general close relationships) was associated with higher grief severity while specific attachment avoidance (i.e., feelings and behaviors related to the past relationship with the deceased) was associated with less grief reactions. Consistent with these findings, previous studies which had shown a positive relation between attachment avoidance and grief reactions had used general attachment avoidance measurement, while the present study which has shown the exact opposite results, has used a specific attachment avoidance measurement. According to such differences in the pattern of result, even if both constructs of attachment (i.e., general and specific) are theoretically close, future studies investigating the link between attachment insecurities and adjustment to grief should take into consideration the distinction between general specific attachment avoidance.

  For the first time in the bereavement field, we next examined whether the association between attachment dimensions and grief adjustment would be mediated by the appraisal of bereavement-related stressors and the oscillation process between bereavement-related coping strategies. Our results found that the anxious dimension was positively correlated to negative appraisal when

controlling for avoidant dimension. These results suggest that higher attachment anxiety is associated to more negative appraisal of bereavement-related stressors. Nevertheless, no link was shown between the anxious dimension and the oscillation process even when controlling for avoidant dimension. Thus, the mediating role of negative appraisal and oscillation processes between anxious dimension of attachment and grief severity was not supported. These unexpected results may have occurred because we defined and operationalized coping strategies as voluntary and controlled processes (e.g., "I take time to think about the deceased person") (cfr. DPM; Stroebe & Schut, 2010). Yet, previous research has shown that the anxious dimension was associated with a lack of control in emotional processing. For example, Mikulincer and Orbach (1995) found that anxiously-attached individuals had quickest access to targeted painful memories and showed these memories to spread like wildfire throughout their cognitive system. In line with these results, it is possible that processing tendencies of individuals with a high score of attachment anxiety hamper or deregulate effective coping strategies (e.g., calm exploration of the meaning of the death without being overwhelmed by intrusive and uncontrolled distressing thoughts). This would suggested that bereaved individuals with high anxiety may be less inclined to develop primarily LO coping strategies than passive intrusion of grief or dysfunctional preoccupation with the deceased, which could in turn explain the absence of an association between the anxious dimension and a specific type of bereavement-related coping strategy. It is worth adding that anxiously-attached individuals have been theoretically linked with rumination, a passive process of repetitive thoughts and preoccupation focused on the loss and the deceased (Stroebe et al., 2005). Interestingly, rumination has been strongly associated with maladjustment to grief (for a review, see Stroebe et al., 2007). Thus, future research should examine whether the relation between the anxious dimension of attachment and severe grief reactions would be mediated by uncontrolled and overwhelming processes such as rumination as opposed to controlled coping strategies.

In terms of the the avoidant dimension, our results showed that the relation between avoidant dimension and grief reactions was mediated by a reduced negative appraisal of LO and RO stressors as well as a reduced oscillation score, indicating an inclination for the use of RO coping strategies rather than LO strategies. These results remained significant even when controlling for time since the death of their partner. This suggests that the appraisals of bereavement-related stressors, as well as the coping strategies used to deal with such an event, remained important meditational processes of the relation between attachment avoidance and grief reactions whether the bereaved individual had experienced the death more or less recently. However, it is worth noting that these results do not disconfirm the postulation that coping strategies evolve across time (Caserta & Lund, 2007; Stroebe, Schut, & Stroebe, 2005; see authors, in prep/2012). Rather, they simply suggest that both processes remain relevant across time when examining variations in grief reactions.

These results support our hypotheses. Moreover, the fact that the mediational models remained significant at different periods of time as well as beyond the acute months of grieving is in line with the *Cognitive Stress Theory* (Lazarus & Folkman, 1984). Indeed, this model focuses less on the characteristics of the event (e.g., the time since the loss) than on the transactional processes of appraisal and coping strategies to explain adjustment (i.e., grief severity). The results also converge with previous research that demonstrated an association between attachment avoidance and anxious avoidance, defined as the tendency to keep attention away from the reality of the loss (e.g., "I avoid the place where {XXX} died") (Boelen & Klugkist, 2010; Boelen & van den Bout, 2010). Indeed, such coping strategies could be negatively linked to the LO strategies which in turn could be associated to reduced oscillation score (i.e., less involvement in LO strategies than RO ones). However, in these previous studies, attachment avoidance was also shown to be associated to depressive avoidance, defined as avoidance of activities that could facilitate adjustment (Boelen & Klugkist, 2010; Boelen & van den Bout, 2010). Such strategies could be negatively associated to RO

strategies as those are characterized by activities that facilitate adjustment (e.g., doing new things, attending to life changes). Further studies are needed to clarify these conflicting results.

The present results also support the results from Caserta and Lund (2007)'s study in which an unbalanced oscillation, focused primarily on RO strategies, was associated with the most favorable bereavement outcome (including lower severity of grief reactions as well as scores of depression and loneliness). At a first sight, the fact that emphasis on RO is associated with a better adjustment than a more balanced position would appear to contradict the DPM-related hypotheses. However, the results of the present study need to be cautiously interpreted. First, data collection was cross-sectional which impedes any causal conclusions. Second, marked reduction of grief reactions on the ITG measure - which taps the intensity of a large panel of grief reactions - could be associated either to patterns of resilience, which consists of favorable bereavement outcome, or to those of inhibited grief, theorized in the bereavement literature as a complicated type of grief (e.g., Bowlby, 1980). Less severe grief reactions may also be associated with less need in grieving according to the former suggestion about the avoidant dimension being linked with less strong bonding to the deceased which in turn could lead to less need in grieving. Thus, other kinds of outcomes measurement such as psychological well-being or posttraumatic growth should be included in future studies to distinguish these three patterns of adjustment. Assessment of somatization should be also included as inhibited grief has been linked with high levels of less conscious reactions such as somatic symptoms (e.g., Wayment & Vierthaler, 2002). Third, the current operationalization of oscillation was limited. Indeed, using a self-reported questionnaire as well as subtracting one total coping score from another one is a rather crude way to measure the complex process of emotion regulation that takes place in bereavement. This limitation is further discussed below. Finally, it is worth noting that even if RO strategies are associated with better adjustment, the pattern observed in the present study was rather more an equilibrium with higher RO than LO strategies than an exclusive focus on RO strategies. Indeed, in the present study, such a pattern has not been observed (as the oscillation score is calculated by the subtraction of the

RO scores from the LO scores, exclusive use of RO strategies should correspond to an oscillation score equal to -5, that was not present in our study). Accordingly, even if results showed higher RO to be associated with better adjustment, it does not contradict the DPM assumption which states that exclusive focus on RO strategies and avoidance of LO strategies should lead to inhibited grief (Stroebe & Schut, 1999). Future studies should examine whether exclusive focus on RO strategies would be associated with maladjustment.

In the present study, some limitations deserve consideration. First, whereas mediation assumes the direction of causality, our cross-sectional data does not permit us to draw conclusions about temporal precedence. Future studies should use a longitudinal design in order to better understand the causal associations involved in the development and the maintenance of severe grief reactions. Second, negative appraisal and deficits in oscillation process have been evaluated with questionnaires created for the present study. Whereas both measures presented good internal validity, further examination of the validity is still needed (see authors, in prep/2012). For example, future research should investigate whether bereavement-related appraisals have to be understood as belonging to a single factor (as it was preliminary done in the present study) rather than a composite factor. Moreover, the measure of oscillation by subtracting the RO score from the LO score did not allow for a proper distinction between oscillation or failing to use either strategy. The removal of participants with scores less than 3 on both dimensions (7% of the sample) then prevented from the investigation of potential dysfunctional processes. Indeed, scores less than 3 on both dimensions could be assimilated to avoidance of both LO and RO strategies. Yet, as explained earlier, avoidance of both LO and RO strategies could be theoretically associated to anxious avoidance and depressive avoidance respectively, two processes which were previously shown to be linked to more severe grief. Further investigation of such patterns of coping -not yet precisely formulated in the DMP-should be investigated in future studies. Finally, the method of subtraction initially conceptualized to capture a lack of oscillation does not allow us to capture disturbances in the oscillation process

(defined as a staccato fluctuation of sometimes involuntary intrusion and avoidance), another pattern of coping associated in the DPM to maladjustment (i.e., traumatic grief). To examine this alternative detrimental pattern of coping, methods other than questionnaires should be used (see Caserta & Lund, 2007; Stroebe & Schut, 2010). For example, future studies could induce shifts between RO and LO strategies with laboratory techniques for a better evaluation of potential deficit (lack or disturbance) in the oscillation process (Stroebe & Schut, 2010).

To sum up, the present study represents an important contribution to the empirical basis of an influential but not fully empirically substantiated model in the area of grief and bereavement. Since studies directly testing hypotheses derived from the DPM are rare, the present study is the first to examine the combination of general stress-coping variables (appraisal) and specific DMP variables (oscillation between coping pattern of strategies) mediating the relation between attachment dimensions and level of grief reactions. By investigating the relevant variables leading to severe grief reactions, it makes it possible to identify processes that cause or maintain the difficulties encountered by bereaved individuals and then to provide them with help that is specifically adapted to these processes (Zech et al., 2010). Consistent with this line of reasoning, findings of the present study showed that negative appraisal and oscillation processes mediated the link between attachment avoidance and low grief reactions. However, future studies are needed to confirm whether low grief reactions represent a pattern of resilience rather than an absence of grief, another form of grief maladjustment. Finally, the variables mediating the anxious dimension and strong grief reactions appear less clear. Although, the anxious dimension was shown to be associated with more negative appraisal of bereavement-related stressors, no relation was observed between the anxious dimension and the oscillation score. Because attachment anxiety represents a factor that leads to a higher risk of prolonged grief reactions, future studies should investigate more precisely the potential moderating/mediating processes that may underlie this deleterious association.

Acknowledgements

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Footnotes

[1] In our analysis, we collapsed the scores for the LO and RO items for a number of reasons. First, LO and RO scores were positively correlated [$r(321) = .58$, $p < .01$], indicating that both scores varied in the same way, with higher score in LO being associated with higher score in RO appraisal. Another reason to compute a total score of LO and RO was that similar patterns of results were observed for the two kinds of appraisal when correlations were performed with the oscillation score as well as the amount of grief reactions. More specifically, more negative appraisal of LO and RO bereavement stressors were both associated with higher scores on the oscillation measure (i.e., primarily LO strategies), respectively [$r(278) = .48$, $p < .001$] and [$r(278) = .53$, $p < .001$] as well as elevated grief reactions, respectively [$r(278) = .61$, $p < .001$] and [$r(278) = .68$, $p < .001$]. Finally, an exploratory factor analysis (principal component analysis), suggested a single factor solution. This confirmed the possibility to use one single score.