

**Understanding the importance of attachment in shame traumatic memory relation to
depression: The impact of emotion regulation processes**

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Abstract

Background: Early relationships are crucial to human brain maturation, well-being, affect regulation and self-other schema. Shame traumatic memories are related to psychopathology and recent research has shown that the quality and type of attachment relationships may be crucial in shame traumatic memories relation to psychopathology.

The current study explores a mediator model of emotion regulation processes (rumination, thought suppression and dissociation) on the association between shame traumatic memory, with attachment figures and with others, and depressive symptoms.

Method: Ninety subjects from the general community population completed the Shame Experiences Interview, assessing shame experiences from childhood and adolescence, and a battery of self-report scales measuring: shame traumatic memory, rumination, thought suppression, dissociation and depression.

Results: Mediator analyses show that emotion regulation processes, such as brooding, thought suppression and dissociation, mediate the association between shame traumatic memory with others and depression. In contrast, shame traumatic memory with attachment figures has a direct effect on depression, not mediated by emotion regulation processes, with only brooding partially mediating this relation.

Conclusion: The current findings shed light on the importance of attachment figures on the structuring of shame traumatic memories and on their impact on psychopathological symptoms, adding to recent neuroscience research and Gilbert's approach on shame and compassion. In addition, our results emphasize the relevance of addressing shame memories, mainly those that involve attachment figures, particularly when working with patients suffering from depressive symptoms and/or that find compassion difficult or scary.

Key Practitioner Message

- The quality of attachment relationships is important in how shame memories are structured and in their relation to psychopathology.
- The relationship between shame traumatic memory with attachment figures and depressive symptoms is not mediated by emotion regulation processes, (rumination, thought suppression and dissociation). In contrast, these processes emerge as mediators on the association between shame traumatic memory with others and depression.
- For people suffering from depressive symptoms, having been shamed by an attachment figure may be a major block to develop self-compassion and receive compassion from others, and may constitute an important obstacle to recovery.
- When working with patients suffering from depressive symptoms and/or that find compassion difficult or scary, it is important to target shame memories, especially those that involve attachment figures.
- In therapy with individuals with depressive symptoms and who reveal shame traumatic memories involving others, it may be pertinent to target these memories but also to evaluate and intervene on emotion regulation processes, particularly rumination, thought suppression and dissociation.

Introduction

Relationships are of crucial importance to our survival and well-being (Baumeister & Leary, 1995; Bowlby, 1969, 1973; Buss, 2003; Gilbert, 1989). Therefore, humans have evolved a suite of social motivational systems to seek and respond to attachment to carers (Bowlby, 1969; Cassidy & Shaver, 1999) and groups (Baumeister & Leary, 1995). Throughout life, social relationships, and in particular attachment relationships, are powerful physiological and psychological regulators (Cacioppo, Berston, Sheridan & McClintock, 2000; Carter, 1998). In fact, the quality of early relationships with attachment figures has significant impacts on brain maturation, specifically, on neurophysiological processes underpinning emotional maturation and regulation, and on the development of a whole range of cognitive competencies (Cozolino, 2006; Gerhardt, 2004; Guidano & Liotti, 1983; Mikulincer & Shaver, 2004, 2007; Panksepp, 1998; Schore, 2001; Siegel 2001; Teicher, 2002).

Attachment theorists argue that the nature of childhood experiences with caregivers will influence the development of internal working models of self and others, which guide feelings and thoughts about the self and feelings, thoughts, behaviors and expectations in relationships (Bowlby, 1969, 1973, 1980; Mikulincer & Shaver, 2007). In the same line, Baldwin (1992, 1997, 2005) proposed that these interpersonal/relational schema, not only influence predictions of others behaviour and one's behaviour in social interactions, but also shape the basis for subsequent self-to-self evaluations and experiences. Previous experiences of relationships can be coded in our minds as interpersonal memories (Brewin, 2006), acting as a lens that guides moment-to-moment processing of emotion and interactions.

From early attachment through cooperative, emotionally supportive and sexual relationships, being loved, accepted, valued, and chosen by others (e.g. caregivers, friends, allies, peers, lovers, one's superiors) provides the deactivation of threat systems, offers essential resources for coping with

adversity and promotes feelings of safeness, regulating physiological systems that are conducive to health and well being (Cacciopo, et al., 2000; Masten, 2001). In contrast, early adverse rearing experiences, in the form of abuse, neglect, abandonment, rejection, shaming, criticism and/or harsh parenting styles are known to be associated with the activation of threat systems (Dickerson & Kemeny, 2004; Perry, Pollard, Blakley, Baker & Vigilante, 1995), under stimulation of the soothing-affiliative system (Irons, Gilbert, Baldwin, Baccus, & Palmer, 2006) and increased vulnerabilities to mental health difficulties, namely depression (Andrews, 2002; Gilbert & Gerlsma, 1999; Parker, 1983; Perris, 1994; Perris & Gilbert, 2000; Stuewig & McCloskey, 2005; Webb, Heisler, Call, Chickering, & Colburn, 2007). Social rejection experiences are also key to the emergence of shame (Claesson & Sohlberg, 2002; Gilbert, 1998; Gilbert, Allan, & Goss, 1996; Gilbert, Cheung, Wright, Campey, & Irons, 2003).

Shame, shame memories and psychopathology

Given the evolved power of relationships, in order to feel safe, fit in, belong and engage in advantageous social roles, humans are motivated to stimulate positive affect and create positive 'images' of themselves in the mind of others. So important is attractiveness in social competition, that a set of complex cognitive abilities for social understanding (e.g. theory of mind, metacognition) (Byrne, 1995; Wells, 2000) and self-conscious awareness (Tracy & Robins, 2004) have developed to monitor our attractiveness in the mind of the other, that is, how we exist for others and make predictions of what they think and feel about us (Gilbert, 2003, 2007a).

In light of the biopsychosocial model (Gilbert, 1998, 2003, 2007a), shame emerges from these cognitive abilities as a warning signal that we exist negatively in the mind of the others (i.e. as unattractive, worthless, flawed) and thus, they can reject, exclude, ignore or even harm or persecute us (Gilbert, 1998, 2003). Shame is usually conceived as an experience of the self as unattractive, undesirable, worthless, inferior or defective in some way, associated with having flaws, failures and

deficits exposed (Kaufman, 1989; Lewis, 1992; Gilbert, 1998, 2002; Tangney, & Dearing, 2002; Tangney, & Fisher, 1995).

Shame experiences can take place very early in life and involve a primary threat to the (social) self (Gilbert, 1998, 2003). So, shame memories are threat memories that can texture the whole sense of self (Andrews, 2002; Andrews & Hunter, 1997) and may operate like mini-scenes or emotional hot-spots in the mind (Kaufman, 1989). Shame experiences such as criticism from a parent, being rejected by a lover, bullying, failing at something important, being physically or sexually abused, and so on, can be recorded in autobiographical memory as conditioned emotional memories. These threat memories have a powerful impact on self-schema, emotional and attentional processing and on neurophysiologic systems (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Dickerson & Kemeny, 2004; Gilbert, 2003; Schore, 1998, 2001).

In line with this view, Matos and Pinto-Gouveia (2009) recently found that shame memories from childhood and adolescence can function as traumatic memories, with intrusion, avoidance and hyper arousal symptoms, which not only have an impact on feelings of shame in adulthood but also moderate the impact of shame on depression. In addition, shame memories were found to act as powerful and painful emotional memories that can become central to one's identity and life story (Pinto-Gouveia & Matos, 2010). In another study, shame memories that function like traumatic memories, or that are a central to one's identity and life story, were found to be significantly related to paranoid anxiety, but not social anxiety, even when controlling for current shame feelings (Matos, Pinto-Gouveia, & Gilbert, 2010).

Therefore, shame memories that are recorded as traumatic and central autobiographical memories seem to operate as self-defining memories in the self-memory system (Conway, 2005; Conway & Pleydell-Pearce, 2000; Matos, Pinto-Gouveia, & Gilbert, 2010; Singer & Salovey, 1993) in that they give meaning and continuity to one's sense of self and life story (McAdams, 2001;

McAdams, Josselson, & Lieblich, 2006) and influence behaviour and goals (Sutin & Robins, 2008). Furthermore, a central trauma memory can form a highly available reference point for the organization of autobiographical knowledge, influencing subsequent emotional, cognitive and attentional, processing (Berntsen & Rubin, 2006, 2007).

In accordance with attachment theory, these shame memories may lead to structure negative internal working models of self (e.g. as unworthy, undesirable) and others (e.g. as threatening, harsh, powerful, hostile that may criticize, reject, exclude, harm or persecute the self) that influence emotional and social response to negative self-defining events (Baldwin & Dandeneau, 2005; Mikulincer & Shaver, 2005; Matos, Pinto-Gouveia & Gilbert, 2010). Hence, shame memories may integrate interpersonal schema that guide expectations of how others will view and respond to the self and that form the basis for self-to-self evaluations and experiences (Baldwin, 1997; Baldwin & Holmes, 1987).

In fact, a recent study found that shame memories involving attachment figures differ from shame memories involving other people (e.g. peers, colleagues, teachers, or strangers) concerning their impact on psychopathology, in that only shame traumatic central memories with attachment figures moderate the link between current shame and depression (Matos & Pinto-Gouveia, 2011). Although the quality and type of attachment relationships seem to be important in structuring shame memories, the research on this topic has been scant.

Emotion regulation

Attachment relationships drastically influence the way we learn to regulate our emotions (Cozolino, 2006; Gerhardt, 2004; Mikulincer & Shaver, 2004, 2007). Emotional regulation has been conceptualized as processes through which individuals modulate their emotions consciously and nonconsciously (Bargh & Williams, 2007; Rottenberg & Gross, 2003) to appropriately respond to environmental demands (Campbell-Sills & Barlow, 2007; Cole, Martin, & Dennis, 2004; Gratz &

Roemer, 2004; Gross, 1998; Gross & Munoz, 1995). In other words, individuals develop regulatory strategies to modify the magnitude and/or type of their emotional experience or the emotion-eliciting event (Diamond & Aspinwall, 2003; Gross, 1998).

A division between adaptative and maladaptative emotion regulation strategies has been conceptualized in several theoretical models (Greenberg, 2002; Gross, Richards & John, 2006). Some of these maladaptative strategies are thought to be associated with the etiology and maintenance of clinical disorders (Aldao, Nolen-Hoeksema, Schweizer, 2010; Berenbaum, Raghavan, Vernon, & Gomez, 2003; Mennin & Farach, 2007), namely major depressive disorder (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Rottenberg, Gross, & Gotlib, 2005), social anxiety disorder (Kashdan, Elhai, & Breen, 2008), and borderline personality disorder (Linehan, 1993; Lynch, Trost, Salsman, & Linehan, 2007).

Some of the most studied maladaptative emotion regulation strategies are thought suppression, rumination and dissociation, which have been theorized as a risk factor for psychopathology.

Concerning thought suppression, Wenzlaff and Wegner (2000) have produced a large body of research showing that attempts to voluntarily suppress thoughts result in an increased accessibility of the suppressed thought and increased emotional arousal (Wegner & Erber, 1992; Wegner, Schneider, Carter, & White, 1987). When faced with life events which bring depressive, traumatic, socially inappropriate thoughts to the fore, the most common strategy is the avoidance of these thoughts (Wegner & Zanakos, 1994). Moreover, research in this field has shown that thought suppression has been associated with increased risk for depression and anxiety (Purdon, 1999; Wenzlaff & Wegner, 2000). In addition, it has been theorized that thought suppression contributes to the development and maintenance of post-traumatic stress disorder (PTSD; e.g., McFarlane, 1988; Wenzlaff & Wegner, 2000). Research has shown that traumatized individuals try to suppress thoughts about their aversive experiences (Kuyken & Brewin, 1994).

Another maladaptative strategy described in literature is rumination, defined as the repetitive focus on the experience of emotion, its causes and consequences (Nolen-Hoeksema et al., 2008; Trapnell & Campbell, 1999; Watkins, 2008). Although people often engage in rumination because they want to understand and solve their problems (Papageorgiou & Wells, 2003), it appears to interfere with good problem solving and may immobilize individuals in indecision in the context of distress (Hong, 2007; Ward, Lyubomirsky, Sousa, & Nolen-Hoeksema, 2003). A large body of research demonstrates that rumination predicts the onset (Just & Alloy, 1997; Spasojevic & Alloy, 2001), severity (Murriss, Roelofs, Rassin, Fraken, & Mayer, 2005; Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Nolen-Hoeksema et al., 2008) and maintenance of depression (Kuehner & Webber, 1999; Nolen-Hoeksema, 2000). Also, Cheung, Gilbert and Irons (2004) found rumination to be significantly correlated with shame, and to partially mediate the relationship between shame and depression. In addition, several studies have now established the importance of this emotion regulatory strategy in subjects who experienced traumatic events (Wells & Papageorgiou, 1995; Michael, Halligan, Clark, & Ehlers, 2007). Speckens and collaborators (2007) suggested that rumination may be an important mediating factor between the traumatic event, the increase of feelings like sadness, shame, and anger, and the subsequent onset or maintenance of PTSD symptoms. Distinct types of rumination with distinct functional effects have been proposed (Moberly & Watkins, 2008; Treynor, Gonzalez, & Nolen-Hoeksema, 2003; Watkins, 2004), with brooding being more depressogenic and reflection being less depressogenic (see reviews by Aldao, Nolen-Hoeksema, & Schweizer, 2010; Nolen-Hoeksema, et al., 2008).

Finally, dissociation refers to a variety of behaviors associated with lapses in psychobiological and cognitive processing (Ogawa, Sroufe, Weinfield, Carlson, & Egeland, 1997). The Diagnostic and Statistical Manual (DSM IV- TR; American Psychiatric Association, 2000) defines the term dissociation as “a disruption in the usually integrated functions of consciousness, memory, identity, or perception”. A recurrent theme in clinical and empirical literature is that

traumatic experiences cause dissociative symptomatology (Putnam, Carlson, Ross, Anderson, Clark, et al., 1996). Accordingly, preliminary evidence suggested that dissociation mediates the relationship between trauma and psychopathology (Griffin, Resick, & Mechanic, 1997; Zatzick, Marmar, Weiss, & Metzler, 1994). Findings from several studies using clinical and non clinical samples, showed dissociative symptomatology is associated with self-reported childhood history of sexual abuse, physical abuse, emotional abuse, and neglect (Chu & Dill, 1990; Coons, Bowman, Pellow, & Schneider, 1989; Putnam, Guroff, Silberman, Barban, & Post, 1986; Ross, Miller, Reagor, Bjornson, Fraser, & Anderson, 1991). Furthermore, dissociation has been suggested to be a mediator between perceived abusive parenting style and depressive symptoms in adulthood (Offen, Thomas, & Waller, 2003; Yoshizumi, Murase, Murakami & Takai, 2007).

Considering this theoretical and empirical knowledge on shame and shame memories (Gilbert, 2007; Matos & Pinto-Gouveia, 2009a) and emotional regulation (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Gross, Richards & John, 2006), it is possible that emotion regulation processes, such as rumination, thought suppression and dissociation, function as mediators on the relationship between shame trauma memory and psychopathology. However, this effect has never been tested.

The current study

This study therefore sets out to explore the association between shame trauma memories involving different types of *shamers* (attachment figures or other people, e.g. strangers, peers, teachers) and emotional regulation processes, specifically, rumination, thought suppression and dissociation. We hypothesize that individuals who recall shame memories with attachment figures and other people as traumatic emotional memories would tend to ruminate, suppress unpleasant thoughts and dissociate more than those whose shame memories were less traumatic.

In addition, the primary aim of the current study is to test a mediator model in which it is predicted that emotional regulation processes, such as rumination, thought suppression and dissociation, mediate the association between shame traumatic memory and depressive symptomatology. Specifically, we investigate if these emotional regulation processes would have a mediator effect on this association depending on who the *shamer* was in the traumatic memory. That is, we predict that rumination, thought suppression and dissociation would be mediators on the relationship between shame traumatic memory with others (e.g. peers, superiors, strangers) and depression. On the contrary, we hypothesize that mediator effect of these emotion regulation processes would be less significant on the association between shame traumatic memory with attachment figures and depressive symptoms. This is because we expect the involvement of a caregiver would strengthen the linkage between the shame traumatic memory and psychopathological symptoms, making it less permeable to the influence of emotional regulation processes.

Method

Participants

Participants in this study were ninety subjects recruited from the general population in the district of Coimbra, Braga, Porto, and Guarda, Portugal. Participants mean age was 29.50 ($SD=7.81$), 64.4% were females ($n=58$) and 35.6% males ($n=32$). Seventy five per cent of the subjects were single ($n=67$) and 13.9% were married ($n=17$). Eighty five per cent had graduated from high school ($n=77$). The participants years of education mean was 14.97 ($SD=3.69$). These participants were recruited as part of a larger study examining the phenomenological characteristics of shame memories and their relation to psychopathology.

Procedure

A convenience sample was collected from the general community population, recruited within the staff of institutions (academic institutions and private corporations). These institution's boards were contacted, the research aims were clarified and authorization was obtained so that their employees could participate in the study. Afterwards, the personnel was elucidated about the investigation goals and invited to voluntarily participate. In line with ethical requirements, it was emphasized that participants co-operation was voluntary and that their answers were confidential and only used for the purpose of the study.

Those who volunteer to participate were given a battery of self-report questionnaires designed to measure shame, emotional regulation and psychopathology. The questionnaires were administered by the author, MM, with assistance of undergraduate students. Then, the self-report questionnaires were filled by volunteers in the presence of the researcher.

Afterwards, a session was scheduled with each participant within the following week, in order to administer the Shame Experiences Interview (SEI; Matos & Pinto-Gouveia, 2006). The SEI assessed specific shame experiences from childhood and adolescence, particularly a shame memory involving an attachment figure (father, mother or other caregiver) and a shame memory that involved other people: e.g. peers, teachers, strangers. The SEI took approximately 90 minutes to complete.

Measures

Shame memories

Shame Experiences Interview (SEI, Matos & Pinto-Gouveia, 2006). The SEI is a semi-structured interview designed to assess the phenomenology of shame experiences from childhood or adolescence. It measures emotional, cognitive, behavioral, motivational and contextual components of shame and its autobiographical/traumatic memory characteristics. The interview begins with an introduction that explains its purpose and then clarifies the concept of shame and gives three case

examples of shame experiences from childhood and adolescence. It is divided into three main parts: In the first part a significant shame memory from childhood or adolescence that involved peers, teachers, strangers, or other people, is elicited and assessed regarding its phenomenological and memory characteristics. In the second part participants are asked to recall a significant shame memory from childhood or adolescence involving an attachment figure (father, mother or other caregiver), and its' phenomenological and memory characteristics are evaluated. The third part measures the accessibility to positive and negative memories with attachment figures from childhood and adolescence. After each part, participants are asked to fill a set of self-report questionnaires considering the shame memory elicited, measuring shame traumatic memory characteristics, centrality of shame memory and autobiographical memory characteristics. For the purpose of this study, we will only consider the scores from the self-report measures assessing shame traumatic memory (described below) applied to the shame memory with peers, teachers, strangers, and to the shame memory with attachment figures.

Shame traumatic memory

Impact of Event Scale – Revised (IES-R) was developed by Weiss & Marmar (1997). The IES-R is a self-report instrument designed to measure current subjective distress for any specific life event, and distinctively in our study, in relation to the shame memory involving peers, colleagues, teachers, strangers or others (IES-R_Others) and to the shame memory with attachment figures (IES-R_AttachFig). This scale has 22 items, 7 items having being added to the original 15-item IES (Weiss & Marmar, 1997), rated on a 5-point Likert scale (0–4). The IES-R is composed by three subscales that measure the three main characteristics of traumatic memories: avoidance (e.g., “*I stayed away from reminders of it*”), intrusion (e.g., “*Any reminder brought back feelings about it*”) and hyperarousal (e.g., “*I was jumpy and easily startled*”) that parallel the DSM-IV criteria for PTSD. In the original study, Cronbach alphas of the subscales ranged from .87 to .92 for intrusion,

.84 to .86 for avoidance and .79 to .90 for hyperarousal (Weiss & Marmar, 1997). The Portuguese version revealed a one-dimensional structure with sound psychometric properties (Matos & Pinto-Gouveia, 2010). Cronbach' alpha for this measure in this study is shown in Table 1.

Rumination

Rumination Responses Questionnaire (RRQ-10; Treynor, Gonzalez, Nolen-Hoeksema, 2003; Portuguese translation and adaptation by Pinto-Gouveia, & Dinis, 2006) measures two aspects of rumination. The first component, named reflection, suggests a purposeful turning inward to engage in cognitive problem solving to alleviate one's depressive symptoms. In contrast, the second component, named brooding, reflect a passive comparison of one's current situation with some unachieved standard. The scale includes 10 items on a scale from 1 (*almost never*) to 4 (*almost always*). On the original version the reflection dimension presents a Cronbach alpha of .72 while the brooding dimension presents a Cronbach alpha of .77. The coefficient alpha for the Portuguese version for the reflection subscale was .75 and .76 for the brooding subscale. The alpha level for this study is given in Table 1.

Thought suppression

White Bear Suppression Inventory (WBSI; Wegner, & Zanakos, 1994; Portuguese translation and adaptation by Pinto-Gouveia & Albuquerque, 2007) comprises 15 items that were originally developed to evaluate chronic thought suppression tendencies. It contains statements such as "*There are things I prefer not to think about*" or "*There are images that come to mind that I cannot erase*". Answers are given on a 5-point Likert scale ranging from A (*strongly disagree*) to E (*strongly agree*). Scores can range from 5-75, with higher scores reflecting a greater tendency to suppress. Across several large student samples, internal consistency of the WBSI was high, with Cronbach's alpha ranging from .87 to .89. The alpha level for this study is shown in Table 1.

Dissociation

The Dissociative Experiences Scale - Revised (DES-II; Carlson & Putnam, 1993, Portuguese translation and adaptation by Dinis, Matos, & Pinto Gouveia, 2008) is a self-report measurement of the frequency of dissociative symptoms, such as amnesia, absorption, depersonalization and desrealization. It is the most widely used measure of dissociation. The 28 items related to dissociative phenomena in daily life items are rated on a scale from 0% (*never*) to 100% (*always*), corresponding to the frequency in which those symptoms are experienced. Examples of such phenomena include feelings of depersonalization, derealization, and psychogenic amnesia. The DES-II produces scores very similar to those on the original version (Bernstein & Putnam, 1986). In its original study, Cronbach's alpha was .90 (Carlson & Putnam, 1993). The alpha level for this study is reported in Table 1.

Psychopathology

Depression, Anxiety and Stress Scale (DASS-42; Lovibond & Lovibond, 1995; Portuguese version by Pais-Ribeiro, Honrado & Leal, 2004) is a self-report measure composed of 42 items and designed to assess three dimensions of psychopathological symptoms: depression, anxiety and stress. The items indicate negative emotional symptoms and are rated on a 4-point Likert scale (0-3). On the original version, Lovibond and Lovibond (1995) found the subscales to have high internal consistency (Depression subscale Cronbach's $\alpha=.91$; Anxiety subscale Cronbach's $\alpha=.84$; Stress subscale Cronbach's $\alpha=.90$). In the present study, only the Depression subscale will be considered. Cronbach alpha for this subscale in this study is shown in Table 1.

Results

Data analysis

Analysis was conducted using PASW (Predictive Analytics Software), version 18 (SPSS Inc., Chicago, IL, USA) for PCs.

Two studies were conducted to investigate the relationships between shame traumatic memory with others and with attachment figures, emotional regulation processes and psychopathology. These studies have a cross sectional design with self-reports measures.

In the first study, the predictor variable was shame traumatic memory with others as measured by IES-R_Others. The dependent variable was depression, DASS Depression subscale. Rumination, thought suppression and dissociation were assumed to be the mediators and were assessed using RRQ, WBSI and DES-II, respectively.

In the second study, shame traumatic memory with attachment figures was considered the predictor variable, measured by IES-R_AttachFig, and Depression was considered the dependent variable. Rumination, thought suppression and dissociation were supposed to be mediator variables and were assessed using RRQ, WBSI and DES-II, respectively.

Pearson correlation coefficients were performed to explore the relationships between predictor variables, outcome variables and the mediators.

A series of mediator analyses were conducted using *linear regression models* to test the effects of each mediator on the relationship between the predictor and the dependent variable, following the four-step analysis recommended by Baron and Kenny (1986). Furthermore, *Sobel Test* was performed to determine the significance of the indirect effect of the predictor variable on outcome, through its effects on mediator. The mediation (full or partial) suggested by the regression model is significant if Sobel z is $p < .050$.

Preliminary Data Analyses

A series of tests were conducted to examine the suitability of the current data for regression analyses. We performed an analysis of residuals scatter plots since it provides a test of assumptions

of normality, linearity and homoscedasticity between dependent variables scores and errors of prediction. Our data showed that the residuals were normally distributed, had linearity and homoscedasticity. Also, the independence of the errors was analyzed and validated through graphic analysis and the value of *Durbin–Watson* (values ranged between 1.753 and 1.904). No evidence of the presence of multicollinearity or singularity amongst the variables was found. These aspects were validated by the *Variance Inflation Factor (VIF)* values that indicated the absence of β estimation problems ($VIF < 5$). In general, the results indicate that these data are adequate for regression analyses.

Descriptives

The means, standard deviations and Cronbach' alphas for this study variables are presented in Table 1. All scales showed good to very good internal consistencies. No gender or age differences were found concerning these variables.

Table 1 around here

Study I: Shame traumatic memory with others, emotional regulation and depression

In this study, we explore the relationship between shame traumatic memory involving peers, teachers, strangers or other people, emotional regulation processes (rumination, thought suppression and dissociation) and depression.

Correlations

Pearson's correlation coefficients (two-tailed) for these relations are presented in Table 2. Results showed that shame traumatic memory with others was positively correlated with depression. Shame traumatic memory with others was also moderately correlated with brooding subscale, thought suppression and dissociation. There were moderate to high correlations between brooding

and depression and between reflection and depression. Also, dissociation and thought suppression were moderately associated with depressive symptoms.

Table 2 around here

The Mediator Effect of Emotional Regulation Strategies on the Relationship between Shame Traumatic Memory with Others and Depression

In order to further explore these findings, we conducted a series of mediator analyses using linear regression models to test whether brooding, thought suppression and dissociation mediate the relationship between shame traumatic memory with others and depression.

The Mediator Effect of Rumination

A regression analysis was conducted with shame traumatic memory with others entered as the independent variable and depression as the dependent variable. The model was significant [$F_{(1,88)}=8.59$; $p=.004$], accounting for 8.9% of depression ($\beta=.30$; $p=.004$). The next analysis was conducted to examine whether traumatic memory with others predicted brooding. The model was also significant [$F_{(1,88)}=14.44$; $p=.000$] with $\beta=.38$ ($p=.000$). Finally, a regression analysis was performed to determine whether the proposed mediator significantly predicted depression. We entered shame traumatic memory with others and brooding as the independent variables and depression as the dependent variable. The final model was significant [$F_{(2,87)}=12.97$; $p=.000$], accounting for 23% of the variance in depression. Results indicate that when the mediator is added in, β is reduced to .15 ($p=.153$) and is no longer significant (See Table 3). *Sobel test* was significant ($z=2.73$; $p=.006$), indicating that brooding fully mediates the effect of shame traumatic memory with others on depression.

The Mediator Effect of Thought Suppression

The same procedure was conducted to examine the mediator effect of thought suppression (Table 3). First, when shame traumatic memory with others was entered as the independent variable and depression as the dependent variable, it produced a significant model. On the second step, a regression analysis was conducted to examine whether traumatic memory with others predicted thought suppression. The model was also significant [$F_{(1,88)}=15.54$; $p=.000$] with $\beta=.39$ ($p=.000$). Finally, a regression analysis was performed to determine whether the proposed mediator significantly predicted depression. Shame traumatic memory with others and thought suppression were entered as the independent variables and depression as the dependent variable. The final model was significant [$F_{(2,87)}=8.02$; $p=.001$], accounting for 15.6% of depression. Results indicate that when the mediator is added in, β is reduced and is no longer significant ($\beta=.19$; $p=.079$). *Sobel test* was significant ($z=2.18$; $p=.029$), suggesting that thought suppression fully mediates the effect of shame traumatic memory with others on depression.

The Mediator Effect of Dissociation

Similarly, the proceedings described above were performed to test for the mediator effect of dissociation (Table 3). First, when shame traumatic memory with others was entered as the independent variable and depression as the dependent variable, the regression model was significant. Next analysis was conducted to examine whether traumatic memory with others predicted dissociation. The model was also significant [$F_{(1,88)}=13.36$; $p=.000$] with $\beta =.36$ ($p=.000$). Finally, a regression analysis was performed to determine whether the proposed mediator significantly predicts depression. We entered shame traumatic memory with others and dissociation as the independent variables and with depression as the dependent variable. The final model was significant [$F_{(2,87)}=7.89$; $p=.001$], accounting for 15.4% of depression. Results indicate that when mediator is added in, β is reduced and non significant ($\beta=.20$; $p=.063$). *Sobel test* was significant ($z=2.11$; $p=.035$),

indicating that dissociation fully mediates the effect of shame traumatic memory with others on depression.

Table 3 around here

Study II: Shame traumatic memory with attachment figures, emotional regulation and depression

In this study, we explore the relationship between shame traumatic memory with attachment figures, emotional regulation processes (rumination, thought suppression and dissociation) and depression.

Correlations

Table 2 illustrates Pearson's correlation coefficients (two-tailed) for the associations between these variables. Shame traumatic memory with attachment figures was positively and significantly correlated with depressive symptoms. Pearson correlations showed that shame traumatic memory with attachment figures was positively and moderately correlated with brooding, thought suppression and dissociation and poorly correlated with reflection. Correlation coefficients for the relationship between brooding, thought suppression, dissociation and depression were described above. In addition, reflection was moderately correlated with depression.

The Mediator Effect of Emotional Regulation Strategies on the Relationship between Shame Traumatic Memory with Attachment Figures and Depression

Given these results, a series of mediator analyses using linear regression models were performed to test the mediator effect of brooding, reflection, thought suppression and dissociation on the association between shame traumatic memory with attachment figures and depressive symptoms.

Analyses testing for the mediating effect of these emotional regulation processes followed the same procedures described above.

The Mediator Effect of Rumination

A regression analysis was performed with shame traumatic memory with attachment figures entered as the independent variable and depression as the dependent variable. The model was significant [$F_{(1,88)}=24.22$; $p=.000$], accounting for 21.6% of the variance in depression ($\beta=.47$; $p=.000$). Then, a regression analysis was conducted to examine whether traumatic memory with attachment figures predicted brooding. The model was also significant [$F_{(1,88)}=13.60$; $p=.000$]. Finally, a regression analysis was performed to determine whether the proposed mediator significantly predicts depression. We entered shame traumatic memory with attachment figures and brooding as the independent variables and with depression as the dependent variable. The final model was significant [$F_{(2,87)}=19.80$; $p=.000$], accounting for 31.3% of depression. Results show that when the mediator is added in, the predictor β is reduced to .34 but remains significant ($p=.001$). *Sobel test* was computed to determine the significance of the indirect effect of brooding on depression (through its effects on shame traumatic memory with attachment figures). Results demonstrate that these indirect effect was significant ($z=2.54$; $p=.011$) indicating that brooding partially mediates the relationship between shame traumatic memory with attachment figures and depression.

Similar procedures were performed to test for the mediation effect of reflection (Table 4). The first model was significant [$F_{(1,88)}=24.22$; $p=.000$], with reflection accounting for 21.6% of depression ($\beta=.47$; $p=.000$). The subsequent analysis, with shame traumatic memory with attachment figures predicting reflection, was also significant [$F_{(1,88)}=4.45$; $\beta=.22$; $p=.038$]. Finally, a regression analysis was performed to determine whether the proposed mediator significantly predicts depression. We entered shame traumatic memory with attachment figures and reflection as the

independent variables and with depression as the dependent variable. The final model was significant [$F_{(2,87)} = 15.33; p = .000$], accounting for 26% of depression. Results indicated that when the mediator is added in, the predictor β only reduces to .42 and is significant ($p = .000$). *Sobel test* was computed to determine the significance of the indirect effect of reflection on depression (through its effects on shame traumatic memory with attachment figures) and this indirect effect was not significant ($z = 1.56; p = .119$).

The Mediator Effect of Thought Suppression

The same proceedings described above were performed for the mediator effect of thought suppression on the relationship between shame traumatic memory with attachment figures and depression. These analyses showed no mediator effect considering that when the mediator is added in the final regression, shame traumatic memory remains a significant predictor of depression ($\beta = .38, p = .000$) and thought suppression β is not significant (see Table 4).

The Mediator Effect of Dissociation

Similarly, a series of regression analyses were conducted to test for the mediator effect of dissociation on the relationship between shame traumatic memory with attachment figures and depression. No significant mediation was found since shame traumatic memory still significantly predicts depression after the mediator is added in ($\beta = .39, p = .000$) and the mediator contribution is not significant (see Table 4).

In summary, results from these mediator analyses show that emotion regulation processes, such as brooding, thought suppression and dissociation, mediate the association between shame traumatic memory with others and depression. In contrast, shame traumatic memory with attachment

figures seems to have a direct effect on depression, not mediated by emotion regulation processes, with only brooding partially mediating this relation.

Table 4 around here

Discussion

Early relationships and care are central to human brain development and functioning, well-being, affect regulation and self-other schema (Baldwin, 2005; Baumeister & Leary, 1995; Bowlby, 1969, 1973; Gilbert, 1989, 2003, 2007a; Guidano & Liotti, 1983; Safran & Segal, 1990; Schore, 1994; Siegel, 2001).

The current study explored the relationship between shame traumatic memory with attachment figures and with others (e.g. peers, teachers, strangers), emotion regulation processes (rumination, thought suppression and dissociation) and depressive symptoms. Particularly, the main goal of this study was to test a mediator model of emotion regulation processes (rumination, thought suppression and dissociation) on the association between shame traumatic memory, with attachment figures and with others, and depressive symptoms.

In line with our first prediction, we found that shame traumatic memory with others and shame traumatic memory with attachment figures were significantly correlated with brooding, thought suppression and dissociation. So, individuals whose shame experiences from childhood and adolescence, involving either a caregiver or other people, function as traumatic memories (with intrusion, hyperarousal and avoidance characteristics) tend to engage in maladaptive emotion regulation processes, tend to ruminate, suppress unpleasant thoughts and dissociate to regulate their emotions. These results are consistent with the idea that early attachment and social relationships crucially influence the development of affect regulation systems (Cozolino, 2006; Gilbert, 2007a; Mikulincer & Shaver, 2007). Moreover, these data can be viewed according to studies showing that rumination, thought suppression and dissociation are emotion regulation processes that may arise

from adverse or traumatic life events, such as abuse or neglect (Michael, Halligan, Clark & Ehlers, 2007; Chu, Frey, Ganzel, & Mattwes, 1999; Wegner & Zanakos, 1994). These emotion regulation processes have also been linked to shame proneness (Cheung, Gilbert, & Irons, 2004; Irwin, 1998; Talbot, Talbot, & Xin Tu, 2004).

In addition, shame traumatic memory with others and shame traumatic memory with attachment figures were positively related to depressive symptoms. This is in line with our hypothesis and previous research that showed shame memories that function as traumatic and central memories to one's identity and life story are associated to psychopathological symptoms, particularly depression (Matos & Pinto-Gouveia, 2009; Pinto-Gouveia & Matos, 2010; Matos, Pinto-Gouveia, & Gilbert, 2010). We also found that rumination, thought suppression and dissociation were associated with depressive symptoms. This is consistent with several studies identifying these emotion regulation processes as important factors in the development and maintenance of psychopathology, especially depression and post-traumatic stress (Offen et al., 2003; Moberly & Watkins, 2008; Nolen-Hoeksema, 2000; Nolen-Hoeksema, et al. 2008; Speckens et al., 2007; Szasz, 2009; Szentagotai, 2006; Wegner & Zanakos, 1994).

Taking into account these data and recent findings that suggest the quality and type of attachment relationships are crucial in how shame traumatic autobiographical memories are related to psychopathology (Matos & Pinto-Gouveia, 2011), we further investigated these results using a series of mediator analyses. In these mediator analyses, emotion regulation processes – rumination, thought suppression and dissociation, were entered as mediators between shame traumatic memory with others and depressive symptomatology and between shame traumatic memory with attachment figures and depressive symptomatology.

We found that brooding, thought suppression and dissociation fully mediated the relationship between shame traumatic memory with others and depressive symptoms. That is, the influence of these shame memories upon depression was through their effect upon emotion regulation processes.

This implies that individuals, whose shame memories with others function as traumatic memories and who ruminate, suppress unpleasant feelings and thoughts and dissociate to regulate their emotions, tend to present more depressive symptoms. These findings are consistent with empirical evidence showing that these emotional regulation processes emerge in the context of stressful or traumatic life events and act as important mediating factors between the traumatic event (e.g. childhood sexual, physical or emotional abuse) and psychopathology, particularly depression (Cheung et al., 2004; Griffin, Resick, & Mechanic, 1997; Kuyeken & Brewin, 1994; Raes & Hermans, 2008; Speckens et al., 2007; Talbot, Talbot, & Xin Tu, 2004).

In contrast, no fully mediator effect of brooding, reflection, thought suppression and dissociation was found between shame traumatic memory with attachment figures and depressive symptoms. Only brooding showed a partial, but small, mediator effect on this association. In other words, when the shame memory involves an attachment figure its effect upon depression seems to be direct and not explained through the influence of emotion regulation processes, such as rumination, thought suppression or dissociation. This is an important finding because it points out to the importance of the role of attachment figures in the way shame experiences are structured in autobiographical memory and adds to previous research showing that only shame memories with attachment figures moderate the impact of shame on depression (Matos & Pinto-Gouveia, 2011).

According to the attachment theory (Baldwin, 1997; Bowlby, 1969, 1980; Mikulincer & Shaver, 2007), it might be that shame memories where an attachment figure has shamed the self, where one has experienced the self as someone defective, unlovable, unworthy, undesirable in the mind of a parent or caregiver, determine the formation of negative internal working models of self (e.g. as unworthy, unlovable) and others (e.g. as threatening, harsh, hostile, powerful) and become part of negative relational schema. Furthermore, these shame traumatic memories might function as self-defining memories in the self-memory system forming highly available reference points that influence emotional, cognitive and attention processing and the organization of autobiographical

knowledge (Conway, 2005; Bernsten & Rubin, 2007; Singer & Salovey, 1993). So, these shame-based internal working models and relational schema, by becoming highly accessible and easily primed emotional memories, may determine involuntary defeat responses, i.e. depressive symptoms, in face of adverse life events (Irons, et al., 2006; Gilbert, 2007a).

In addition, our results are in line with recent neuroscience research (Cozolino, 2007; Depue & Morrone-Strupinsky, 2005; Gilbert, 2005; Irons et al., 2006; Panksepp, 1998) emphasizing that the quality of attachment relationships is crucial in brain maturation, promoting feelings of safeness, shaping social interactions, and regulating affect systems (e.g. toning down distress via access to care). In particular, these data can be viewed in light of Gilbert's (2005; 2010) tripartite model of affect regulation that posits three types of affect regulation systems: affiliation/soothing, drive-seeking and threat-focused. It might be that when one is shamed by an attachment figure, not only these experiences activate one's threat system but, more importantly, they undermine the development and access to the affiliation system. This affiliation system is triggered by signals of care and affiliation and linked with feelings of warmth, safeness, connectedness to others, well-being and regulates both threat systems and drive-seeking. Furthermore, when the need for care and understanding in a child is neglected or the attachment figure is associated with shame and abuse, then the soothing and the felt need for soothing, becomes linked to sadness, yearning, grief, threat or punishment (Gilbert, 2009b). So, emotional memories where one has been shamed by an attachment figure not only elicit feelings of fear and shame when reactivated, but also activate feelings of sadness, grief and loneliness and compromise the regulation of these threat-focused feelings through blocking the access to the affiliation-soothing system. This is probably why these memories operate as traumatic memories that have a direct impact on psychopathology, especially on depressive symptoms, in which emotion regulation processes play no mediator role. Also, these individuals might experience an approach-avoidance conflict in relation to their attachment figures, in that they are seen as both sources of safeness but also sources of threat (Liotti, 2000). This may further

amplify the power of these shame traumatic memories and increase the vulnerability to depressive symptoms.

Another possible explanation for these results may have to do with the association between shame traumatic memories with attachment figures and with others and the emotional intensity felt in the shame experience. It is possible that shame traumatic memories with attachment figures may be more linked to higher emotional intensity. So when these memories are triggered by current stimulus that would elicit stronger emotional reactions less permeable to cognitive emotion regulation processes (e.g. rumination, thought suppression or dissociation). This could explain the direct effect of shame traumatic memories with attachment figures in depressive symptoms. This hypothesis should be investigated in future studies.

Clinical implications

The current findings therefore shed light on the role of attachment figures on the structuring of shame traumatic memories and on their impact on psychopathological symptoms.

Moreover, this study adds to recent research on processes that block compassion (Gilbert, McEwan, Matos, & Rivis, 2011; Gilbert, McEwan, Gibbons, Chotai, Duarte, & Matos, 2011; Rockliff, Karl, McEwan, Gilbert, Matos, & Gilbert, 2011) showing that some patients might find it difficult or overwhelming to be self-compassionate and receive compassion from others (e.g. from the therapist) since the experience of these feelings in therapy may reactivate emotional memories of being, for example, shamed by an attachment figure, which then triggers conditioned emotional reactions (e.g. fight, flight, avoidance). Hence, feelings of warmth can be frightening and strange for these individuals and lead to anxiety, avoidance, aggression or dissociation. This can be a major block to recovery, especially for people with high shame and self-criticism.

Therefore, in a therapeutic context, our results highlight the relevance of targeting shame memories, mainly those that involve attachment figures using compassion focused therapy (CFT)

(Gilbert, 2006; 2007b; 2009a; 2009b; 2010), particularly when working with patients suffering from depressive symptoms and/or that find compassion difficult or scary. Also, our findings emphasize the pertinence of recreating the autobiographical meaning associated with these memories in order to lessen their traumatic impact on current symptoms and to reevaluate and reconstruct the patient's negative inner working models of self and others and relational schemas.

In addition, psychotherapy with individuals with depressive symptomatology and who disclose shame traumatic memories involving others, should involve not only the assessment and work with these memories using a compassion focused approach, but also the evaluation and intervention on emotion regulation processes that prove to be important in the maintenance of the patient's difficulties. In fact, while the sporadic use of these processes seems adaptive to cope with trauma events (e.g. shame events), their chronic use may increase susceptibility to serious psychopathology, namely depression. So, it becomes essential to intervene in them. Particularly, therapists should use specific strategies to target rumination, thought suppression and dissociation, as proposed by prominent authors in the field (Aldao, et al., 2010; Greenberg, 2002; Gross, 2007; Nolen-Hoeksema et al., 2008; Rottenberg & Gross, 2007).

Limitations and future research

One possible limitation of the present study is its transversal design, so prospective studies could be conducted in the future to enhance the understanding on the causal relations between the variables. The findings from this study conducted in a non clinical sample may not be generalized to clinical populations. Nevertheless, when dealing with shame and shame memories the same processes and mechanisms may apply at a clinical or nonclinical level. To further sustain our conclusions, future studies could replicate these findings using clinical samples, such as depressed patients. Although we used self-report instruments, a major strength of this study is the fact that the data on shame memories were collected through the administration of a semi-structured interview

(SEI). Finally, attachment styles were not investigated in this study, so future research could look into how different attachment styles are related with shame memories and psychopathology.

In conclusion, this study shed light on the role of attachment in shame memories and in their relation to psychopathology. We found that the relationship between shame traumatic memory with attachment figures and depressive symptoms was not mediated by emotion regulation processes, particularly rumination, thought suppression and dissociation. In contrast, these processes emerged as mediators on the association between shame traumatic memory with others and depression. Therefore, these findings support and add to recent neuroscience research and Gilbert's approach on shame and compassion, underlining the importance of the quality of attachment relationships in shame dynamics and vulnerability to psychopathology.

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References

- Aldao, A., Nolen-Hoeksema, S. & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, 30, 217–237.
- American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders* (4th Edition - TR). Washington, DC: Task Force.
- Andrews, B. (2002). Body shame and abuse in childhood. In P. Gilbert and J. Miles (Eds.). *Body Shame: Conceptualisation, Research and Treatment* (pp. 256-266). London: Brunner.
- Andrews, B., & Hunter, E. (1997). Shame, early abuse, and course of depression in a clinical sample: A preliminary study. *Cognition and Emotion*, 11, 373-381.
- Baldwin, M.W. (1992). Relational schemas and the processing of social information. *Psychological Bulletin*, 112, 461 – 484.
- Baldwin, M. W. (1997). Relational schemas as a source of if-then self-inference procedures. *Review of General Psychology*, 1, 326-335.
- Baldwin, M. W. (Ed.) (2005). *Interpersonal cognition*. New York: Guilford Press.
- Baldwin, M.W. & Dandeneau, S.D. (2005). Understanding and modifying the relational schemas underlying insecurity. In M. W. Baldwin (Ed.) *Interpersonal Cognition* (pp. 33-61). New York: Guilford Press.
- Baldwin, M.W., & Holmes, J.G. (1987). Salient private audiences and awareness of the self. *Journal of Personality and Social Psychology*, 52, 1087-1098.
- Bargh, J. A., & Williams, L. E. (2007). On the automatic or nonconscious regulation of emotion. In J. J. Gross (Ed.), *Handbook of emotion regulation*. New York: Guilford.

- 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.
- Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of General Psychology*, 5, 323-370.
- Baumeister, R.F., & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497-529.
- Berenbaum, H., Raghavan, C. L., Vernon H.N. & Gomez, J. (2003). A taxonomy of emotional disturbances, *Clinical Psychology: Science and Practice*, 10, 206-226.
- Berntsen, D., & Rubin, D. C. (2006). Centrality of Event Scale: A measure of integrating a trauma into one's identity and its relation to post-traumatic stress disorder symptoms. *Behaviour Research and Therapy*, 44, 219-231.
- Berntsen, D., & Rubin, D. C. (2007). When a trauma becomes a key to identity: Enhanced integration of trauma memories predicts posttraumatic stress disorder symptoms. *Applied Cognitive Psychology*, 21, 417-431.
- Bowlby, J. (1969). *Attachment: Attachment and Loss, Vol. 1*. London: Hogarth Press.
- Bowlby, J. (1973) *Attachment and loss: Volume 2. Separation: Anxiety and anger*, New York: Basic Books
- Bowlby, J. (1980). *Loss: Sadness and Depression. Attachment and Loss, Vol. 3*. London: Hogarth Press.
- Brewin, C.R. (2006). Understanding cognitive behaviour therapy: A retrieval competition account. *Behaviour Research and Therapy*, 44, 765-784.
- Byrne, R. W. (1995). *The thinking ape*. Oxford: Oxford University Press.

- Buss, D. M. (2003). *The evolution of desire: Strategies of human mating* (Rev. Ed.). New York: Free Press.
- Cacioppo, J. T., Berston, G. G., Sheridan, J. F., & McClintock, M. K. (2000). Multilevel integrative an human behavior: social neuroscience and the complementing nature of social and biological approaches. *Psychological Bulletin*, 126, 829-843.
- Campbell-Sills, L. & Barlow, D. H. (2007). Incorporating emotion regulation into conceptualizations and treatments of anxiety and mood disorders. In J.J. Gross (Ed.) *Handbook of Emotion Regulation* (pp. 542-560). New York: Guilford Press.
- Carlson, B. E., & Putnam, F. W. (1993). An update on the Dissociative Experiences Scale. *Dissociation*, 6, 16-27.
- Carter, C. S. (1998). Neuroendocrine perspectives on social attachment and love. *Psychoneuroendocrinology*, 23, 779-818.
- Cassidy, J. & Shaver, P.R. (1999, Eds.). *Handbook of Attachment: Theory, Research and Clinical Applications* (pp. 115-140). New York: Guilford Press.
- Claesson, K. & Sohlberg, S. (2002). Internalized shame and early interactions characterized by indifference, abandonment and rejection: Replicated findings. *Clinical Psychology and Psychotherapy*, 9, 277-284.
- Cheung, M.S.P., Gilbert, P., & Irons, C. (2004). An exploration of shame, social rank and rumination in relation to depression. *Personality and Individual Differences*, 36, 1143-1153.
- Chu, J. E., & Dill, D. L. (1990). Dissociative symptoms in relation to childhood physical and sexual abuse. *American Journal of Psychiatry*, 147, 887-892.
- Chu, J., Frey, L., Ganzel, B., & Matthews, J. (1999). Memories of childhood abuse: Dissociation, amnesia, and corroboration. *American Journal of Psychiatry*, 156, 749-755.

- Cole, P.M., Martin, S.E., & Dennis, T.A. (2004). Emotion regulation as a scientific construct: Challenges and directions for child development research. *Child Development, 75*, 317-333.
- Coons, P., Bowman, E., Pellow, T., & Schneider, P. (1989). Post-traumatic aspects of the treatment of victims of sexual abuse and incest. *Psychiatric Clinics of North America, 12*, 325-335.
- Conway, M. A. (2005). Memory and the self. *Journal of Memory and Language, 53*, 594-628.
- Conway, M. & Pleydell-Pearce, C.W. (2000). The Construction of Autobiographical Memories in the Self-Memory System. *Psychological Review, 107*, 261-288.
- Cozolino, L. (2006). *The Neuroscience of Human Relationships: Attachment and the Developing Social Brain*. New York: W. W. Norton & Co.
- Depue ,R.A., & Morrone-Strupinsky, J.V. (2005). A neurobehavioral model of affiliative bonding: Implications for conceptualizing a human trait of affiliation. *Behavioral and Brain Sciences, 28*, 313–395.
- Diamond, L. M., & Aspinwall, L. G. (2003). Emotion regulation across the life span: An integrative perspective emphasizing self-regulation, positive affect, and dyadic processes. *Motivation and Emotion, 27*, 125-156.
- Dickerson, S. S., & Kemeny, M. E. (2004). Acute stressors and cortisol response: A theoretical integration and synthesis of laboratory research. *Psychological Bulletin, 130*, 335-391.
- Dinis, A., Matos, M. & Pinto-Gouveia, J. (2008). Portuguese translation and adaptation of the Dissociative Experiences Questionnaire: DES-II. (*Unpublished manuscript*)
- Gerhardt, S. (2004). *Why Love Matters: How Affection Shapes a Baby's Brain*. London: Brunner-Routledge.
- Gilbert, P. (1989). *Human Nature and Suffering*. Hove: Lawrence Erlbaum Associates.

- Gilbert, P. (1998). What Is Shame? Some Core Issues and Controversies. In P. Gilbert and B. Andrews (Eds.). *Shame: Interpersonal Behaviour, Psychopathology and Culture* (pp. 3-36). New York: Oxford University Press.
- Gilbert, P. (2002). Body Shame: A Biopsychosocial Conceptualisation and Overview, with Treatment Implications. In P. Gilbert and J. Miles (Eds.). *Body Shame: Conceptualisation, Research and Treatment* (pp. 3-54). London: Brunner.
- Gilbert, P. (2003). Evolution, Social Roles and the Differences in Shame and Guilt. *Social Research*, 70, 1205-1230.
- Gilbert, P. (2006). A biopsychosocial and evolutionary approach to formulation with a special focus on shame. In N. Tarrow (Ed.), *Case formulation in cognitive behaviour therapy: The treatment of challenging and complex cases* (pp. 81-112). Hove: Routledge.
- Gilbert, P. (2007a). The evolution of shame as a marker for relationship security. In J. L. Tracy, R. W. Robins & J. P. Tangney (Eds.), *The Self-Conscious Emotions: Theory and Research* (pp. 283-309). New York: Guilford Press.
- Gilbert, P. (2007b). Evolved minds and compassion in the therapeutic relationship. In N. P. Gilbert and R. Leahy (Eds.). *The Therapeutic Relationship in the Cognitive Behavioural Psychotherapies* (pp. 106-142). Hove: Routledge.
- Gilbert, P. (2009a). Evolved minds and compassion focused imagery in depression. In L. Stropia (Eds.). *Imagery and the Threatened Self: Perspectives on Mental Imagery in Cognitive Therapy*. (p.206-231). London: Routledge.
- Gilbert, P. (2009b). *The Compassionate Mind*. London: Constable-Robinson. Oakland CA.: New Harbinger.
- Gilbert, P. (2010). *Compassion Focused Therapy: Distinctive Features*. London: Routledge.
- Gilbert, P., Allan, S., & Goss, K. (1996). Parental representations, shame, interpersonal problems, and vulnerability to psychopathology. *Clinical Psychology and Psychotherapy*, 3, 23-34.

- Gilbert, P., Cheung, M., Wright, T., Campey, F. & Irons, C. (2003). Recall of threat and submissiveness in childhood: Development of a new scale and its relationship with depression, social comparison and shame. *Clinical Psychology and Psychotherapy*, 10, 108-115.
- Gilbert, P. & Gerlsma, C. (1999). Recall of favouritism in relation to psychopathology. *British Journal of Clinical Psychology*, 38, 357-373.
- Gilbert, P., McEwan, K., Matos, M., & Ravis, A. (2011). Fear of compassion: a study of psychological processes that block compassion. *Psychology and Psychotherapy: Theory, Research and Practice*. DOI: 10.1348/147608310X526511
- Gilbert, P., McEwan, K., Gibbons, L., Chotai, S., Duarte, J., & Matos, M., (2011). Fears of compassion and happiness in relation to alexithymia, mindfulness and self-criticism. *Psychology and Psychotherapy: Theory, Research and Practice* (In press).
- Guidano, V.F., & Liotti, G. (1983). *Cognitive Processes and Emotional Disorders*. New York: Guilford Press.
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment*, 36, 41-54.
- Greenberg, L.S. (2002). *Emotion-focused therapy: Coaching clients to work through their feelings*. Washington, DC: American Psychological Association.
- Griffin, M. G., Resick, P. A., & Mechanic, M. B. (1997). Objective assessment of peritraumatic dissociation: Psychophysiological indicators. *American Journal of Psychiatry*, 154, 1081-1088.
- Gross, J.J. (Ed.) (2007). *Handbook of emotion regulation*. New York, NY: Guilford Press.
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2, 271-299.

- Gross, J. J., Richards, J. M., & John, O. P. (2006). Emotion regulation in everyday life. In D. K. Snyder, J. Simpson, & J. N. Hughes (Eds.), *Emotion Regulation in Couples and Families: Pathways to Dysfunction and Health* (pp. 13–35). Washington, DC: American Psychological Association.
- Gross, J. J., & Munoz, R. E (1995). Emotion regulation and mental health. *Clinical Psychology: Science and Practice*, 2, 151-164.
- Hong, R.Y. (2007). Differential associations with anxious and depressive symptoms and coping behavior. *Behaviour Research and Therapy*, 45, 277–290.
- Irons, C., Gilbert, P., Baldwin, M. W., Baccus, J. R., & Palmer, M. (2006). Parental recall, attachment relating and self-attacking/self-reassurance: Their relationship with depression. *British Journal of Clinical Psychology*, 45, 297-308.
- Irwin, H.J. (1998). Affective predictors of dissociation. II. Shame and guilt. *Journal of Clinical Psychology*, 54, 237 – 245.
- Just, N., & Alloy, L.B. (1997). The response styles theory of depression: Tests and an extension of the theory. *Journal of Abnormal Psychology*, 106, 221–229.
- Kaufman, G. (1989). *The Psychology of Shame: Theory and Treatment of Shame-based Syndromes*. New York: Springer.
- Kashdan, T.B., Elhai, J.D., & Breen, W.E. (2008). Social anxiety and disinhibition: An analysis of curiosity and social rank appraisals, approach-avoidance conflicts, and disruptive risk-taking behavior. *Journal of Anxiety Disorders*, 22, 925-939.
- Kuyken, W. & Brewin, C.R. (1994). Intrusive memories of childhood abuse during depressive episodes. *Behaviour Research and Therapy*, 32, 525-528.
- Kuehner, C., & Webber, I. (1999). Responses to depression in unipolar depression patients: An investigation of Nolen-Hoeksema's response style theory. *Psychological Medicine*, 29, 1323-1333.

- Lewis, M. (1992). *Shame: The Exposed Self*. New York: The Free Press.
- Liotti, G. (2000) Disorganized attachment, models of borderline states, and evolutionary psychotherapy. In P. Gilbert & K. Bailey (Eds.), *Genes on the couch: Essays in evolutionary psychotherapy* (pp. 232-256). Hove: Psychology Press.
- Linehan, M. M. (1993). *Cognitive Behavioral Treatment of Borderline Personality Disorder*. New York: Guilford Press.
- Lovibond, P. & Lovibond, H. (1995). The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with beck depressive and anxiety inventories. *Behaviour Research and Therapy*, 3, 335–343.
- Lynch, T. R., Trost, W. T., Salsman, N., & Linehan, M. M., (2007). Dialectical behavior therapy for borderline personality disorder. *Annual Review of Clinical Psychology*, 3, 181-205.
- Matos, M., & Pinto-Gouveia, J. (2006). The Shame Experiences Interview. *Unpublished manuscript*.
- Matos, M., & Pinto-Gouveia, J. (2009). Shame as a Traumatic Memory. *Clinical Psychology and Psychotherapy*, 17, 299-312. DOI: 10.1002/cpp.659
- Matos, M., & Pinto-Gouveia, J., (2010). Propriedades psicométricas da versão portuguesa da Escala do Impacto do Acontecimento-Revista (IES-R). *Psychologica* (In press)
- Matos, M., & Pinto-Gouveia, J., (2011). The different impact of shame memories with attachment figures and with others on depression vulnerability. (*Submitted manuscript*)
- Matos, M., Pinto-Gouveia, J., & Gilbert, P. (2010). The effect of shame and shame memories on paranoid ideation and social anxiety in a general community sample. (*Manuscript under review*);
- Masten, A.S. (2001). Ordinary Magic: Resilience processes in development. *American Psychologist*, 56, 227-238.

- McAdams, D. P. (2001). The psychology of life stories. *Review of General Psychology*, 5, 100-122.
- McAdams, D. P., Josselson, R. & Lieblich, A. (Eds.) (2006). *Identity and story: Creating self in narrative*. Washington, DC: APA Books.
- McFarlane, A. C. (1988). The longitudinal course of posttraumatic morbidity. *Journal of Nervous and Mental Disease*, 176, 30-39.
- Mennin, D.S., & Farach, F.J. (2007). Emotion and evolving treatments for adult psychopathology. *Clinical Psychology: Science and Practice*, 14, 329-352.
- Mikulincer, M., & Shaver, P. R. (2004). Security-based self-representations in adulthood: Contents and processes. In W. S. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 159-195). New York: Guilford Press.
- Mikulincer, M & Shaver, P. (2005). Mental representations of attachment security: Theoretical foundations for a positive social psychology. In M.W. Baldwin (Ed.), *Interpersonal Cognition* (p.233-2-66). New York: Guilford Press.
- Mikulincer, M. & Shaver, P.R. (2007). *Attachment in Adulthood: Structure, Dynamics, and Change*. New York: Guilford.
- Michael, T., Halligan, S. L., Clark, D. M., & Ehlers, A. (2007). Rumination in posttraumatic stress disorder. *Depression and Anxiety*, 24, 307-317.
- Moberly N. J., & Watkins E. R. (2008). Ruminative self-focus, negative life events, and negative affect. *Behaviour Research and Therapy*, 46, 1034-1039.
- Muris, P., Roelofs, J., Rassin, E., Franken, I., & Mayer, B. (2005). Mediating effects of rumination and worry on the links between neuroticism, anxiety and depression. *Personality and Individual Differences*, 39, 1105–1111.
- Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *Journal of Abnormal Psychology*, 109, 504–511.

- Nolen-Hoeksema, S., Morrow, J., & Fredrickson, B.L. (1993). Response styles and the duration of episodes of depressed mood. *Journal of Abnormal Psychology, 102*, 20–28.
- Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science, 3*, 400-424.
- Offen, L., Thomas, G., & Waller, G. (2003). Dissociation as a mediator of the relationship between recalled parenting and the clinical correlates of auditory hallucinations. *British Journal of Clinical Psychology, 42*, 231-241.
- Ogawa, J. R., Sroufe, L. A., Weinfeld, N. S., Carlson, E. A., & Egeland, B. (1997). Development and the fragmented self: Longitudinal study of dissociative symptomatology in a nonclinical sample. *Development and Psychopathology, 9*, 855-879.
- Pais-Ribeiro, J., Honrado, A., & Leal, I. (2004). Contribuição para o estudo da adaptação portuguesa das Escalas de Ansiedade Depressão e Stress de Lovibond e Lovibond. *Psychologica, 36*, 235–246.
- Papageorgiou, C., & Wells, A. (2003). An empirical test of a clinical metacognitive model of rumination and depression. *Cognitive Therapy and Research, 27*, 261–273.
- Panksepp, J. (1998). *Affective neuroscience: the foundation of human and animal emotion*. New York: Oxford University Press.
- Parker, G. (1983). *Parental overprotection: A risk factor in psychosocial development*. New York: Grune and Stratton.
- Perris, C. (1994). Linking the experience of dysfunctional parental rearing with manifest psychopathology: A theoretical framework. In C. Perris, W. A. Arrindell, & M. Eisemann (Eds.), *Parenting and psychopathology*. Chichester: Wiley.

- Perry, B., Pollard, R., Blakley, T., Baker W., & Vigilante, D. (1995). Childhood trauma, the neurobiology of adaptation, and “use dependent” development of the brain: How states become traits. *Journal of Infant Mental Health*, 16, 271-291.
- Perris, C. & Gilbert, P. (2000). Early experiences and subsequent psychosocial adaptation. *Clinical Psychology and Psychotherapy*, 7, 243-342.
- Pinto-Gouveia, J., & Albuquerque, P. (2007). Portuguese translation and adaptation of the White Bear Suppression Inventory. (*Unpublished manuscript*)
- Pinto-Gouveia, J., & Dinis, A. (2006). Portuguese translation and adaptation of the Rumination Responses Questionnaire. (*Unpublished manuscript*)
- Pinto-Gouveia, J. & Matos, M. (2010). Can shame memories become a key to identity? The centrality of shame memories predicts psychopathology. *Applied Cognitive Psychology*, 25, 281-290. DOI: 10.1002/acp1689.
- Purdon, C. (1999). Thought suppression and psychopathology. *Behaviour Research and Therapy*, 37, 1029-1054.
- Putnam, F. W., Carlson, E. B., Ross, C. A., Anderson, G., Clark, P., Torem, M., Bowman, E. S., Coons, P., Chu, J. A., Dill, D. L., Loewenstein, R. J., & Braun, B.G. (1996). Patterns of dissociation in clinical and nonclinical samples. *Journal of Nervous and Mental Disease*, 184, 673-679.
- Putnam, F.W., Guroff, J.J., Silberman, E.K., Barban, L., & Post, R.M. (1986). The clinical phenomenology of multiple personality disorder: Review of 100 cases. *Journal of Clinical Psychiatry*, 47, 285-293.
- Raes, F. & Hermans, D. (2008). On the mediating role of subtypes of rumination in the relationship between childhood emotional abuse and depressed mood: Brooding vs. reflection, *Depression and Anxiety*, 25, 1067–1070.

- Rockliff, H., Karl, A., McEwan, K., Gilbert, J., Matos, M., & Gilbert, P. (2011). Effects of Intranasal Oxytocin on Compassion Focused Imagery. *Emotion* (In press).
- Ross, C.A., Miller, D.S., Reagor, P., Bjornson, L., Fraser, G.A., & Anderson, G. (1991). Structured interview: Data on 102 cases of multiple personality disorder from four centers. *American Journal of Psychiatry*, 147, 596-601.
- Rottenberg, J., Gross, J. J., & Gotlib, I. H. (2005). Emotion context insensitivity in major depressive disorder. *Journal of Abnormal Psychology*, 114 , 627–639.
- Rottenberg, J., & Gross, J.J. (2003). When emotion goes wrong: Realizing the promise of affective science. *Clinical Psychology: Science and Practice*, 10, 227–232.
- Rottenberg, J., & Gross, J.J. (2007). Emotion and emotion regulation: A map for psychotherapy researchers. *Clinical Psychology: Science and Practice*, 14, 323-328.
- Safran, J. D., & Segal, Z. V. (1990). *Interpersonal process in cognitive therapy*. New York: Basic Books.
- Szasz, P.L. (2009). A mediation analysis of thought suppression, depressive rumination, and depression. *Journal of Cognitive and Behavioral Psychotherapies* Vol.9, No. 2, September 2009, 199-209.
- Schore, A.N. (1994). *Affect Regulation and the Origin of the Self: The Neurobiology of Emotional Development*. Hillsdale: N.J. Lawrence Erlbaum.
- Schore, A.N. (1998). Early shame experiences and infant brain development. In P. Gilbert & B. Andrews (Eds.), *Shame: Interpersonal Behavior, Psychopathology and Culture* (pp. 57- 77). New York: Oxford University Press.
- Schore, A.N. (2001). The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal*, 22, 201-269.

- Singer, J.A., & Salovey, P. (1993). *The remembered self: Emotion and memory in personality*. New York: Free Press.
- Siegel, D. (2001). Toward an interpersonal neurobiology of the developing mind: Attachment relationships, “mindsight,” and neural integration. *Infant Mental Health Journal*, 22, 67-94.
- Spasojevic, J., & Alloy, L. B. (2001). Rumination as a common mechanism relating depressive risk factors to depression. *Emotion*, 1(1), 25-37.
- Speckens, A. M., Ehlers, A., Hackmann, A., Ruths, F. A., & Clark, D. M. (2007). Intrusive memories and rumination in patients with post-traumatic stress disorder: a phenomenological comparison. *Memory*, 15, 249–257.
- Sutin, A. R., & Robins, R. W. (2008). Going forward by drawing from the past: Personal strivings, personally meaningful memories, and personality traits. *Journal of Personality*, 76, 631-663.
- Szentagotai, A. (2006). Irrational beliefs, thought suppression and distress – A mediation analysis. *Journal of Cognitive and Behavioral Psychotherapies*, 6, 119-127.
- Stuewig, J., & McCloskey, L. (2005). The impact of maltreatment on adolescent shame and guilt: Psychological routes to depression and delinquency. *Child Maltreatment*, 10, 324-336.
- Talbot J.A., Talbot, N.L., & Tu X. (2004). Shame-proneness as a diathesis for dissociation in women with histories of childhood sexual abuse. *Journal of Traumatic Stress*, 17, 445-448.
- Tangney, J.P. & Fischer, K.W. (Eds.) (1995). *The Self-Conscious Emotions: Shame, Guilt, Embarrassment, and Pride*. New York: Guilford Press.
- Tangney, J. P., & Dearing, R. L. (2002). *Shame and Guilt*. New York: Guilford Press.
- Teicher, M. (2002). Scars that won't heal: the neurobiology of child abuse. *Scientific American*, 286, 68-75.

- Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-factor model of personality: Distinguishing rumination from reflection. *Journal of Personality and Social Psychology*, 76, 284-304.
- Tracy, J.L., & Robins, R.W. (2004). Putting the self into self-conscious emotions: A theoretical model. *Psychological Inquiry*, 15, 103-125.
- Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: a psychometric analysis. *Cognitive Therapy and Research*, 27, 247-25.
- Ward, A., Lyubomirsky, S., Sousa, L., & Nolen-Hoeksema, S. (2003). Can't quite commit: Rumination and uncertainty. *Personality & Social Psychology Bulletin*, 29, 96-107.
- Watkins, E. (2004). Adaptive and maladaptive ruminative self-focus during emotional processing. *Behaviour Research and Therapy*, 42, 1037-1052.
- Watkins, E. (2008). Constructive and unconstructive repetitive thought. *Psychological Bulletin*, 134, 163-206
- Webb, M., Heisler, D., Call, S., Chickering, S. A., & Colburn, T.A. (2007). Psychological maltreatment: Its relationship to shame, guilt, and depression. *Child Abuse & Neglect: The International Journal*, 31, 1143-1153.
- Weiss, D.S. & Marmar, C.R. (1997). The Impact of Event Scale – Revised. In J.P. Wilson & T.M. Keane (Eds.), *Assessing Psychological Trauma and PTSD* (pp. 399-411). NY: The Guilford Press.
- Wegner, D. M., & Erber, R. (1992). The hyperaccessibility of suppressed thoughts. *Journal of Personality and Social Psychology*, 63, 903-912.
- Wegner, D. M., Schneider, D. J., Carter, S. R., & White, T. L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology*, 53, 5-13.
- Wegner, D. M., & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality*, 62, 615-640.

- Wenzlaff, R. M., & Wegner, D. M. (2000). Thought suppression. *Annual Review of Psychology*, 51, 59-91.
- Wells, A. (2000). *Emotional disorders and metacognition: Innovative cognitive therapy*. Chichester, UK: Wiley.
- Wells, A. & Papageorgiou, C. (1995). Worry and the incubation of intrusive images following stress, *Behaviour Research and Therapy*, 33, 579–583
- Yoshizumi, T., Murase, S., Murakami, T., & Takai, J. (2007). Dissociation as a mediator between perceived parental rearing style and depression in an adult community population using college students. *Personality and Individual Differences*, 43, 353-364.
- Zatzick, D. F., Marmar, C. F., Weiss, D. T., & Metzler, T. (1994). Does trauma-linked dissociation vary across ethnic groups? *Journal of Nervous and Mental Disease*, 182, 576–582.

Table 1: Means (M), standard deviations (SD) and Cronbach' alphas for self report measures (N=90)

| Variables | M | SD | Cronbach α |
|------------------------------------------------------------------|-------|-------|----------------------|
| Shame traumatic memory with others (IES-R_Others) | 3.27 | 2.13 | .94 |
| Shame traumatic memory with attachment figures (IES-R_AttachFig) | 2.97 | 1.98 | .94 |
| Depression (DASS-42 Depression subscale) | 7.35 | 7.87 | .95 |
| Rumination brooding (RRQ Brooding subscale) | 2.35 | .61 | .76 |
| Rumination reflection (RRQ Reflection subscale) | 2.36 | .68 | .81 |
| Thought suppression (WBSI) | 47.59 | 11.07 | .90 |
| Dissociation (DES II) | 15.42 | 9.67 | .92 |

Table 2: Correlations (2-tailed Pearson r) between Shame traumatic memory with others (IES-R_Others), Shame traumatic memory with attachment figures (IES-R_AttachFig), Depression (DASS-42 Depression), Rumination (RRQ-Brooding; RRQ-Reflection), Dissociation (DES-II) and Thought suppression (WBSI) (N=90).

| | IES-R_ Others | IES-R_ AttachFig | DASS-42 Depression | RRQ- Brooding | RRQ- Reflection | WBSI | DES- II |
|-----------------------|------------------|---------------------|-----------------------|------------------|--------------------|--------|------------|
| IES-R_Others | | | | | | | |
| IES-R_AttachFig | .50*** | | | | | | |
| DASS-42 Depression | .30** | .47*** | | | | | |
| RRQ Brooding | .38*** | .37*** | .46*** | | | | |
| RRQ-Reflection | .18 | .22* | .31** | .37*** | | | |
| WBSI | .39*** | .41*** | .35*** | .56*** | .22* | | |
| DES-II | .36*** | .39*** | .35*** | .43*** | .36*** | .54*** | |

*** $p < .001$. ** $p < .010$. * $p < .050$

Table 3. Mediation effect of Brooding, Thought Suppression and Dissociation on the relationship between Shame Traumatic Memory with Others and Depression

| Testing steps for mediation | Depression | | | | | |
|-------------------------------|------------|-------------|---------|----------|--------------------------------|--------------|
| | <i>B</i> | <i>SE B</i> | β | <i>F</i> | Adjusted <i>R</i> ² | ΔR^2 |
| Step 1 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IES-R_Others | 1.10 | .38 | .30** | | | |
| | | | | 8.59** | .08 | .09 |
| Step 2 | | | | | | |
| Outcome: Brooding | | | | | | |
| Predictor: IES-R_Others | .11 | .30 | .38*** | | | |
| | | | | 14.44*** | .13 | .14 |
| Step 3 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IES-R_Others | .54 | .37 | .15 | | | |
| Mediator: Brooding | 5.17 | 1.30 | .41*** | | | |
| | | | | 12.97*** | .21 | .23 |
| Step 1 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IES-R_Others | 1.10 | .38 | .30** | | | |
| | | | | 8.59** | .08 | .09 |
| Step 2 | | | | | | |
| Outcome: Thought Suppression | | | | | | |
| Predictor: IES-R_Others | 2.02 | .51 | .39*** | | | |
| | | | | 15.54*** | .14 | .15 |
| Step 3 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IES-R_Others | .70 | .40 | .19 | | | |
| Mediator: Thought Suppression | .20 | .08 | .28** | | | |
| | | | | 8.02*** | .14 | .16 |
| Step 1 | | | | | | |
| Outcome: | | | | | | |
| Predictor: IES-R_Others | 1.10 | .38 | .30** | | | |
| | | | | 8.59** | .08 | .09 |
| Step 2 | | | | | | |
| Outcome: Dissociation | | | | | | |
| Predictor: IES-R_Others | 1.65 | .45 | .36*** | | | |
| | | | | 13.40*** | .12 | .13 |
| Step 3 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IES-R_Others | .74 | .40 | .20 | | | |
| Mediator: Dissociation | .22 | .09 | .27* | | | |
| | | | | 7.85*** | .13 | .15 |

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 4. Mediation effect of Brooding, Reflection, Thought Suppression, Dissociation on the relationship between Shame Traumatic Memory with Attachment Figures and Depression

| Testing steps for mediation | <i>B</i> | <i>SEB</i> | <i>B</i> | Depression | | |
|-------------------------------|----------|------------|----------|------------|------------------------|-----------------|
| | | | | <i>F</i> | AdjustedR ² | ΔR ² |
| Step 1 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IESR_AttachFig | 1.84 | .38 | .47*** | 24.22*** | .21 | .22 |
| Step 2 | | | | | | |
| Outcome: Brooding | | | | | | |
| Predictor: IESR_AttachFig | .11 | .03 | .37*** | 13.60*** | .12 | .13 |
| Step 3 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IES_AttachFig | 1.36 | .38 | .34*** | | | |
| Mediator: Brooding | 4.27 | 1.22 | .33*** | 19.80*** | .30 | .31 |
| Step 1 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IESR_AttachFig | 1.84 | .38 | .47*** | 24.22*** | .21 | .22 |
| Step 2 | | | | | | |
| Outcome: Reflection | | | | | | |
| Predictor: IESR_AttachFig | .08 | .04 | .22* | 4.45* | .04 | .05 |
| Step 3 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IESR_AttachFig | 1.66 | .38 | .42*** | | | |
| Mediator: Reflection | 2.51 | 1.10 | .22* | 15.33*** | .24 | .26 |
| Step 1 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IESR_AttachFig | 1.84 | .38 | .47*** | 24.22*** | .21 | .22 |
| Step 2 | | | | | | |
| Outcome: Thought Suppression | | | | | | |
| Predictor: IESR_AttachFig | 2.27 | .54 | .41*** | 17.42*** | .16 | .17 |
| Step 3 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IESR_AttachFig | 1.53 | .40 | .38*** | | | |
| Mediator: Thought Suppression | .14 | .07 | .20 | 14.37*** | .23 | .25 |
| Step 1 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IESR_AttachFig | 1.84 | .38 | .47*** | 24.22*** | .21 | .22 |
| Step 2 | | | | | | |
| Outcome: Dissociation | | | | | | |
| Predictor: IESR_AttachFig | 1.89 | .48 | .39*** | 15.56*** | .14 | .15 |
| Step 3 | | | | | | |
| Outcome: Depression | | | | | | |
| Predictor: IESR_AttachFig | 1.55 | .40 | .39*** | | | |
| Mediator: Dissociation | .16 | .08 | .19 | 14.33*** | .23 | .25 |

* $p < .05$. ** $p < .01$. *** $p < .001$