

**Evaluation, immersion, and fragmentation
in emotion narratives
from traumatized and non-traumatized women**

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Abstract

To date, research is inconclusive as to the specific characteristics of narratives of traumatic experiences. We tested whether trauma narratives of a post-traumatic stress disorder (PTSD) group, when compared to control events and to narratives of a control group, contained fewer evaluative statements, more narrative immersion, and more fragmentation. Oral narratives of distressing, angering, and happy events from 14 traumatized and 14 non-traumatized women, matched by age and education, were compared. Hypotheses were confirmed for narrative immersion in trauma narratives, specifically narrative length and dramatic speech. Low frequencies of evaluations and high degree of fragmentation, in contrast, were not specific for trauma narrators, but for distress narratives irrespective of PTSD presence.

Keywords: Emotion, Narrative, Trauma, Fragmentation, Evaluation

Emotion narratives by women with and without PTSD

A deficiency in the encoding of experiences has been theorized to be a central element of psychic trauma, resulting in a lack of event integration and meta-representation (Brewin, 2001). This is thought to be effected by the overwhelming emotional intensity of the traumatic experience and to result in difficulties in intentional recall and in victims' ability 'to tell a story' (van der Kolk & Fisler, 1995). Stories are a product and means of interpreting experience and a means of communicating them to others (Baumeister & Newman, 1994). Cognitive and clinical theories assume that trauma causes a dysfunction at varying levels of symbolizing resulting in deficiencies in putting the experience into words and a fragmentation of narrating it. Narratives integrate cognition and affect, establish causal and temporal order, and integrate the experience with other events. This is central for communicating. As such, it is crucial in most psychotherapeutic approaches to co-construct a narrative of experiences central to one's identity.

A psycho-linguistic approach should help to specify some elements of this abstract process and its odds. Successful autobiographical narratives of emotional experience include an explication of thoughts and feelings (Bucci, 1997), transport both narrator and listeners into the past event (Gerrig, 2004), and allow a critical distancing from it. To test the general thesis of a deficiency of symbolizing traumatic experiences, we focussed on three linguistic aspects that reflect the structure of trauma narratives: We expected an overall reduction in evaluation, i.e., putting subjective reactions into words, an immersion in the past experience, i.e., a lack of distancing, and fragmentation, i.e., impairments in constructing fluent, correctly structured sentences. We briefly review studies of these three aspects in trauma narratives.

Evaluation

Narrative researchers Labov and Waletzky (1967) defined evaluations as comprising all linguistic expressions of a subjective point of view onto the narrated event. An essential form is the labelling of internal states.

The first systematic study of trauma narratives compared transcripts of the first and last sessions of narrative exposure therapy of 14 women with a history of sexual assault (Foa, Molnar, & Cashman, 1995). Emotion and cognitive words increased in therapy, but this did not correlate with symptom reduction. Several similar studies replicated these findings (e.g., Van Minnen, Wessel, Dijkstra, & Roelofs, 2002), and some observed a relation to decreased PTSD-symptoms (Margola, Facchin, Molgora, & Revenson, 2010). These findings thus suggest an increase in the use of evaluations in trauma narratives in therapy, while the association of evaluations with degree of psychopathology and with treatment success remains unclear.

However, these and similar studies lack both control narratives of other negative life events and a non-traumatized control group. Only four studies compared both a trauma with a control group, and trauma with control narratives, studying adult (Jelinek, Stockbauer, Randjbar, Kellner, Ehring, & Moritz, 2010) and adolescent assault- and accident-victims (Salmond, Meiser-Stedman, Glucksman, Thompson, Dalgleish, & Smith, 2011), and undergraduates with and without PTSD (Gray & Lombardo, 2001; Rubin, 2011). These studies compared trauma narratives to an important and a positive memory (Rubin, 2011), to an unpleasant (Salmond et al., 2011), and additionally to a pleasant event (Gray & Lombardo, 2001); Jelinek and colleagues (2010) compared within trauma narratives the worst moment to the remaining narrative. Cognitive words and emotion words were lowest in distress narratives across groups (Rubin, 2011), as were positive but not negative emotion words (Salmond et al., 2011). Also, cognitive words were reduced specifically in the PTSD group (Jelinek et al., 2010). To summarize, evidence for a reduced degree of evaluation in trauma narratives is mixed at best.

Immersion

Intrusive states in post-traumatic stress are characterized by intense, overwhelming reliving of the traumatic event, without the experiential anchoring in the present that is part of normal remembering. Laub and Auerhahn (1993) contrasted accordingly "overpowering narratives" to "witnessed narratives", which include both the perspectives of past protagonist and of present narrator. The exclusive focus on the protagonist's perspective in overpowering

narratives renders an immersion in the past. Linguistically, an exclusive focus on the protagonist is effected by lengthy narrating, a dominance of perceptual over cognitive expressions, and by a preponderance of a past rather than a present temporal perspective. Immersion in the past may be additionally increased by a dramatic narrative style (Chafe, 1994). This includes the historic present tense and the shifting of the reference of deictic temporal and spatial expressions from the *here* and *now* of the narrator to the *there* and *then* of the protagonist, e.g., by using the word *now* or *here on my side* to speak about the past. All of these linguistic devices induce the past protagonist's perspective and the ensuing experience of immersion in the past story world in listeners and narrator alike.

Narratives of traumatic events were found to be longer than those of positive or neutral ones (Beaudreau, 2007; Gray & Lombardo, 2001; Pennebaker, Kiecolt-Glaser, & Glaser, 1988). Flash-back sections of trauma narratives included more perceptual words than other sections (Hellowell & Brewin, 2004), as did trauma narratives compared to other narratives (Jelinek et al., 2010; cf. Beaudreau, 2007; Rulkoetter, Bullig, Driessen, Beblo, Mensebach, & Wingenfeld, 2008; cf. a non-significant trend, Zoellner, Alvarez-Conrad, & Foa, 2002), and also compared to a control group (Rubin, 2011).

Findings regarding dramatic narration are sparse and often methodologically tainted. While Young (2000) observed a correlation between the use of historical present tense and hyperarousal, other studies used heterogeneous indicators of temporal orientation (Mundorf & Paivio, 2011) independent of whether they regarded the past (historical present tense) or the present. Present tense was most frequent in flashback narratives (Hellowell & Bewin, 2004) and in trauma narratives compared to other narratives and a control group (Jelinek et al., 2010). Thus temporal reference was often not clearly defined, and the shifting of the reference point of deictives has never been tested before in this field. Taken together, there is some, but sparse evidence for greater immersion in trauma narratives.

Fragmentation

Fragmentation has been interpreted in different ways. The use of reading ease, a simple measure of complexity, as an indicator of fragmentation provided no conclusive evidence for specific effects of trauma (Amir, Stafford, Freshman, & Foa, 1998; Gray & Lombardo, 2001; Rubin, 2011; Zoellner et al., 2002). A highly heterogeneous combination of content and formal indicators, e.g., expressions of understanding and dysfluencies, did predict symptoms (Halligan, Michael, Clark, & Ehlers, 2003; Jones, Harvey, & Brewin, 2007). However, a study that used both control narratives and a control group could not establish these indicators as a unique characteristic of trauma narratives (Salmond et al., 2011).

Following O'Kearny and Perrott (2006), we press for the use of clearly defined criteria of fragmentation. One possibility are measures of narrative organization, such as the completeness of narrative structure (O'Kearny, Hunt, & Wallace, 2011; Rubin, 2011) and frequency of connectives (O'Kearny, Hunt, & Wallace, 2011); neither of which was significantly missing in trauma narratives nor predicted symptoms. Another approach is a complex indicator including semantic and syntactic signs of incoherence, e.g., contradiction or incomprehensibility, which did not change in the course of treatment, but predicted symptoms (Mundorf & Paivio, 2011). Finally, aspects of speech dysfluency have been interpreted as signs of fragmentation, e.g., unfinished sentences, repetitions, and speech fillers (Foa, Molnar, & Cashman, 1995). These did not decrease with therapy (Foa, Molnar, & Cashman, 1995; van Minnen et al., 2002), but were predictive of symptoms in some studies (Foa, Molnar, & Cashman, 1995; Jones, Harvey, & Brewin, 2007). In one well-controlled study, trauma narratives contained more unfinished thoughts, but no more repetitions (Jelinek et al., 2010).

To summarize, dysfluency has been a common and the most practical approach towards measuring fragmentation so far. We decided on this indicator, as it is a straightforward, homogeneous, and formal measure. It is closely attuned to the idea of inability to narrate (unfinished sentences). Repetitions and pauses (speech fillers) indicate difficulties in online speech planning, which are a general language phenomenon, but increased use has been associated with arousal of anxiety (e.g., Krause & Pilisuk, 1961).

The Present Study

The field is plagued by the use of non-clinical samples, heterogeneous methodologies, and a lack of control groups and control narratives. As suggested by O’Kearny and Perrott (2006), there is still very mixed support for trauma narratives containing fewer evaluations, being overly immersed, and more fragmented. Therefore, the present study aimed to systematically test three hypotheses: trauma narratives contain (1) less evaluations, (2) more immersion, and (3) more fragmentation. These three are essential elements for constructing a narrative. Evaluation describes the labelling of subjective perspectives, immersion results from the transportation of narrator and listener to the past through the exclusion of distanced views onto the past, and fragmentation regards a very basic procedural level of narrating.

We selected multiple measures on the basis of indicators used to date, preferring formal indicators that allow objectivity. In addition, formal linguistic devices are used unconsciously and therefore reflect the subjective experience of the narrator in a less filtered way than more content-based categories do. Both a control group and control narratives were used. Each expected effect was tested a) as a main effect of group, b) as an interaction of group and event driven by the trauma narrative in the traumatized group, and c) as a main effect of event.

Method

Participants

Fourteen traumatized and 14 non-traumatized women matched by age (+/- one year) and level of education participated in 1.5- to 2-hour sessions. Two participants in each group had eight years of schooling, seven had ten years, and five at least 13 years. Participants were between 18 and 47 years old (trauma group, $M = 32.00$ years, $SD = 2.64$; control group, $M = 31.36$, $SD = 2.82$). All participants were fluent in German. Traumatized participants were recruited through help-lines and clinics on the basis of a current clinical diagnosis of PTSD, excluding co-morbid drug addiction and current psychosis. The trauma had to include a singular shocking event (Criterion A1, *Diagnostic and Statistical Manual of Mental Disorders, 4th ed.; DSM-IV*; American Psychiatric Association, 1994) with intense fear, helplessness, or horror (Criterion A2, DSM-IV). Referring counsellors judged traumatized participants to be emotionally stable enough to withstand the interview. Participants received a compensation of € 10. The control group was recruited through word of mouth. All control participants scored below clinical cut-off on measures of PTSD.

Procedure

The first two authors interviewed half of each group in a quiet room. Participants were asked to narrate their most distressing, most angering, and happiest event:

“Please tell me the most distressing/angering/happy event that happened to you in the past 15 years, but after age 16. Please tell me when it happened, and how things proceeded in as much detail as possible. Please tell me how you felt back then and how you feel now about this event. You can take as much time as you wish and need.”

The order of emotions was invariant so as to always finish with the least stressful event. To create a developmentally homogeneous set of memories, we required a minimum age of 16 at the time of the event. Narratives were uninterrupted and audio-recorded. In the case of only very general, descriptive answers, we asked twice to narrate a specific event or to narrate more extensively. Subsequently, participants completed measures of well-being and PTSD.

Material

Emotion narratives. Narratives were transcribed verbatim and divided into clauses (main or subordinate) by a research assistant who had achieved an inter-rater agreement of 96% based on 20 narratives from an earlier study (Habermas & Berger, 2011). Narratives were coded for linguistic indicators of evaluation and immersion with established manuals (Habermas, Ott, Schubert, Schneider, & Pate, 2008; Habermas & Berger, 2011), and fragmentation based on a manual developed by the first two authors.

Each clause was coded for the presence of each code. Inter-rater agreement was based on independent coding of nine narratives. Once acceptable agreement was reached, one coder coded the remaining narratives. To control whether the coder remained true to the manual, the

second coder coded nine narratives unbeknownst to the main coder (control kappa). Relative frequencies were used for hypothesis testing. Additionally, narratives were analyzed with the well-established and widely applied computer-based Linguistic Inquiry and Word Count (LIWC; Pennebaker, Booth, & Francis, 2007) for reasons of comparability across studies.

Evaluation. We coded three indicators of evaluation: Global evaluations (initial- κ = .86, control- κ = .83), specific emotions (initial- κ = .86, control- κ = .83), and mental expressions (initial- κ = .93, control- κ = .90). Specific emotions included all emotion labels and clearly identifiable emotions expressed by movement or action (e.g., “My heart leaped.”). Mental expressions included cognitive, perceptual, and volitional terms. We selected LIWC-variables to match the codes: Cognitive processes (sum of insight, causation, senses) to match mental expressions, and affect to match specific emotions.

Immersion. We coded four indicators of immersion: Difference between perceptual and cognitive mental expressions, difference between evaluations from past and other temporal perspectives (initial- κ = .91, control- κ = .86), dramatic speech, and length of narrative. We subtracted cognitive from perceptual expressions, dividing this difference by the sum of both, and multiplied it by 100, resulting in an indicator that varied between -100 and 100. Difference between past and other (present, future, general) temporal perspectives, irrespective of grammatical tempus, was constructed in an analogous fashion. Dramatic speech was defined as the sum of relative frequencies of historical present tense in the past (initial- κ = .82, control- κ = .82; e.g., “...the car *stops* and *honks*.”), and of shifts in the point of reference or origin of temporal and spatial deictic expressions from the narrator to the protagonist (initial- κ = .84, control- κ = .89). Length was measured by number of clauses. We used the following LIWC-variables as approximately parallel indicators of immersion: difference between past and present or future tense, difference between perceptual and insight/ causation terms (both constructed as described above), and number of words for length. LIWC does not offer an indicator of dramatic speech.

Fragmentation. We coded three dysfluency indicators of fragmentation: unfinished utterances (initial- κ = .77, control- κ = .76; e.g., “...and he *c’-*.”), repetitions (unless used for rhetoric purposes; initial- κ = .86, control- κ = .93; e.g., “She *came came* in.”), and filled as well as unfilled pauses (initial- κ = .93, control- κ = .96; e.g., “*uhm*”). No variables from LIWC reflect fragmentation.

Questionnaires. Participants completed the Posttraumatic Diagnostic Scale (PDS; Ehlers, Steil, Winter, & Foa, 1996) and reported the age of each event narrated. Psychological well-being was assessed by the short form of the Sense of Coherence Scale (SOC; Schumacher, Thomas, & Brähler, 2000) and by the Beck Depression Inventory (BDI-II; Beck, 1993).

Results

Descriptives

Symptoms. Groups differed significantly on all three scales (Table 1), indicating an absence of clinically relevant PTSD-symptoms and depression in the control group, and moderately strong trauma symptoms, as well as some degree of depression in the trauma group. Correspondingly, sense of coherence was higher in the control group.

Events narrated. The trauma group and controls respectively narrated distressing events regarding sexual (4/0) and physical assaults (6/2), loss or severe illness of close other (4/4), birth of child (0/3), family conflict (0/4), and failing at work (0/1). All but the work-related narrative were rated on the PDS to be accompanied by intense fear or horror. Most anger events involved interpersonal conflict in both groups. Happy events were acquisition of object (7/3), falling in love (4/5), vacation (2/4), and birth of child (1/2). Distress memories had a mean age of 78.64 months ($SD = 47.74$) in the control and 66.57 months ($SD = 52.23$) in the trauma group. Anger memories were most recent (traumatized, $M = 39.29$, $SD = 44.83$; controls, $M = 47.43$, $SD = 51.68$), and happy memories in between (traumatized, $M = 58.93$, $SD = 57.00$; controls, $M = 45.54$, $SD = 41.19$).

Testing of Hypotheses

Hypotheses were tested with multivariate analyses of variance (MANOVAs) for repeated

measures with group as a within-factor reflecting the matched-pairs design, and emotion quality of narrated event as a second, genuine within-groups factor (2 x 3 design). Evaluation and immersion were each tested with two separate MANOVAs, one for the narrative codes, the other for the LIWC-variables, while fragmentation was tested with only one MANOVA for the narrative codes. The level of statistical significance was set at $\alpha = .05$ and tested one-sided. For significant main effects, results of univariate analyses of variance (ANOVAs) are reported in brackets. We refrained from step-down analysis due to the small sample size. Significant interactions were followed up by one-factorial MANOVAs only for the distress events to test sub-hypotheses (b) regarding the difference between traumatic and distressing events. Although the number of analyses is high relative to the cell size, this line of analysis reflects best our theoretical assumptions, and (M)ANOVA is a robust method. Correlations between narrative variables and questionnaire data were calculated for exploratory purposes.

Evaluation. Contrary to expectations, evaluation did not differ by group, $F(3, 11) = .44, p = .364, \eta^2 = .11$. There was a large difference between emotions, $F(6, 50) = 4.16, p = .001, \eta^2 = .33$ (specific emotions, $F(2, 26) = 8.15, MSE = 48.38, p = .001, \eta^2 = .39$; global evaluations, $F(2, 26) = 5.90, MSE = 30.48, p = .004, \eta^2 = .31$; mental expressions, $F(2, 26) = .10, MSE = 25.85, p = .904, \eta^2 = .01$), and the interaction was relatively large, but only of borderline significance, $F(6, 50) = 2.24, p = .055, \eta^2 = .21$. Global evaluations were most frequent in happiness narratives, whereas specific emotions were most frequent in anger and least frequent in distress narratives (Table 2).

Corresponding LIWC-scores did not differ by group either, $F(2, 12) = 1.10, p = .182, \eta^2 = .16$, but did differ by emotion quality, $F(4, 52) = 3.06, p = .012, \eta^2 = .19$ (affect, $F(2, 26) = 7.44, MSE = 1.36, p = .002, \eta^2 = .36$; cognitive processes, $F(2, 26) = .21, MSE = 2.13, n. s., \eta^2 = .02$), with a non-significant interaction, $F(4, 52) = .99, p = .422, \eta^2 = .07$. Anger narratives contained the most, distress narratives the least affect terms.

Thus, groups did not differ in the use of evaluations (H1a, H1b). But evaluation in narratives did differ by emotion quality as expected (H1c), i.e., distress narratives contained the fewest evaluations, namely specific emotions and affect words.

Immersion. As expected, narratives of traumatized women were more immersive than those of controls (Table 3), $F(4, 10) = 3.76, p = .021, \eta^2 = .60$ (length, $F(1, 13) = .25, MSE = 5901.91, p = .020, \eta^2 = .29$; past vs. other time perspectives, $F(1, 13) = .25, MSE = 2356.58, n. s., \eta^2 = .02$; perceptual vs. cognitive expressions, $F(1, 13) = .167, MSE = 4538.16, n. s., \eta^2 = .12$; dramatic speech, $F(1, 13) = .92, MSE = 19.98, n. s., \eta^2 = .07$). In addition, there was a large effect of emotion quality, $F(8, 48) = 4.02, p = .001, \eta^2 = .40$ (length, $F(2, 26) = 13.50, MSE = 8545.58, p = .001, \eta^2 = .51$; dramatic speech, $F(2, 26) = 4.15, MSE = 5.38, p = .014, \eta^2 = .24$; past vs. other time perspectives, $F(2, 26) = .45, MSE = 966.36, n. s., \eta^2 = .03$; perceptual vs. cognitive expressions, $F(2, 26) = .65, MSE = 2861.24, n. s., \eta^2 = .05$), and a significant Group x Emotion quality interaction, $F(8, 48) = 3.81, p = .002, \eta^2 = .39$ (length, $F(2, 26) = 11.97, MSE = 4099.95, p = .001, \eta^2 = .48$; dramatic speech, $F(2, 26) = 4.02, MSE = 6.48, p = .030, \eta^2 = .24$; past vs. other time perspectives, $F(2, 26) = .35, MSE = 1215.71, n. s., \eta^2 = .03$; perceptual vs. cognitive expressions, $F(2, 26) = 1.19, MSE = 3978.77, n. s., \eta^2 = .08$). The multivariate interaction effect was followed up by a one-factorial MANOVA for group comparison of the distress narratives only, which again proved significant, $F(4, 10) = 4.582, p = .012, \eta^2 = .65$.

Thus the actual trauma narratives, i.e., the distress narratives of the traumatized group, were much more immersive when compared to distress narratives of the control group. This was reflected by their length and amount of dramatic speech. Past orientation and perceptual vs. cognitive mental expressions showed the same pattern (Table 3, H2b). In addition, narratives of the trauma group were more immersive across emotions (H2a), and distress narratives were more immersive compared to anger and happiness narratives across groups (H2c).

The parallel MANOVA for LIWC-measures again yielded significant results for both main effects of group, $F(3, 11) = 2.89, p = .042, \eta^2 = .44$ (length, $F(1, 13) = 5.89, MSE = 346018.19, p = .015, \eta^2 = .31$; past vs. other tenses, $F(1, 13) = .09, MSE = 453.54, n. s., \eta^2 = .01$; perceptual vs. cognitive terms, $F(1, 13) = .16, MSE = 21.29, n. s., \eta^2 = .01$), and emotion quality, $F(6,50) = 3.87,$

$p = .002$, $\eta^2 = .32$ (length, $F(2, 26) = 13.73$, $MSE = 460803.03$, $p = .001$, $\eta^2 = .51$; past vs. other tenses, $F(2, 26) = 1.20$, $MSE = 440.65$, n. s., $\eta^2 = .09$; perceptual vs. cognitive terms, $F(2, 26) = 5.10$, $MSE = 19.54$, n. s., $\eta^2 = .02$), as well as for the interaction term, $F(6, 50) = 3.25$, $p = .009$, $\eta^2 = .28$ (length, $F(2, 26) = 11.69$, $MSE = 218990.03$, $p = .001$, $\eta^2 = .47$; past vs. other tenses, $F(2, 26) = .31$, $MSE = 372.14$, n. s., $\eta^2 = .02$; perceptual vs. cognitive terms, $F(2, 26) = 3.18$, $MSE = 23.68$, n. s., $\eta^2 = .20$). As expected, a one-factorial (group) MANOVA following up the multivariate interaction showed more immersion in the distress narratives by traumatized women compared to controls, $F(3, 11) = 4.918$, $p = .011$, $\eta^2 = .57$. Again distress narratives of traumatized women were longest compared both to controls and to other emotion narratives by the trauma group (Table 3).

In summary, as expected (H2a) narratives of traumatized women were more immersive than those of controls with both groups of indicators. As expected (H2b), this group difference was driven mainly by differences in the distress narratives. Happiness narratives showed the least immersion, but distress and anger narratives did not differ, contrary to expectations (H2c).

Fragmentation. A MANOVA for fragmentation showed no effect of group, $F(3, 11) = 1.30$, n. s., $\eta^2 = .26$, but significant effects of emotion, $F(6, 50) = 4.14$, $p = .001$, $\eta^2 = .33$ (unfinished utterances, $F(2, 26) = 14.00$, $MSE = 7.16$, $p = .001$, $\eta^2 = .52$; repetitions, $F(2, 26) = .46$, $MSE = 5.16$, n. s., $\eta^2 = .03$; pauses, $F(2, 26) = 2.36$, $MSE = 58.95$, n. s., $\eta^2 = .15$), and an interaction, $F(6, 50) = 2.42$, $p = .039$, $\eta^2 = .23$ (unfinished utterances, $F(2, 26) = 1.08$, $MSE = 13.05$, n. s., $\eta^2 = .08$; repetitions, $F(2, 26) = 2.79$, $MSE = 5.20$, n. s., $\eta^2 = .18$; pauses, $F(2, 26) = 1.93$, $MSE = 58.95$, n. s., $\eta^2 = .13$). Comparing the distress narratives in a one-factorial MANOVA, no significant difference was observed between groups, $F(3, 11) = 1.053$, $p = .024$, $\eta^2 = .22$. Unfinished utterances were most frequent in distress narratives and least frequent in narratives of happy events (Table 4). Thus neither the hypothesis of a general group difference (H3a) nor of a group difference specifically of distress events only (H3b) was supported. However, as expected (H3c), across groups, distressing events were narrated in a more fragmented fashion than narratives of anger or happiness.

Exploration of relation between narrative measures and psychological adjustment

We explored correlations of narrative measures for the distressing events only, across both groups, with measures of psychological adjustment and posttraumatic stress ($N = 28$, Table 5). Among the codes for evaluation, mental expressions correlated with depressive symptoms. Affect, as measured by LIWC, correlated as expected with lower posttraumatic stress, specifically avoidance. Regarding immersion, length and dramatic speech correlated with post-traumatic stress, specifically intrusion. Contrary to expectations, among the fragmentation indicators, repetitions correlated positively with sense of coherence. As a general pattern, narrative measures correlated with all three subscales of the PDS. Correlations between narrative immersion and PTSD-symptoms are in accordance with the results of group comparison.

Discussion

Summary

The study used a multi-method approach with both coding and automatic word counts. We introduced new measures of narrative immersion to the field of trauma research taken from a study on narrative distancing (Habermas & Berger, 2011). Also, the study used both a control group and control conditions, by comparing trauma narratives of women with PTSD to narratives of other emotional events and to a control group, adding to a still small number of studies with both of these control conditions.

The main finding was that more immersion distinguished trauma narratives both from narratives of other emotions, as well as from distress narratives by non-traumatized women. Particularly length and dramatic speech contributed to this finding. The other two hypothesized characteristics of trauma narratives, a lack of evaluations and greater fragmentation, were not specific for the trauma group, but for distress narratives across groups. These findings were consistent with either method used. They confirm and expand findings of more narrative immersion in trauma narratives. The correlation of immersion in distress narratives with the

intrusion scale of the PDS supported the main finding. Our results reinforce doubts regarding the assumption of a lack of evaluation and of increased fragmentation in trauma narratives.

Limitations

The sample size was small, and the sample may have been relatively selective. The sample was homogenous with regard to gender and type of trauma, namely physical or sexual abuse. The focus on a specific class of traumatic experiences, however, is typical also for other studies and helps prevent premature conclusions across event types. For example, fragmentation might be specific only to complex trauma. The study may have oversampled traumatized women with a good ability to narrate their experience, given that most of them were in psychotherapy and voluntarily chose to participate in an interview-based study. We cannot exclude the possibility that an initial fragmentation of trauma narratives was reduced by psychotherapies. Though our results clearly point against a PTSD-specificity of fragmentation, this could only be ruled out by a pre-post design. Furthermore, the control group did report highly distressing, though not traumatizing events. This may have limited differences between groups. As a consequence, however, the group differences we did find can be considered as relatively robust.

Implications

Future studies should also use other control narratives, such as fear and sadness narratives about unrelated, non-traumatic events to further delineate possible unique features of trauma narratives. A longitudinal design would allow both controlling for and attempting to predict the effects of psychotherapy.

To date, the fragmentation hypothesis has found only little empirical support (cf. O’Kearney & Perrott, 2006). Grünberg and Markert (2012) have suggested that there is not a general lack of symbolization in traumatic remembering, but rather a specific mode of symbolizing. Intrusive remembering and reliving of the traumatic scene is a kind of presentational symbolization including bodily sensations that accompany intense emotional experience. This experiential fusion of the narrating individual with the past protagonist is signalled by and enacted through narrative immersion.

What we termed fragmentation is not a specific feature of narratives by individuals suffering from PTSD, but of distress narratives regardless of symptomatology. Why then, has the fragmentation hypothesis such long lasting popularity, despite little empirical evidence? We suggest that narrative immersion along with a diminished use of evaluations tends to emotionally flood listeners and may evoke feelings of disorientation and fragmentation (Laub & Auerhahn, 1993). Although intrusion and avoidance symptoms tend to oscillate in PTSD, prompts to narrate traumatic events invite reliving. The immersive quality of trauma narratives communicates the sensory and scenic qualities of the traumatic experience, reflecting the narrators wish to share it with others. Additionally, at least for the group of singularly traumatized women studied here, the immersive quality of trauma narratives was more closely connected to PTSD symptoms than fragmentation.

This perspective stresses that the therapeutic challenge lies in a distancing from the event, establishing a differentiation between past and present in experiencing and narrating, confirming current practice. Making immersive linguistic devices explicit for clinicians may aid them in keeping a closer track of problematic elements in their clients’ narratives and experience that call for interventions. Our observation suggests that focus on the process of narrating, not only the content can help to decrease emotional flooding in treatment. Strikingly, it is easier to convey one’s story when the current impact of the past event is low, whereas the inverse might contribute to feelings of isolation and chronicity of PTSD. Future research should aim at a more comprehensive understanding of the function of specific narrative means for communicative attempts to convey to listeners the immersive character of the traumatic event’s impact.

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Table 1
Group differences in measures of well-being

<i>Measure</i>	Trauma			Control			<i>t</i> (13)
	<i>M</i>	<i>SD</i>	95% CI	<i>M</i>	<i>SD</i>	95% CI	
<i>PDS</i>							
Total	27.77**	11.35	[22.40, 33.14]	6.07	6.90	[2.81, 9.33]	5.95
Intrusion	7.07**	4.60	[4.89, 9.25]	1.29	1.33	[0.70, 1.91]	4.61
Avoid	11.55**	4.90	[9.23, 13.87]	2.71	3.15	[1.22, 4.20]	5.91
Arousal	9.14**	3.94	[7.28, 11.00]	2.07	4.46	[-0.04, 4.18]	3.72
<i>BDI-II</i>	22.00*	10.27	[17.14, 26.86]	8.43	7.21	[5.02, 11.84]	3.62
<i>SOC</i>	51.28*	5.28	[48.78, 53.78]	58.43	5.32	[55.92, 60.94]	-3.05

Note. CI = confidence interval [lower limit, upper limit]; T-test for dependent samples: * $p < .05$; ** $p < .01$.

Table 2

Means for coded (% of clauses) and LIWC-based indicators (% of words) of evaluation

<i>Measure</i>	<i>M (SD)</i>					
	Trauma			Control		
	Distress	Anger	Happy	Distress	Anger	Happy
<i>Codes</i>						
Global Evaluations	5.66 (4.93)	5.63 (3.29)	10.87 (5.58)	8.55 (5.57)	4.24 (3.59)	9.10 (5.45)
Specific Emotions	6.84 (4.05)	17.09 (10.41)	9.31 (5.61)	9.89 (4.93)	14.51 (7.06)	13.16 (8.64)
Mental expressions	12.07 (3.87)	11.49 (6.12)	9.81 (6.73)	11.96 (5.67)	11.61 (4.30)	14.45 (7.20)
<i>LIWC</i>						
Affect	2.73 (.70)	4.17 (1.84)	3.73 (1.10)	3.37 (.78)	4.16 (1.29)	4.29 (1.16)
Cognitive processes	4.89 (1.05)	4.54 (1.50)	5.34 (1.84)	5.18 (1.24)	5.07 (1.82)	4.69 (1.49)

Table 3

Means for coded (% of clauses) and LIWC-based (% of words) indicators of immersion

<i>Measure</i>	<i>M (SD)</i>					
	Trauma			Control		
	Distress	Anger	Happy	Distress	Anger	Happy
<i>Codes</i>						
Number of Clauses	261.14 (211.11)	95.64 (76.80)	63.50 (39.19)	127.07 (119.97)	91.79 (62.52)	85.71 (81.38)
Past vs. other time perspectives	53.84 (23.48)	44.85 (53.16)	42.28 (37.58)	40.56 (25.08)	47.14 (40.67)	37.50 (37.13)
Perceptual vs. cognitive expressions	-16.22 (48.36)	-29.96 (64.75)	11.49 (73.39)	-30.14 (53.36)	-26.04 (63.72)	-35.76 (57.73)
Dramatic speech	3.93 (4.18)	2.89 (5.21)	0.50 (.97)	0.97 (1.04)	2.16 (3.46)	1.39 (2.36)
<i>LIWC</i>						
Number of Words	1941.43 (1586.49)	722.21 (581.97)	495.71 (335.35)	899.36 (690.27)	656.86 (401.90)	530.43 (274.58)
Past vs. other tenses	-3.27 (12.24)	-9.24 (22.17)	2.11 (30.71)	-1.72 (22.54)	-8.93 (13.21)	-3.87 (23.40)
Perceptual vs. cognitive terms	-95.51 (6.23)	-97.12 (4.55)	-98.43 (3.25)	-98.76 (3.14)	-98.25 (2.64)	-95.25 (6.20)

Table 4

Means for coded (% of clauses) indicators of fragmentation

<i>Measure</i>	<i>M (SD)</i>					
	Trauma			Control		
	Distress	Anger	Happy	Distress	Anger	Happy
Unfinished utterances	10.76 (4.00)	10.22 (6.25)	8.4 (4.78)	11.72 (5.87)	9.34 (4.00)	6.57 (4.02)
Repetitions	3.13 (2.46)	4.86 (3.94)	3.11 (2.40)	4.73 (3.00)	3.9 (2.60)	4.56 (3.95)
Pauses	20.66 (9.03)	14.17 (10.08)	13.28 (8.28)	23 (15.54)	21.05 (9.65)	23.67 (15.77)

Table 5

Pearson correlations of coded (% of clauses) and LIWC-based (% of words) indicators of evaluation, immersion, and fragmentation in distress narratives with psychological adjustment

<i>Measure</i>	PDS					
	Total	Intrusion	Avoid	Arousal	BDI	SOC
<i>Evaluation</i>						
<i>Codes</i>						
1. Global Evaluations	.03	-.13	.10	.07	.12	.04
2. Specific Emotions	-.04	.05	-.14	.01	.06	-.03
3. Mental expressions	.30	.22	.28	.32	.44*	-.14
<i>LIWC</i>						
4. Affect	-.41*	-.35	-.39*	-.36	-.26	.19
5. Cognitive processes	-.16	-.14	-.09	-.18	.07	.04
<i>Immersion</i>						
<i>Codes</i>						
6. Number of Clauses	.38*	.46*	.27	.34	.18	-.11
7. Past vs. other time perspectives	.13	.17	.02	.18	-.23	-.09
8. Perceptual vs. cognitive mental expressions	.22	.23	.13	.25	.14	-.14
9. Dramatic speech	.40*	.34	.37	.36	.25	-.25
<i>LIWC</i>						
10. Number of Words	.37	.44*	.25	.34	.19	-.14
11. Past vs. other tenses	-.08	-.01	-.11	-.09	-.27	.10
12. Perceptual vs. cognitive terms	.19	.21	.28	.02	.10	-.15
<i>Fragmentation</i>						
13. Unfinished utterances	-.13	-.18	-.14	-.04	.08	-.17
14. Repetitions	-.31	-.21	-.33	-.29	-.31	.39*
15. Pauses	-.06	-.17	-.08	.05	.16	-.15

Note. Pearson correlations at * $p < .05$, ** $p < .01$, two-tailed.