Adaptation and validation of the “Continuing Bond Scale” in an Italian context. An instrument for studying the persistence of the bond with the deceased in normal and abnormal grief

Adattamento e validazione del "Continuing Bonds Scale" nel contesto italiano. Uno strumento per studiare la persistenza del legame con il defunto nel lutto normale e patologico

Maria Luisa De Luca¹,², Giuliano Grossi²,³, Graziana Zaccarello¹,², Rossella Greco⁴, Marco Tineri⁵,⁶, Enea Slavic⁴, Alfredo Altomonte⁶,⁷, Antonio Palummieri⁷

Abstract
The study presents the Italian validation of the questionnaire Continuing Bonds Scale (CBS) by Field and Filanosky (2010). The questionnaire consists of two scales: Externalized (6 items) and Internalized (10 items) and was completed by 414 people who have suffered the loss of a loved one. Exploratory Factor Analysis revealed a two-factor model, 16 items solution (KMO = .928, χ² = 2694.84, df = 120, p < .001). Confirmatory Factor Analyses indicated that the two-factor solution provided a better fit to the data (CFI = .935; TLI = .925; RMSEA = .063). The factors demonstrated good internal reliability. The study shows that CBS has good psychometric properties for clinical use.

Key words: grief; validation; Continuing Bonds Scale (CBS); questionnaire

Riassunto
Questo studio presenta la validazione italiana del questionario Continuing Bonds Scale (CBS) elaborato da Field e Filanosky (2010). Il questionario è costituito da due scale: una rappresenta il legame esternalizzato con il defunto (6 item) e l'altra rappresenta il legame internalizzato (10 item). È stato somministrato a 414 soggetti che hanno subito la perdita di una persona cara. L'analisi fattoriale esplorativa ha rivelato un modello a due fattori nella soluzione con 16 item (KMO = .928, χ² = 2694.84, df = 120, p < .001). L'analisi fattoriale confermativa ha indicato che la soluzione a due fattori si adattava meglio ai dati (CFI = .935; TLI = .925; RMSEA = .063). I due fattori hanno dimostrato una buona attendibilità interna. Lo studio dimostra che la CBS ha buone proprietà psicometriche per l'utilizzo in ambito clinico.

Parole chiave: lutto; validazione; Continuing Bonds Scale (CBS); questionario

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Introduction

In the past thirty years many studies on processes involved in normal and pathologic grief have been published; the recent, controversial, introduction of a category concerning the prolonged grief in the DSM-5 shows the strong theoretical and clinical interest (De Luca, 2013; Frances, 2013; Wakefield, 2013). The experts in the thanatological field who have studied the psychological processes involved in the grief highlight that, in addition to handle the sorrow, people who suffer an important loss have to deal with a set of changes related to it. A whole set of beliefs and values, based on the bond with the deceased, is being questioned; one’s behaviors and ways of thinking are being modified. This set of changes, that include an overall review of the self-view and view of the world, is a complex process that requires time and effort (Neimeyer & Sands, 2011; Parkes, 1996). The grief’s scholars agree on the concepts expressed above and on the idea that this elaboration process and transformation is deeply idiosyncratic and affected by multiple variables: the type of loss (of a son/daughter, of a parent, of a partner, of a brother or a sister, of an intimate friend); the gender differences in coping; the differences in the attachment’s styles (regarding both the attachment style developed during the childhood and the attachment towards the deceased); the cultural differences, etc. (Neimeyer, Harris, Winokuer & Thornton, 2011; Mikulincer & Shaver, 2008; Mikulincer & Shaver, 2013; Stroebe, Hansson, Schut & Stroebe, 2008).

The individual’s response to the loss of someone’s emotionally significant can be placed on a continuum that goes from “normal” grief or not complicated or prolonged on one pole, to a pathologic result on the other pole; for example in the persistent grief disorder described in the DSM-5 (APA, 2013). In between the two ends there are different prototypical trajectories and understanding them is precious both for a valid preventive intervention and for an efficient therapeutic intervention (Bonanno, 2004, 2005; Bonanno, Westphal & Mancini, 2010; De Luca, 2010; Greco & De Luca, 2012).

In recent years the grief’s scholars have faced various changes, already summarized by Hagman (2001) in his analysis of traditional (or “standard”) and current models. One of the key points that distinguishes the “traditional” models, such as Freud’s or the ones influenced by it (Freud, 1917/1961), from the “current” ones such as the Continuing Bond (Klass, Silverman & Nickman, 1996) or the dual Process Model (Stroebe, Hansson, Stroebe & Schut, 2001) is the “detachment-continuity” issue. According to the standard model, grief’s main role is to break the attachment to the deceased: “The primary function of mourning is to relinquish one’s attachment to the dead person. Even those who included identification as a component of the standard model saw identification as a strategy to give up the object rather than maintain continuity in a meaningful, vital sense” (Hagman, 2001, p. 19). The 1996 publication of the text “Continuing bonds: New understanding of grief” by Klass and colleagues (Klass, Silverman & Nickman, 1996) marked a turning point regarding the “detachment-continuity” issue. This was possible thanks to both the gathering of new data which contrasted the standard model and also the creation of a framework more coherent with the attachment theory. Even though Klass and colleagues have not been the first to support the continuity perspective (see the work of psychoanalytic authors, reviewed in the text by Klass and coll. such as: Abraham, Shafer, Volkan, Fenichel, Pincus, Thahka) the study has allowed a theoretical systematization and has favored the research on the topic. This is shown by the 2006 publication of a special number of the journal Death Studies dedicated to the model’s development (Field, 2006; Klass, 2006; Neimeyer, Baldwin & Gillies, 2006) and from the constant presence of chapters dedicated to this model in the main grief’s manuals published in English (Field, 2008; Field & Wogrin, 2011; Hagman, 2001). The key point stated in the “Continuing Bonds” (from now on: CB) model is that normal people,
belonging to different cultures, show healthy and adaptive forms of continuation of the bond with significant deceased ones and that such forms of ongoing bonds are different from the chronic grief or unresolved grief. The data reveals that mourners remain emotionally bound to the deceased and build an internal representation of this bond, which is part of this normal grief process. Preserving and modifying the bond is part of a successful grief process. This happens through an accommodation, as stated by Piaget, rather than by a “closure” or a “resolution” as supported by the standard model: “the studies in this book suggest that we need to consider bereavement as a cognitive as well as an emotional process that takes place in a social context of which the deceased is a part. The process does not end, but in different ways bereavement affects the mourner for the rest of his or her life. People are changed by the experience; they do not get over it, and part of the change is a transformed but continuing relationship with the deceased.” (Klass, Silverman & Nickman, 1996, p. 19). An important debate with the attachment theorists on the issue “continuity-detachment” took place, in particular on the use of the term “detachment” to describe the final phase of the child’s reaction to the separation from the mother. Regarding this Fraley and Shaver (1999), motivated by the CB’s theorists’ critiques, have analyzed Bowlby’s writings to prove that he did not support the existence of a firm sequence of stages in grief or that the “detachment” was the final adjustment to a permanent loss. Even Mikulincer and Shaver (2008) highlight the coherence between Bowlby’s final position and what was stated by the CB’s scholars.

Field himself, the main developer of the scale present in this work, shows how Bowlby describes a painful process of “reorganization” in which the permanence of the loss and the impossibility of the physical proximity are recognized, and the closeness with the deceased is set through internalization: “This is shown in the continued use of the attachment system functions of safe haven and secure base in the relationship with the deceased, despite the impossibility of regaining physical proximity” (Field, 2008, para. 6).

In recent years the CB’s studies focused on the identification of the features and the conditions in which the CB is adaptive or maladaptive, namely how much and in which way it is part of a healthy grief elaboration or a form of unresolved or chronic grief. Notably, many studies have focused on the relationship among the different CB’s forms and the attachment patterns, the cultural aspects and the influence of family and individual variables (Field, 2008; Field & Filanosky, 2010; Field & Wogrin, 2011; Field, Nichols, Holen & Horowitz, 1999; Field, Packman, Ronen, Pries, Davies & Kramer, 2013; Mikulincer & Shaver, 2008).

The studies on CB, summarized in Table 1, have led to different developments of the CB Scale (from now on: CBS). The first version, Continuing Attachment Items, appeared in 1999 in a study conducted by Fields and colleagues on a population of widowers. (Fields, Nichols, Holen & Horowitz, 1999). The authors present a structured interview consisting of 30 items that take in account the behaviors and the experiences regarding the loss. The items refer to feeling the presence of the deceased, keeping objects that belonged to the deceased as a guide, and his remembrance. The scale recalls the three constructs observed in 1999 and adds: the identification with the deceased, the bond with the deceased as a guide, and his remembrance. The tool has recently been used by Neimeyer and colleagues in one of their studies (Neimeyer, Baldwin & Gillies, 2006). Field and Friederichs (2004) develop the CBS suggesting a 6 items version addressed to widows, CB Coping, where participants have been asked to answer referring to the last three hours.
## Table 1 - Synopsis of the scientific literature on Continuing Bonds Scale

<table>
<thead>
<tr>
<th>Year</th>
<th>Authors</th>
<th>Population</th>
<th>Name of the instrument</th>
<th>Item</th>
<th>Area of inquiry</th>
<th>Factors</th>
<th>Likert Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>Field, N.P., Nichols, C., Holen, A. &amp; Horowitz, M.J.</td>
<td>Widowers (N=89) Age: 21-55 years Time since death: 3-6 months</td>
<td>Continuing Attachment Items*</td>
<td>4*</td>
<td>Sense of presence of the deceased - Keeping objects that belonged to the deceased - Use of objects that belonged to the deceased - Focusing on memories</td>
<td>1 Factor (On going attachment)</td>
<td>3 points (0-2)</td>
</tr>
<tr>
<td>2003</td>
<td>Field, N.P., Gal-Oz, E. &amp; Bonanno, G.A.</td>
<td>Widowers (N=39) Age: 21-55 years Time since death: 60 months-5 years</td>
<td>Continuing Bonds Scale (CBS)</td>
<td>11</td>
<td>- Sense of presence of the deceased - Keeping objects that belonged to the deceased - Focusing on memories - Identification with the deceased - Bond with the deceased - The deceased as guidance - Recalling memories</td>
<td>1 Factor (Continuing bond)</td>
<td>5 points (1-5)</td>
</tr>
<tr>
<td>2004</td>
<td>Field, N.P. &amp; Friedrichs, M.</td>
<td>Widows (N=30) Age: &gt;55 years Time since death: 4 months – 2 years</td>
<td>CB Coping</td>
<td>6</td>
<td>- Conversation with the deceased - Use of objects that belonged to the deceased - Positive memories of the deceased - Actions that would have made the deceased happy - Desire for reunification - The deceased as guidance</td>
<td>1 Factor (Continuing bond)</td>
<td>5 points (0-4)</td>
</tr>
<tr>
<td>2004</td>
<td>Field, N.P., Packman, W., Davies, B. &amp; Kramer, R.</td>
<td>Parents that have lost a child</td>
<td>Continuing Bonds Interview</td>
<td>164</td>
<td>- On going connection with the deceased - Personal items / goods - Places related to the deceased - Positive memories - Dreams involving the deceased - Influence of the deceased on choices and daily preferences - Identification with the deceased - Recalling and sharing memories with others - Contact with the spirit of the deceased - Creation of memorial sites - Intrusion and intrusive symptoms - Conversations with the deceased</td>
<td>Semi structured</td>
<td>6 points (0-5)</td>
</tr>
</tbody>
</table>

*Taken from Horowitz’s et al. (1997) 30 item interview
<table>
<thead>
<tr>
<th>Year</th>
<th>Authors</th>
<th>Population</th>
<th>Name of the instrument</th>
<th>Item</th>
<th>Area of inquiry</th>
<th>Factors</th>
<th>Likert Scale</th>
</tr>
</thead>
</table>
| 2005 | Field, N.P. | Students (N=375)  
  Age: 18-53 years  
  Time since death: 2 years | Continuing Bonds Scale (CBS)* | 11 | cfr. Field et al. 2003 [Adaptation on general population] | 1 Factor  
  (Continuing bond) | 5 points (1-5) |
| 2006 | Schut, H.A.W., Stroebe, M.S., Boelen, P.A. & Zijerveld, A.M. | Bereaved people (N=55)  
  Average age: 30 years | Continuing Bonds Scale (CBS) | 6 | Continuing bond with the deceased | 1 Factor  
  (Continuing bond) | |
| 2010 | Field N.P. & Filiposky C. | Bereaved people (N=502)  
  Age: >18 years  
  Time since death: not specified | Continuing Bonds Scale (CBS) | 16 | Continuing bond with the deceased | 2 Factors  
  (CB Internalized; CB Externalized) | 4 points (0-3) |
| 2011 | Packman, W., Field N., P., Carmack B. J. & Ronen R. | People that have lost a dog or a cat  
  Age: 25-79 years  
  Time since death: 1 year | Continuing Bonds Interview*  
  Use of objects that belonged to the pet  
  Visiting places associated with the pet  
  Loving memories  
  Dreams  
  Reunification with the pet  
  Maintaining ideals or desires  
  Daily decisions  
  Recalling memories  
  Memorial sites  
  Intrusive symptoms  
  Lessons learned | 1 Factor  
  (Continuing bond) | 4 point scale |
| 2012 | Stroebe, M. S., Abakoumkin, G., Stroebe, W. & Schut H. | Widowers  
  (N= 60).  
  Average age: 53 years  
  Time since death: 2 years | Continuing Bonds Index | 6 | Sense of presence of the deceased | 2 Factors  
  (Difficulties in letting go, absence of bond) | True/false |
| 2014 | Scholtes, D. & Browne, M. | Bereaved parents  
  (N=354)  
  Age: 19-72 years  
  Time since death: 3 months – 10 years | Continuing Bonds Scale | 25 | Deep connections  
  Observance of rituals  
  Spiritual / supernatural  
  Matured memories / internalized  
  Conversations  
  Imagination  
  Visiting places related with the deceased  
  Transference | 3 Factors  
  (Internalized expressions; Externalized expressions; transference) | 5 points (1-5) |
The version that appears in 2010 (Field & Filanosky, 2010) - object of this study- proposed for the first time the two factors structure: externalized CB and internalized CB.

Field and colleagues’ studies on CB have led to a CB scale development, through a selection of items (from 47 to the current 16), and to the identification of two main forms of CB related to the adaptive and maladaptive processes of grief’s elaboration: the internalized form and the externalized form. While the qualitative data affirmed an adaptive function of the CB, opposite data emerged from the quantitative studies until the Field and Filanosky (2010) study identified, using the confirmative factor analysis, the two dimensions of the CB; the CB Scale of which we propose the Italian version is the one used in this fundamental study. Recently, this same version of the scale, based on the two CB’s dimensions (internalized and externalized), has been validated in China in a study by Li, Li and Shi (2015); even the Chinese version of CBS demonstrates good psychometric qualities and confirms the two-dimensional structure of the scale. The data collected up to now have demonstrated that the externalized CB is positively correlated with anxious attachment, with the poor integration of the loss and with poor emotion regulation. The main CB’s researchers’ interpretation is that the internal working models of the deceased has not yet been reorganized and the attachment system is still active, trying to reestablish the physical proximity. The internalized CB form is instead positively correlated with the post-traumatic growth and with the adaptive reorganization of the lost bond: “through internalization, it is possible to maintain a bond with the deceased that at the same time fully acknowledges the ending of the physical bond as it existed prior to the death. CB expressions that indicate internalization are therefore seen as integral to successful adaptation to bereavement” (Field, 2008, para. 1).

Field and colleagues, and the other CB’s scholars, highlight how important it is to collect new data, qualitative and quantitative, to have a better understanding of how the internalized CB is related with the positive grief elaboration’s trajectories, and how this process of internalization might be encouraged. We found these studies on grief process extremely interesting and innovative and this first CB scale version in Italian wants to be a solid contribution in increasing research in this field.

**Method**

**Continuing Bonds Scale (CBS)**

Filanosky has agreed to its publication in Italian (Appendix 1); to obtain the Italian adaptation the back translation (Beaton, Bombardier, Guillemin & Ferraz, 2000; Hambleton, 2001) has been carried out. The CBS (Continuing Bonds Scale, Field & Filanosky, 2010) is a self-report questionnaire that evaluates the relation that lasts with an important person after his death. The questionnaire, in its original form, is composed by 16 items with a possibility to answer on a 4 points Likert scale (from 0 = not at all to 3= constantly); the person is asked to answer taking in consideration the past month. The tool is composed by two factors: (1) externalized CB (2) internalized CB. The externalized CB factor is composed of 6 items. This type of CB expressions involving illusions and hallucinations are characterized by thinking or even sensing the deceased as still alive (for example, item 14 “I actually felt the deceased’s physical touch” or item 11 “I actually heard the voice of the deceased speak to me” where the hallucinatory and corporeal aspects dominate; or item 15 “I imagined that the deceased might suddenly appear as though still alive” where the illusory-imaginary aspect dominates). This factor is revealing of an unresolved grief process. The internalized CB factor is composed of 10 items that refer to a type of relation in which the person feels that the deceased is still part of his or her life as an internalized secure base, for example he is seen as a moral guide and a safe haven; his presence shows an adaptive bereavement elaboration process. This type of CB demonstrates how

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1 When we started this study Nigel Field was severely ill and died on December 5, 2013 (Neimeyer, 2014).
the deceased serves as a reference point in decision making, as a model (for example, in item 5: “When making important decisions, I thought about what the deceased might have done and used this in helping me make my decision” or in item 3 “I thought about the deceased as a role model who I try to be like”). In this type of CB the presence of the deceased has an “as though” quality and he is evoked through the memory as a mental image, indicating psychic proximity rather than physical proximity (for example, item 1: “I thought about the positive influence of the deceased on who I am today”). The factor analysis conducted by Field and Filanosky (2010) confirmed the two factors structure with an internal consistency of the externalized CB’s factor equal to $\alpha = .73$ and of the internalized CB factor equal to $\alpha = .92$.

### Participants

The participants are 414 Italians aged between 18 and 90 years old ($M = 42.23; DS = 15.24$), the majority are females (56.8%), married (52.3%) and with an average schooling (upper secondary school 52.4%). The 42.5% has answered to the CBS regarding the death of a parent; the majority stated that the cause of death was a chronic disease (51.2%) and for the 28.6% of the sample the time that has passed from the death was between 3 to 5 years (table 2). Just 18.1% has asked or received help following the death of a significant other. The survey participation was voluntary, totally anonymous and the sampling approach used was non-probability accidental sampling (Viganò, 2002), namely the research group recruited people that were more available (acquaintances, patients in psychotherapy, university students).

<table>
<thead>
<tr>
<th>Table 2 - Sample’s features (N=414)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>&lt;= 25</td>
</tr>
<tr>
<td>26 – 45</td>
</tr>
<tr>
<td>46 – 65</td>
</tr>
<tr>
<td>66+</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Single</td>
</tr>
<tr>
<td>Married</td>
</tr>
<tr>
<td>Cohabitant</td>
</tr>
<tr>
<td>Separated</td>
</tr>
<tr>
<td>Widower</td>
</tr>
<tr>
<td>Priest/Nun</td>
</tr>
<tr>
<td>Marital Status</td>
</tr>
<tr>
<td>Secondary school</td>
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<tr>
<td>Upper secondary school</td>
</tr>
<tr>
<td>Degree</td>
</tr>
<tr>
<td>Post degree</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Parent</td>
</tr>
<tr>
<td>Married-cohabitant</td>
</tr>
<tr>
<td>Brother-sister</td>
</tr>
<tr>
<td>Son-daughter</td>
</tr>
<tr>
<td>Friend</td>
</tr>
<tr>
<td>Other family members</td>
</tr>
<tr>
<td>Deceased’s relationship with the bereaved</td>
</tr>
<tr>
<td>Parent</td>
</tr>
<tr>
<td>1 year</td>
</tr>
<tr>
<td>2 years</td>
</tr>
<tr>
<td>3-5 years</td>
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<tr>
<td>6-10 years</td>
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<tr>
<td>11-20 years</td>
</tr>
<tr>
<td>&gt;20 years</td>
</tr>
<tr>
<td>Cause of death</td>
</tr>
<tr>
<td>Chronic illness</td>
</tr>
<tr>
<td>Acute illness</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Could prevent the death the loved one</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Asked for / received help</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>
**Statistical analysis**

To evaluate the feasibility of the data for Exploratory Factor Analysis (EFA), it was calculated Bartlett’s test of sphericity to value that the variables are correlated, and the Kaiser-Meyer-Olkin (KMO) test to measure of sampling adequacy.

The criteria used to determine the optimal number of factors were: a) the Kaiser criterion (retain and interpret any component that has an eigenvalue > 1.0) (Kaiser, 1960); b) the scree test (it plots the components as the X-axis and the corresponding eigenvalues as the Y-axis in descending order and determining where they level off. The break between the steep slope and a leveling off indicates the number of meaningful factors) (Cattel, 1966).

The principal component analysis (PCA) with Oblimin rotation and Kaiser Normalization was the method of extraction conducted on the set of 16 CB items, as recommended by Field and Filanoshy (2010), and only items that loaded >.40 were retained (Thompson, 2004).

Confirmatory factor analysis (CFA) was performed to assess the model fit for measurement model (Tanaka, 1993). The following fit indices were considered: Comparative Fit Index (CFI) (Bentler, 1990), Tucker Lewis Index (TLI) (Tucker & Lewis, 1973) and Root Mean Square Error of Approximation (RMSEA) (Steiger, 1989). Guidelines suggested that CFI and TLI equal to .90 or above (Bentler, 1990; Bollen, 1989), and RMSEA equal to .05 or below (Brown & Cudeck, 1993; Hu & Bentler, 1998) were indicative of good fit.

An internal consistency reliability analysis was performed for each factor using Cronbach’s alpha coefficients.

The t-tests and the one-way Analysis of Variance (one-way ANOVA) had been used with Bonferroni post-hoc test to assess the differences in demographic characteristics (gender, age, civil status, education, deceased’s relation to bereaved, time since death, cause of death).

CFA was performed with R ver. 3.0.3 (The R Foundation for Statistical Computing, Vienna, Austria). All other analyses were performed using IBM® SPSS® Statistics for Windows ver. 20.0. A two-tailed p < .05 was considered to be significant.

**Results**

**Factor Analysis**

The results of Bartlett’s test of sphericity ($\chi^2 = 2694.84$, df = 120, $p < .001$) and Kaiser-Meyer-Olkin measure of sampling adequacy (.928) suggested that the data were suitable for factor analysis. Regarding the number of factors, the results of the Kaiser criterion and scree test indicated that a two-factor solution was the best fit. The scree plot demonstrated a steep decline and a significant plateau after the second factor, lending evidence to a two-factor solution (Figure 1).

A two-factor solution accounted for 52.15% of the total variance: Internalized CB (eigenvalue = 6.55; variance explained =

![Figure 3 – Scree plot of eigenvalues for principal components analysis](image)
40.95%) and CB Externalized CB (eigenvalue = 1.79; variance explained = 11.21%). Factor loadings for each factor are presented in Table 3. Moreover, the table 3 reports the descriptive statistics for each item. The total correlation coefficients item-scale corrected are all above the .40. The Cronbach’s alfa values are satisfying for both the factors $\alpha = .892$ (internalized CB) and $\alpha = .802$ (externalized CB). There aren’t any items, that if excluded, might improve in a sensible way the internal coherence indexes.

The CFA for the two factors (Internalized CB: items 1, 2, 4, 7, 9, 10, 12, 14, 15, 16 and Externalized CB items 3, 5, 6, 8, 11, 13) provided an adequate model fit (CFI = .935; TLI = .925; RMSEA = .063) (Figure 2).

### CB and sample’s features

The table 4 shows that in the internalized CB ($t_{(412)}=-2.641\ p = .009$) women ($M = 12.45, DS = 6.31$) have a higher score compared to the men ($M = 10.80; DS = 6.25$) and such

<table>
<thead>
<tr>
<th>Item</th>
<th>Internalized CB</th>
<th>Externalized CB</th>
<th>Comunalities</th>
<th>$M (DS)$</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach’s $\alpha$ if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>.668</td>
<td>.278</td>
<td>.449</td>
<td>1.51 (.880)</td>
<td>.573</td>
<td>.885</td>
</tr>
<tr>
<td>2.</td>
<td>.692</td>
<td>.321</td>
<td>.479</td>
<td>1.45 (.839)</td>
<td>.606</td>
<td>.883</td>
</tr>
<tr>
<td>4.</td>
<td>.719</td>
<td>.417</td>
<td>.523</td>
<td>1.18 (.958)</td>
<td>.644</td>
<td>.880</td>
</tr>
<tr>
<td>7.</td>
<td>.715</td>
<td>.426</td>
<td>.520</td>
<td>1.30 (.975)</td>
<td>.645</td>
<td>.880</td>
</tr>
<tr>
<td>9.</td>
<td>.602</td>
<td>.559</td>
<td>.456</td>
<td>.85 (.893)</td>
<td>.560</td>
<td>.886</td>
</tr>
<tr>
<td>10.</td>
<td>.789</td>
<td>.403</td>
<td>.624</td>
<td>.98 (.892)</td>
<td>.716</td>
<td>.875</td>
</tr>
<tr>
<td>12.</td>
<td>.713</td>
<td>.272</td>
<td>.515</td>
<td>1.21 (.918)</td>
<td>.612</td>
<td>.882</td>
</tr>
<tr>
<td>14.</td>
<td>.791</td>
<td>.354</td>
<td>.626</td>
<td>1.04 (.868)</td>
<td>.709</td>
<td>.876</td>
</tr>
<tr>
<td>15.</td>
<td>.660</td>
<td>.510</td>
<td>.483</td>
<td>.73 (.840)</td>
<td>.598</td>
<td>.883</td>
</tr>
<tr>
<td>16.</td>
<td>.743</td>
<td>.333</td>
<td>.553</td>
<td>1.48 (.820)</td>
<td>.657</td>
<td>.879</td>
</tr>
<tr>
<td>3.</td>
<td>.240</td>
<td>.563</td>
<td>.318</td>
<td>.40 (.628)</td>
<td>.420</td>
<td>.801</td>
</tr>
<tr>
<td>5.</td>
<td>.420</td>
<td>.767</td>
<td>.592</td>
<td>.37 (.661)</td>
<td>.632</td>
<td>.753</td>
</tr>
<tr>
<td>6.</td>
<td>.479</td>
<td>.716</td>
<td>.535</td>
<td>.62 (.780)</td>
<td>.609</td>
<td>.761</td>
</tr>
<tr>
<td>8.</td>
<td>.296</td>
<td>.772</td>
<td>.604</td>
<td>.15 (.429)</td>
<td>.614</td>
<td>.772</td>
</tr>
<tr>
<td>11.</td>
<td>.347</td>
<td>.760</td>
<td>.578</td>
<td>.28 (.586)</td>
<td>.584</td>
<td>.766</td>
</tr>
<tr>
<td>13.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Eigenvalues** | **6.551** | **1.793** |
**% of variance explained** | **40.95** | **11.21** |
**M (DS)** | **11.74(6.329)** | **2.31(2.757)** |
**Cronbach’s $\alpha$** | **.892** | **.802** |
differences are also shown in the Externalized CB ($t(412) = -2.644, p = .008$), in which the women have scored a higher score ($M = 2.62, DS = 2.94$) compared to the men ($M = 1.92, DS = 2.44$). No significant differences were identified between age and Internalized CB ($F(3,410) = 1.043, p = .373$). Instead the Externalized CB ($F(3,410) = 3.023, p = .030$) who is older than 66 years old has a higher score ($M = 4.17, DS = 3.52$) compared with all the other age class <=25 years old ($M = 2.07, DS = 2.36$), 26-45 years old ($M = 2.20, DS = 2.85$) and 46-65 years old ($M = 2.32, DS = 2.69$).

In the internalized CB ($F(5,407) = 4.308, p = .002$) the widowers have higher scores ($M = 16.24, DS = 7.96$) compared with the unmarried ($M = 11.13, DS = 5.96$), the married ($M = 11.84, DS = 6.23$) and the separated ($M = 8.55, DS = 6.42$); in the externalized CB ($F(5,407) = 2.811, p = .025$) there are differences among the groups but these do not emerge in Bonferroni’s post hoc comparison (Table 4).

No significant differences were identified between education and Internalized CB ($F(3,410) = .632, p = .595$). In the externalized CB ($F(3,410) = 5.252, p = .001$) whoever has a lower secondary school diploma (junior high school education/diploma) ($M = 2.77, DS = 3.08$) or upper secondary school (high school diploma) ($M = 2.70, DS = 2.91$) have a higher score compared to the graduated ($M = 1.56, DS = 2.03$) (Table 4).

The Table 4, moreover, shows that both in the Internalized CB ($F(5,408)=4.97 p<.001$) and in the Externalized CB ($F(5,408)=3.37 p = .005$) the deceased has a specifically important role. In the specific, in the Internalized CB who has lost a husband/wife/cohabitant has a higher score ($M = 16.33, DS = 7.88$) compared with those who have lost a son/daughter ($M = 10.50, DS = 5.65$), a friend ($M = 9.70, DS = 6.38$) or another family member ($M = 10.65, DS = 5.57$); and in the Externalized CB who has lost a husband/wife/cohabitant has a statistically higher score ($M = 4.00, DS = 2.91$) only compared with those who have lost a son/daughter ($M = 1.70, DS = 2.42$).

In the Internalized CB ($F(5,407) = 2.412, p = .036$) who has lost a significant one during the past year has a higher score ($M = 13.57, DS = 6.53$) compared with those who have lost a significant one 11-20 years ago ($M = 9.69, DS = 6.30$); In the Externalized CB ($F(5,407)=3.647, p = .003$) who has lost a significant one during the past year has a higher score ($M = 3.67, DS = 3.77$) compared with both those who have lost a loved one 3-5 years ago ($M = 1.90, DS = 2.17$) and to those who have lost someone 11-20 years ago ($M = 2.30, DS = 2.69$).
No significant differences were identified between cause of death and Internalized CB \((F_{(2,411)} = .045, p = .956)\), or between cause of death and Externalized CB \((F_{(2,411)} = .125, p = .883)\) (Table 4).

<table>
<thead>
<tr>
<th>Gender</th>
<th>Internalized CB</th>
<th>Externalized CB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>12.45(6.31)</td>
<td>1.92(2.44)</td>
</tr>
</tbody>
</table>

Table 4 - t-Test and ANOVA for the effects of participants characteristics on Internalized CB and Externalized CB

<table>
<thead>
<tr>
<th>Gender</th>
<th>Internalized CB</th>
<th>Externalized CB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>10.80(6.25)</td>
<td>2.62(2.94)</td>
</tr>
<tr>
<td>Female</td>
<td>12.45(6.31)</td>
<td>1.92(2.44)</td>
</tr>
</tbody>
</table>

Discussion

This work offers a first study of the CBS questionnaire validation, the Italian version of the Field and Filanosky Scale (2010), and it confirms in the CFA the CBS two factors structure, Internalized CB and Externalized CB described by it. The confirmation of the factorial structure highlighted in the original study and the good analysis of the reliability (\(\alpha = .892\) for the Internalized CB and \(\alpha = .802\) for the Externalized CB) allows to state that the CBS owns good psychometric abilities and an adequate internal coherence for a clinical usage of the scale.

In our samples, we have identified some significant differences that we want to deepen with further studies. In detail, women show a higher level of Internalized and Externalized CB compared to men. It seems that the emotional activation (adaptive or maladaptive) of men is inferior to the one of the women. The gender differences similar to the ones that we
have observed are explained by Stevens, Murdock & Lovejoy (2013), who have found how men in regulating emotions, are more likely to suppress them, while women are more oriented to analyze them. Facing a mourning crying or expressing their emotion of sorrow is considered unacceptable for men, it would mean to carry out “female behaviors”, and so, they would be seen as weak in the eyes of the others (Creighton, Oliffe, Butterwick & Saewyc, 2013). Men consider inhibiting their emotions as an efficient strategy, so the anxiety level is inversely proportional to the inhibition level (Bardeen & Stevens, 2015). However, a recent study (Mankus, Boden & Thompson, 2016) regarding the emotional awareness shows that women have a higher level of differentiation of negative emotions compared with men even if with small effects, and this shows the lack of clarity about the variable gender, as it is closely related to the age and the socioeconomic status. The data showing less emotional arousal by men than women opens the possibility for a future cultural research on the expression of emotions in the Italian male population.

Another significant difference present in our sample is the relation between the respondents’ age and the Externalized CB that prevails among the subjects older than 66 years old; further studies on this data have to be done to confirm the data and investigate the meaning.

A recent analysis of the literature highlights how maladaptive features associated with Externalized CB (for example the hallucination phenomenon), even if present, are still not widely studied (Castelnovo, Cavallotti, Gambini & D’Agostino, 2015), while some of the issues raised deserve to be discussed in more detail.

It emerged, among the sample, that the role of the deceased has a remarkable importance. Whoever has lost a husband/wife obtains higher level, both in the Internalized CB that in the Externalized CB. In 2006 scientific studies (Carnelley, Wortman, Bolger & Burke, 2006) suggested that the grieving process elaboration of his/her wife/husband could have lasted several years. The survived person experimented moments of deep anguish while he/she kept memories and conversations with the deceased partner. Exploring the predictive factors for the uprising of a disorder linked with the grief trauma (Holland, Thompson, Rozalski & Lichtenenthal, 2013) has highlighted a significant relation according to which the greater the dissatisfaction in the couple relationship the greater is the regret of the survived partner.

An Externalized CB represents the illusion that the deceased person is still present today, this correlates with an anxious attachment style and with a greater difficulty from the individual to elaborate in a functional way the loss of the loved one (Ho, Chan & Field, 2013).

At last concerning the time that has passed from the loss, a positive correlation among Time and Internalized CB could have been expected, from the studies present in literature (Scholtes & Browne, 2015) and in agreement with the hypothesis, repeatedly confirmed, the Externalized CB is typical of the first grieving period and that the transformation of the Internalized bond needs time. Among our sample this data has not been confirmed, even though the Externalized CB in the first year is higher than in the time span 3-5 years and 11-20 years (according to the expectations) the Internalized CB (on average mainly present) is significantly higher than in the first year following the loss compared with the time span from 11 to 20 years. As suggested by the creators of the Scale (Field & Filanosky, 2010), and other researchers as well (Root & Exline, 2014), this data related to time should be studied with a wider and heterogeneous sample, through a longitudinal study that should clear the time trend of the Internalized and Externalized CB forms and their relations with other variables (for example: attachment, presence/absence of a complicated grief, presence of a post-traumatic growth, type of bond with the deceased).

Our work team aims to use this tool to examine how the CB might vary depending on the presence/absence of the PCBD (Persistent
Complex Bereavement Disorder) and depending on the type of attachment, this correlations might be useful to plan prevention and treatment interventions.

We believe that further in-depth analysis should be done on the “gender” variable compared to the relation that exists between age and the role of the deceased person and the connection between the deceased person’s role and the couple attachment system style.

The accidental sampling used in this study suggests that some caution should be exercised in concluding that the factor structure that emerged would also emerge in other samples. An important next step in this line of research would therefore be to replicate this factor analytic study using other volunteer samples or, better yet, some type of probability sampling approach.

Appendix 1 – CBS Questionnaire
References


Field, N. P., Packman, W., Davies, B., & Kramer, R. (2004). Continuing Bonds Interview. (Available from Field or Packman, Pacific Graduate School of Psychology, 1791 Arastradero Road, Palo Alto, CA 94304.).


