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Do Alexithymia, Dissociation, and CSA Explain the Controversial Topic of Memory Recovery?

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1. Introduction

In the foregoing chapter gender differences in symptomatology among victims of CSA were investigated. As alexithymia and dissociation are considered to be different manifestations of the same psychological state aiming at emotional disengagement from serious trauma first the affinity between alexithymia and dissociation will be investigated and then it will be explored whether specific abuse characteristics are related to alexithymia and dissociation. Because nowadays in the DSM the Janetian construct of dissociative amnesia instead of the Freudian construct of repression is seen as the mechanism behind recovered memories it will be tested whether dissociative amnesia is indeed related to having experienced episodes of inability to recall the traumatic event and its duration. In concreto the following research questions were posed:

- How are alexithymia and dissociation related to each other?
- Are alexithymia and dissociation affected by abuse characteristics?
- More in particular: Is the severity of abuse characteristics with or without real body contact of crucial importance for developing abuse related symptomatology?
- Is Memory Recovery associated with Dissociative Amnesia?

1.1 Dissociation and its affinity with alexithymia

Following Freud and Breuer (1893/1924) and Janet (1911), intense anxiety, one of the most painful emotions in human existence, is regarded as the impulse leading to the disruption of the normal controlling functions of consciousness. As early as 1911, Janet gave a detailed description of this disruptive power of intense emotions (p. 532):

“With respect to this subject I have demonstrated the dissolving power of emotions on voluntary decisions, feeling states, and conscious sensations, and I consider the dissociation of memories to be part of the larger group where dissociation of coherent structures is induced by emotions” (translation from French).

However although Janet considered high emotionality to be the trigger for dissociation, traumatized people are usually characterized by flatness of affect instead of high emotionality. How then can the paradox between on the one hand intense affect and on the other hand affective blocking be explained? Krystal (1988) gives the following answer (p. 151):

"The paradox in the traumatic state is that the numbing and closing off are experienced as relief from previously painful affects such as anxiety".

The affective tension is so strong that it takes the form of a blow down turned inwards, resulting in the non-feeling state that is expressed through the splitting of consciousness (dissociation), switching off feeling any emotions (alexithymia), and anaesthesia expressed through the lack of feeling any actual physical pain (Moormann et al., 2004). Such affective disruptions are very often manifested in individuals suffering from PTSD, where alexithymia and dissociation contribute to the enhancement of emotional disengagement from the traumatic event (Krystal et al., 1986; Chu & Dill, 1990; Hyer et al., 1990; Thomas et al., 1992; Zlotnick et al., 1996; Frewen et al., 2008).

Although several studies (Cloitre et al., 1997; Berenbaum, 1996; Sher & Twaite, 1999; Bermond et al., 2008) do support Krystal's (1988) view that CSA may cause alexithymia later in life, other investigations failed to come forward with empirical evidence for this notion (Paivio & McCulloch, 2004; Kooiman et al., 2004; Modestine et al., 2005). Many explanations are given for inconsistent findings (see Taylor & Bagby, 2004), such as the age of the children at the time of the abuse, the duration of the abuse, and whether or not the children developed PTSD. Frequency of the episodes seems to contribute to the form of expression of alexithymic features as well. Those victims of rape that underwent more than one episode of abuse manifested a greater degree of alexithymia compared to those that were abused only once (Zeitlin et al., 1993). Kooiman et al. (2004) suggested that less serious forms of CSA might be responsible for the lack of association between CSA and alexithymia. This idea seems to be justified by a recent study (Bermond et al., 2008) using the Bermond Vorst Alexithymia Questionnaire (BVAQ) instead of the Toronto Alexithymia Scale (TAS-20). Respondents with severe CSA did score significantly higher than matched controls on the sum-total of the BVAQ, in particular on the cognitive dimension (more precisely on the subscales reduced verbalizing and identifying). However, no significant difference was found on the affective dimension (measuring reduced fantasizing and emotionalizing).

Regarding dissociation abuse characteristics seem to play a role as well. Kisiel and Lyons, (2001) for instance revealed higher scores of dissociation for CSA children when compared to physically abused children. This seems to indicate that sexual abuse triggers dissociative tendencies stronger than physical abuse. Nevertheless, in cases where sexual abuse was combined with physical abuse the dissociative symptoms seem to be even more severe (Chu & Dill, 1990; Gold et al., 1999). Furthermore, the number of different sexual perpetrators has been positively correlated with greater scores on dissociation as well (Eliot & Briere, 1992; Zlotnick et al., 1996). In general, the prevalence of severe forms of CSA, rather than mild forms of abuse, contributes to the development and expression of consequently greater dissociation scores (Kirby et al., 1993).

Considering the findings that CSA may induce both alexithymia and dissociation and the notion that both constructs can be considered as manifestations of emotional

disengagement, the strong association between alexithymia and dissociation (Berenbaum & James 1994; Zlotnick et al., 1996; Irwin & Melbin-Helberg, 1997) is from a theoretical point of view far from astonishing and has been reported within posttraumatic experiences (Frewen et al., 2008). Other commonly documented disturbances, also related to CSA, are depression, anxiety, eating disorders and self-mutilation (Parker, Bagby & Taylor, 1991; Zlotnick et al., 1996; Lipsanen et al., 2004). One common ground between the two phenomena is a displayed inability of the patients to consciously integrate segments of neuropsychological functions such as memories and feelings (Grabe et al., 2000). Elzinga et al. (2002) reported that dissociative tendencies were related to a general 'difficulty in identifying one's own feelings' as part of a response to periods of stress. Furthermore, they suggested that already existing characteristics of alexithymia might promote pathological dissociative reactions by enhancing a dysfunctional response to stress and trauma. There seems to be a displayed dissociation between the verbal processing system and the affective processes, indicating an inability to verbalize one's own affective states, not due to an actual absence of an affective vocabulary, but rather due to a general inability to access and utilize such vocabulary in order to outline emotional states (Irwin & Melbin-Helberg, 1997). Following the same line of research Mason et al. (2005) came up with a relationship between 'difficulty identifying feelings' and two subscales of dissociation on the DES, namely 'Depersonalization' and 'Absorption'. Another study comparing clinical and non-clinical subjects also came up with a strong positive correlation between alexithymia and dissociative symptomatology (Grabe et al., 2000). However, even though alexithymia and dissociation share features (for instance in the domain of fantasy) convincing evidence has been brought forward for two distinct constructs (Lipsanen et al., 2004).

1.2 Abuse characteristics and symptom reporting

The relation between abuse characteristics and psychopathology is lacking clear-cut results. In a Meta-Analytic study by Rind et al. (1998) for instance it was examined how aspects of the CSA experience moderated self-reported reactions and effects, as well as symptoms. Although these results should be viewed cautiously, because they were for a large part based on a small number of samples, it was found that only force (coercion) and incest moderated outcomes. The largest relation occurred between force and self-reported reactions or effects, but force was unrelated to symptoms. Incest moderated both symptoms and self-reported reactions and effects. Penetration, duration, and frequency did not moderate outcomes. The near-zero correlation between penetration and outcome was consistent with the multiple regression analysis finding of the same study that contact sex did not moderate adjustment. This result provided empirical support for Finkelhor's (1979) observation that our society's view of intercourse as the most damaging form of CSA is "a well-ingrained prejudice" unsupported by research. Composite measures consisting of various combinations of moderators (e.g., incest, force, penetration) showed no association with symptoms in four of five studies that constructed such measures. According to Rind et al. (1998) this finding is in agreement with the Laumann et al. 1994 study concerning a U.S. national sample, where a failure to find an association between a composite variable (consisting of penetration, number of older partners-abusers, relatedness of partner-abuser, frequency of contacts, age when having contacts, duration of contacts) and adjustment for sexually abused respondents was reported as well.

Hence, although the literature indicates that CSA is associated with alexithymia, and dissociation later in life, the impact of abuse characteristics related to single or composite variables on symptom reporting is either absent, weak or inconclusive. The data even suggest that the severity of abuse characteristics with or without real body contact is not of crucial importance for developing abuse related symptomatology.

1.3 Memory recovery and dissociative amnesia

Originally, the psychodynamic construct of repression was seen as the mechanism behind (psychogenic) amnesia for highly threatening aspects of traumatic material and its spontaneous recovery. However the impact of Janetian thinking (1889, 1911, 1928) had become so great over the last decades of the 20th century that the term psychogenic amnesia (based on the Freudian construct of repression) from the DSM-III-R (American Psychological Association, 1987) was replaced by the term dissociative amnesia (based on the Janetian construct of dissociation) in the DSM-IV (American Psychological Association, 1994). The logic behind this change of constructs was that Janet adepts argued that dissociated memories were related to actual traumatic events while repressed memories were related to inner conflicts resulting from unacceptable impulses and wishes, as conceptualized in psychoanalytic theory (Van der Kolk, 1987; Boon & Draijer, 1993). The introduction of a Janetian construct within a psychodynamic frame of PTSD (based on Freud (1939) and Horowitz (1976)) is not only highly confusing, but it implied that from then on dissociation became the explanatory mechanism behind forgetting painful traumatic material and its subsequent recall (dissociated memories). In the updated, newest DSM V proposal, available through the internet (February-8-2011) Dissociative Amnesia is defined as the inability to recall important personal information, usually of a traumatic or stressful nature, that is inconsistent with ordinary forgetting. Two primary forms of Dissociative Amnesia are distinguished: (1) Localized amnesia for a specific event or events, and (2) Dissociative Fugue: generalized amnesia for identity and life history. Fugue may be accompanied by either purposeful travel or bewildered wandering. Even though Dissociative Amnesia and Psychogenic amnesia both deal with memory deficits it should be noted that Dissociative Amnesia primarily deals with Identity Disorders, e.g. with disorders such as Dissociative Fugue, while localized amnesia in fact is what was formerly called psychogenic amnesia.

1.4 Hypotheses

Research by Vorst and Bermond (2001) on the validity and reliability of the BVAQ demonstrated that the Principal Component Analysis of subscale interrelations yields a clear-cut two-factor structure. One comprises an affective component (reduced Emotionalizing and Fantasizing) and the other a cognitive component (reduced Identifying, Verbalizing, and Analyzing emotions). By combining extreme scores on the two alexithymia components four alexithymia types can be distinguished: (1) *Type I alexithymia*, characterized by low emotionality and a poor fantasy life in combination with poorly developed cognitions accompanying the emotions; (2) *Lexithymia*, characterized by both high emotionality and an enriched fantasy-life in combination with very well-developed cognitions accompanying the emotions; (3) *Type II alexithymia*, characterized by high emotionality and a rich fantasy-life in combination with poorly developed cognitions

accompanying the emotions; and (4) *Type III alexithymia*, characterized by a low emotionality and a poor fantasy-life, but with very well-developed cognitions accompanying the emotions. Based on confirmatory validity principles only subjects with an impaired cognitive component (e.g. Type I and Type II alexithymia) are considered to be alexithymic, while subjects with an unimpaired cognitive component (Lexithymics and Type III alexithymia) are seen as non-alexithymic, even though Type III alexithymics have an impaired affective component (the lack of emotionality and fantasy makes them stress resistant – see Moormann & Pijpers, 2004). Another argument for considering an impaired cognitive alexithymia component as indicative for the label 'alexithymic' is that Vorst and Bermond (2001) reported that the sum total of the TAS-20 was comparable with the cognitive component of the BVAQ, as both alexithymia measures were found to be highly interrelated ($r = .80$). Furthermore recent research on alexithymia types (Moormann et al., 2008) indicated that persons experiencing problems with the cognitive component of alexithymia (Type I and Type II) displayed a wide array of psychological problems, whereas more healthy personality profiles can be seen in persons where the cognitions accompanying the emotions were highly articulated (Lexithymia and Type III). Considering the above it is **hypothesized** that:

1. CSA subjects with an impaired cognitive alexithymia component (Type I and Type II) will have significantly higher dissociation scores than subjects with a very well developed cognitive alexithymia component (Lexithymia and Type III). The association between the impaired cognitive alexithymia component and dissociation would also find its expression in positive correlations.
2. Furthermore within the group with an impaired cognitive component it is hypothesized that Type II alexithymia (unimpaired affective component) will have significantly higher dissociation scores than Type I alexithymia (impaired affective component), based on Janet's assertion (1911) that highly painful, intense emotions (Type II) will lead to a splitting of consciousness. The association between the unimpaired affective alexithymia component and dissociation would then find its expression in negative correlations, in particular with the subscale Emotionalizing.

The alternative hypothesis, based on Krystal's Paradox of the traumatic state (1988) implies affect intolerance or psychic numbing (Type I), as a protection device against re-experiencing the traumatic events. Then, from Krystal's emotional disengagement point of view Type I alexithymics would have significantly higher dissociation scores than Type II alexithymics. The association between the impaired affective alexithymia component and dissociation would then find its expression in positive correlations, in particular with the subscale Emotionalizing.

However if both Type I and Type II alexithymia would display high dissociation scores, and if no significant differences between the two types can be demonstrated, then both affect intolerance and affective flooding are involved in dissociation. This line of reasoning is in agreement with the perspective of PTSD where the avoidance component is represented by affect intolerance while the re-experiencing component is represented by affective flooding (startle responses). From the point of view of individual differences in personality, where coping with stressful events has become a personality trait, victims of CSA may have either affect intolerance or affective flooding as their predominant personality trait. Hence, with

the introduction of alexithymia types individual differences in emotional reactivity are assumed.

In the **explorative part** it will be investigated whether:

- a. Alexithymia types differ on abuse characteristics.
- b. Abuse characteristics are related to alexithymia and dissociation.
- c. The impact of the abuse is greater (regarding alexithymia, dissociation, and memory recovery) when it happened before ten years of age.
- d. Dissociative Amnesia is related to memory recovery and its duration.

2. Method

For this section we refer to the foregoing chapter, because, the subjects, procedure, and instruments are identical.

2.1 Statistical analyses

Conducting *One-Way Anovas with planned comparisons*, where alexithymia types act as the independent variable and dissociation as dependent variable is used for testing **Hypothesis 1 and 2**.

For the association between alexithymia and dissociation *Pearson Product-Moment Correlation Coefficients* will be applied. The same procedure will be done in the **explorative part** when the association between abuse features, alexithymia, and dissociation is investigated. Running Independent-Samples t Tests will be used to identify whether the impact of the abuse is greater (alexithymia, dissociation, and memory recovery act as dependent variables) when it happened before the age of ten (independent variable). Conducting *One-Way Anovas with post hoc comparisons*, where alexithymia types act as the independent variable and abuse characteristics as dependent variables, is used for exploring whether alexithymia types differ on abuse characteristics.

3. Results

3.1 Hypotheses

In **Hypothesis 1** it is stated that CSA subjects with an impaired cognitive alexithymia component (Type I and Type II) have significantly higher dissociation scores than subjects with a highly articulated cognitive alexithymia component (Lexithymia and Type III).

The results of the *One-way ANOVAS* with the dissociation variables as dependent variables and alexithymia types as independent variable (see Table 1) were significant (2-tailed) for 'Absorption and Imaginative Involvement' ($F(2,32) = 3.67^*$), for 'Depersonalization and Derealization' ($F(2,32)=7.75^{**}$), and for 'DES/28' ($F(2,32)= 4.62^*$). However not significant for 'Activities of Dissociated States' or 'Dissociative amnesia' ($F(2,32) = 1.34, p = .28$). *Levene's Tests* were not significant and consequently equal variances were assumed. The effect size or strength of the relationship between alexithymia types and dissociation variables, as assessed by *Partial Eta Squared ($P\eta^2$)*, was very large for 'Absorption and Imaginative

Involvement’ (0.17), ‘Depersonalization & Derealization’ (0.33), and DES/28 (0.22), and medium for ‘Activities of Dissociative States’ (0.08).

The *contrast coefficients* for Hypothesis 1 were 1, 1, and -2 for Type I, Type II, and the combined group of Type III & Lexithymia respectively. Except for ‘Activities of Dissociated States’ or amnesia ($t(32) = 1.49$; $p = .07$ (1-tailed)), indicating a trend (but it should be noted that the main Anova already was not significant), all remaining results of the contrast tests clearly confirmed hypothesis 1: ($t(32) = 2.17$, $p = .02$ (1-tailed)) for ‘Absorption & Imaginative Involvement’), ($t(32) = 3.80$, $p = .001$ (1-tailed)) for ‘Depersonalization & Derealization’, and finally ($t(32) = 2.75$, $p = .003$ (1-tailed)) for the ‘DES/28’.

The outcomes above come forward with *substantial support for Hypothesis 1*.

The *contrast coefficients* for **Hypothesis 2**, stating that Type II alexithymia (unimpaired affective component) has significantly higher dissociation scores than Type I alexithymia (impaired affective component), were -1, 1, and 0 for Type I, Type II and the combined group of Type III & Lexithymia respectively. Even though all mean scores of the DES were higher for Type II than Type I alexithymia, the differences were too small to reach significance: a) ($t(32) = 1.33$, $p = .10$ (1-tailed)) for ‘Absorption and Imaginative Involvement’, b) ($t(32) = 0.47$, $p = .37$ (1-tailed) for ‘Activities of Dissociative States’ or dissociative amnesia, c) ($t(32) = 0.51$, $p = .31$ (1-tailed)) for ‘Depersonalization & Derealization’, and finally ($t(32) = 0.93$, $p = .18$ (1-tailed)) for the DES/28. Therefore *Hypothesis 2 was rejected*.

	Type I alexithymia (14%)			Type II alexithymia (26%)			Type III & Lexithymia (10%)		
	M	SD	N	M	SD	N	M	SD	N
<i>Absorption</i>	487.10	214.77	10	595.60	203.88	18	350.04	205.38	7
<i>Amnesia</i>	160.50	143.58	10	184.71	120.49	18	90.29	132.74	7
<i>Dep & Der</i>	332.30	176.87	10	363.03	158.52	18	98.71	87.24	7
<i>DES/28</i>	35.00	17.02	10	40.83	15.66	18	19.25	15.00	7

Table 1. Differences between the alexithymia types on mean, standard deviation, and number of subjects for each dissociation variable (DES).

The distribution of gender over the types was as follows: 4 males and 6 females in Type I, 4 males and 14 females in Type II, and 6 males and only 1 female in the combined group of Type III and Lexithymia. Because of the small number of males or females within some cells no gender x type Anovas could be performed. In total 40% of the 70 respondents who completed the BVAQ fell in the alexithymia range (14% Type I and 26% Type II). From the remaining 60% of non-alexithymics only 10% possessed a highly articulated cognitive component. This outcome further supports the notion on the devastating effect of CSA on psychological health. However it should be noted that alexithymia was defined as having an

impaired cognitive dimension, implying that respondents with an impaired cognitive & an average affective component (not involved in the Anovas) should be added to the number of Type I and II alexithymics from Table 1 as well, when defining the incidence of alexithymia. A closer inspection of the data-file didn't reveal such subjects.

Considerable support was demonstrated for the intricate relation between alexithymia and dissociation (see Table 2).

	DES /28	a. Absorption	b. Amnesia	c. Dep & Der
<i>ALEX Total</i> N=69	0.43**	0.34**	0.36**	0.49**
<i>a. Verbalizing</i> N=70	0.46**	0.41**	0.33**	0.52**
<i>b. Identifying</i> N=70	0.59**	0.51**	0.50**	0.61**
<i>c. Analyzing</i> N=69	0.16	0.12	0.15	0.19
<i>d. Fantasizing</i> N=70	- 0.32*	- 0.32**	- 0.27*	- 0.24*
<i>e.Emotionalizing</i> N=70	0.30*	0.25*	0.32*	0.29*

Table 2. Pearson correlation coefficients between alexithymia and dissociation (*: $p < 0.05$ (2-tailed); **: $p < 0.01$ (2- tailed)). Positive correlations with alexithymia mean a reduced while negative correlations mean an augmented ability to ...

Nearly all alexithymia subscales (except Analyzing) did show robust significant correlations with the DES/28 and its three subscales. Alexithymia total and the cognitive component are, as expected, positively correlated with dissociation. The negative correlation between Fantasizing and dissociation (Absorption & Imaginative involvement) supports the notion about dissociation and fantasy-proneness. The positive correlation between Emotionalizing and dissociation favours the emotional disengagement hypothesis.

3.2 Explorative part

3.2.1 Alexithymia types and abuse characteristics

Moreover it was explored whether the characteristics of CSA would be associated with particular alexithymia types. Because the literature on the impact of specific abuse features on the development of alexithymia is equivocal, *one-way Anovas* with *post hoc* instead of planned comparisons were performed. Significant differences between the alexithymia types were only found for Duration ($F(2, 29) = 4.15, p = .03$; 2-tailed). The Mean duration for Type I, Type II and Type III & Lexithymics were 4.56, 4.25, and 2.57 years respectively. The effect size ($Partial\eta^2 = .22$) was large. The *Bonferroni Test*, assuming equal variances, revealed

a significant difference between Type I and Type III & Lexithymia ($p = .04$; 2-tailed) and between Type II and Type III & Lexithymia ($p = .05$; 2-tailed).

3.2.2 Onset before the age of 10 and abuse characteristics, alexithymia, and dissociation

None of the t -tests did reach significance on dissociation as dependent variable. However respondents abused before the age of 10 displayed significantly more ($t(64) = -2.27$, $p = .03$; 2-tailed) Fantasizing ($M = 24.00$; $SD = 7.24$) than respondents abused after the age of 10 ($M = 28.75$; $SD = 7.51$). Furthermore respondents abused before the age of 10 reported significantly more ($t(64) = 2.59$; $p = .01$; 2-tailed) problems with Verbalizing emotions ($M = 29.72$; $SD = 7.26$) than respondents abused after the age of 10 ($M = 24.19$; $SD = 7.96$). Finally respondents abused before the age of 10 not only reported significantly more ($t(29,06) = 2.61$, $p = .02$; 2-tailed) Memory Recovery ($M = 0.60$; $SD = 0.50$) than respondents abused after the age of 10 ($M = 0.25$; $SD = 0.45$), but they also reported significantly longer ($t(30,38) = 2.25$, $p = .03$; 2-tailed) episodes of inability to recall the traumatic event ($M = 12.47$ years; $SD = 13.54$) than respondents abused after the age of 10 ($M = 4.80$ years; $SD = 10.64$).

Assuming that retrieval of abuse in adults is dependent upon the ability to verbalize emotions would imply a relation between problems with verbalizing emotions and memory recovery, but this hypothesis was rejected because of the low non-significant correlation between verbalizing emotions and memory recovery ($r = -0.07$, $N = 62$). An alternative hypothesis dealing with false memories, stating that memory recovery is due to fantasy proneness had to be rejected as well, because the correlation between fantasy and memory recovery was low and non-significant ($r = -0.18$, $N = 62$). In fact memory recovery correlated significantly neither with alexithymia, nor with dissociation, but both having experienced episodes of inability to recall the traumatic event ($r = 0.26^*$, $N = 61$) and the duration of those episodes ($r = 0.33^*$, $N = 60$) did correlate significantly with the father being the perpetrator.

3.2.3 Correlations between abuse characteristics and alexithymia total, and dissociation

However Alexithymia Total turned out to be significantly correlated with a few abuse characteristics: with Frequency ($r = 0.31^*$, $N = 56$), Position of Power ($r = 0.33^{**}$, $N = 64$), and Emotional Pressure ($r = 0.28^*$, $N = 62$).

The DES/28 score also correlated with some abuse characteristics: with Duration ($r = 0.30^*$, $N = 62$), Frequency ($r = 0.37^{**}$, $N = 57$), Attempted Coitus ($r = 0.28^*$, $N = 61$), Threatening ($r = 0.47^{**}$, $N = 66$), and Physical Violence ($r = 0.33^{**}$, $N = 65$).

3.2.4 Correlations between Activities of Dissociated States (Dissociative Amnesia) and Memory Recovery

Neither Dissociative Amnesia and Memory Recovery ($r = -0.12$, $N = 63$), nor Dissociative Amnesia and the duration of Memory Recovery ($r = -0.07$, $N = 62$) did correlate significantly. These results suggest that Dissociative Amnesia and Memory Recovery are

separate entities, where Dissociative amnesia is related to alexithymia (see Table 2), duration ($r = 0.31^*$, $N = 62$), frequency ($r = 0.28^*$, $N = 57$), attempted coitus ($r = 0.26^*$, $N = 61$), threatening ($r = 0.39^{**}$, $N = 66$) and physical violence ($r = 0.30^*$, $N = 65$), while memory recovery is only associated with the father being the perpetrator and an onset < 10 years (for correlations see above).

4. Discussion

4.1 Primary and secondary alexithymia

Although it can be argued that suffering from alexithymia is a trait, primarily based on inherent malfunctions of the brain or neurobiological deficits (called primary alexithymia by Sifneos, 1988), others have reported (Berenbaum, 1996; Cloitre et al., 1997; Sher & Twaite, 1999; Bermond et al., 2008) that alexithymia can also be induced by situational factors such as massive psychological trauma in childhood or later in life (called secondary alexithymia, for descriptions see Taylor et al., 1997; and Krystal, 1988). When looking at the present alexithymia and dissociation scores it could be argued that the interaction between trait and situation components in combination with plasticity and critical periods in brain maturation has led to what has been measured with the self-report questionnaires administered in our research. Therefore in adulthood it remains difficult to disentangle neurobiological deficits from deficits due to adverse situational forces in childhood. However, if situational factors were really crucial then an extensive pattern of substantial correlations between abuse characteristics and alexithymia ought to be found. These were not found, as alexithymia turned out to be significantly correlated with only a few abuse characteristics: with frequency, position of power, and emotional pressure. These outcomes make sense for the aetiology of alexithymia where situational forces are involved, because CSA is surrounded by secrecy, and therefore victims are withheld from both expressing their negative emotions (Miller, 1981) and learning to attach a verbal label to the emotional experience. Being abused at a young age is another important situational factor. Subjects abused before the age of 10 were more fantasy prone and displayed significantly more problems with verbalizing emotions. This result is in agreement with more recent neurobiological investigations suggesting that paediatric post traumatic stress disorder is associated with adverse brain behaviour (De Bellis & Keshavan, 2003), including those areas related to emotional behaviour (see also Bermond et al., 2006). Moreover CSA victims with an impaired (Type I and Type II) cognitive alexithymia component reported significantly longer abuse durations than CSA victims with a well-developed (Type III and Lexithymia) cognitive alexithymia component. From the above it is concluded that some situational factors indeed seem to enhance the development of alexithymia. However, it is striking that despite these harmful situational factors still 10% of the CSA victims did not display any signs of alexithymia (6 males and only 1 female). Our results on alexithymia types suggest that the abuse duration seems to be a crucial factor in the development of alexithymia types, as the average abuse duration of non-alexithymics lasted 'only' 2.57 years as opposed to 4.56 years for Type I and 4.25 for Type II alexithymics. The adverse effects of the duration of CSA on affect regulation may be due to retarded brain maturation as research on brain structures of PTSD subjects demonstrates that intracranial and cerebral volumes each correlated negatively with the duration of the maltreatment experience in years (De Bellis & Keshavan, 2003). Supporting parental styles such as unconditional positive regard (Rogers, 1951) and healthy personality

traits such as emotional stability (lack of neuroticism) are likely to act as a buffer against the adverse effects of CSA.

4.2 Dissociation, alexithymia and sexual assaults

Dissociation correlated with some abuse characteristics as well: with duration, frequency, attempted coitus, threatening, and physical violence. It is striking that only one assault (e.g. attempted coitus) turned out to be correlated with dissociation. None was related to alexithymia. Therefore our results support Finkelhor's (1979) observation that our society's view of intercourse as the most damaging form of CSA is "a well-ingrained prejudice" unsupported by research.

4.3 Dissociation can be related to both a numbing (emotional disengagement) and a startle response (dissolving power of emotions)

Another interesting general finding concerns the association between alexithymia and dissociation. Substantial support was found for the hypothesis stating that alexithymics (subjects with an impaired cognitive alexithymia component, e.g. Type I and Type II) have significantly higher dissociation scores than non-alexithymics (subjects with a highly articulated cognitive alexithymia component, e.g. Lexithymia and Type III). Furthermore the cognitive alexithymia component and as a consequence nearly all its subscales (except Analyzing) did show robust significant correlations with the average DES and its three subscales. In non-clinical samples alexithymia is characterized by paucity of fantasies. Here we find fantasy-proneness, which is in accordance with the notion that dissociative subjects score high on 'Absorption & Imaginative involvement', another fantasy measure. Moreover the valence of the correlation between Emotionalizing and dissociation was positive, indicating that dissociation is related to reduced emotionality or flatness of affect and supports the point of view that both alexithymia and dissociation contribute to the enhancement of emotional disengagement.

At first sight the last outcome is puzzling, as it does not correspond to the view Janet (1911) originally had on the dissociative impulse. Janet (1911) emphasized the dissolving power of emotions on voluntary decisions, feeling states, and conscious sensations, e.g. intense anxiety, one of the most painful emotions in human existence was regarded as the impulse leading to the disruption of the normal controlling functions of consciousness. In the literature on dissociation this inconsistency with Janet's theory is captured by making a distinction between the acute dissociative response (peritraumatic dissociation) and the persistent dissociation which presence is more likely to be linked to pertinent psychopathological characteristics, among others affect intolerance (Foa & Hearst-Ikeda, 1996; Gershuny et al., 2003; Panasetis & Bryant, 2003). However none of these studies tried to solve this problem by looking at individual differences in emotional reactivity associated with contrasting dissociative states (based on animal studies), such as for instance Kretschmer (1961) did when explaining war neuroses. On the one hand animals are found to show a 'death feint' (Totstellreflex), also called an immobilization reflex or freezing response, and on the other hand an 'instinctive flurry' (Bewegungssturm) or startle response when exposed to an intensely stressful event. In competitive sports such different dissociative responses have been described when explaining performance deterioration in

serious competition (Moormann, 1994), and empirical evidence for such dissociations have been brought forward in figure skating, swimming and cycling (Moormann & Pijpers, 2004). The distinction between alexithymia types, e.g. when comparing Type I with Type II alexithymia allows for the investigation of differences between alexithymics with a numbing response (Type I – emotional flatness) versus alexithymics with a startle response (Type II – emotional flooding). A recent study on psycho-physiological correlates of the alexithymia components of the BVAQ (Bermond et al., 2010) demonstrates that, when comparing GSR responses in neutral versus fear inducing conditions, Type I alexithymics hardly respond to fear stimuli, while Type II alexithymics display longer lasting and strong responses. Both reactions can be found in traumatized people and are part of the alternating system within PTSD (Horowitz, 1976), consisting of avoidance (numbness) and re-experiencing components in combination with hyper-arousal (startle responses). As research on alexithymia types indicates that Type II alexithymics (impaired cognitive & unimpaired affective component) suffer from the greatest array of psychological problems (Moormann & Pijpers, 2004; Moormann et al. 2008) it was also tested whether Type II had significantly higher dissociation scores than Type I. Even though all mean scores of the DES were higher for Type II (Average DES = 40.84) than Type I (Average DES = 35.00), the differences were not large enough to reach statistical significance (it should be noted that both dissociation scores were very high and fell in the DID range). This result implies that in 26% of all CSA cases dissociation was associated with high emotionality (instinctive flurry – support for Janet's original view where intense emotions act as the dissociative impulse), while in 14% of all CSA cases dissociation was associated with low emotionality (freezing – support for the emotional disengagement hypothesis or persistent dissociation). This new approach in the study of alexithymia and dissociation not only allows for a more refined differential diagnosis, but has therapeutic implications as well, because it seems likely that Type I will benefit most from interventions used in the autistic spectrum (full blown alexithymia - Schizoid features), whereas therapeutic approaches used in Borderline PD will be more suited for the treatment of Type II (emotional roller coaster, see Moormann et al., 2008). The results can be criticized on the small number of subjects in the non-alexithymic cell, but it should be noted that the effect size was very large ($\text{Partial } \eta^2 = .22$).

Future research with alexithymia types within CSA should be directed at larger cell numbers.

4.4 No empirical support for the notion of dissociative amnesia as the explanatory mechanism behind memory recovery

In the explorative part analyses on the onset of the abuse before the age of ten revealed some interesting outcomes. Respondents abused before the age of ten reported both significantly more memory recovery and significantly longer episodes of inability to recall the traumatic event than respondents abused after the age of ten. Furthermore they reported significantly more problems with verbalizing emotions and significantly more fantasy-proneness. Therefore it is tempting to argue that memory recovery is associated with not being able to verbalize emotions or making up the abuse and eventually believing that it really happened (e.g. implanted memories). However no support was found for the hypothesis that retrieval of abuse in adults is hampered by problems with verbalizing emotions. The alternative hypothesis dealing with false memories (Loftus, 1997), stating that memory recovery is due

to fantasy proneness, had to be rejected as well. What then is crucial in memory recovery? According to the current DSM dissociative amnesia is held responsible for having experienced episodes of inability to recall the traumatic event. However, despite the very high average DES scores in our present research, indicating DID, the DES subscale 'Activities of dissociated states' (e.g. Dissociative Amnesia) did not correlate significantly with a) having experienced episodes of inability to recall the traumatic event and b) its duration. Apparently more mechanisms than dissociation alone can be held responsible for memory recovery. In an earlier study on memory recovery, based on in-depth interviews (Albach et al., 1996), initially the role of peridissociation was investigated as well. In the first draft a table was included where CSA women who dissociated at the time of the traumatic event (37% reported peridissociation) were compared with CSA women who did not dissociate at the time of the event (27%) on having experienced an episode of inability to recall the event as dependent variable. The result from the Chi-square test was not significant ($(1, N = 74) = 0.32$). Although this table has not been published in the final version the results indicate clear-cut that other mechanisms than dissociation alone must be involved in memory recovery. If dissociation is not the crucial mechanism behind memory recovery what then is important? In the current study it turned out that memory recovery was only associated with the abuse onset before the age of ten and with the father being the perpetrator. If the father has been the perpetrator the child becomes confused. Fathers love you, show attention, affection and tenderness, but don't hurt, manipulate or threaten you. In psychodynamic thinking this ambivalence towards the father causes an inner conflict in the child and repression is seen as one of the many active defences against this inner conflict. The abuse is banned out of consciousness. That an inner conflict may hamper recall is in line with the findings of Browne and Finkelhor (1986) who indicated that abuse by fathers or stepfathers has a more negative impact than abuse by other perpetrators. It is also in line with the results of Williams' prospective study (1994), noting that sexual abuse by a perpetrator with a close relationship to the child is likely to combine elements of betrayal, fear, and conflict, which may cause the victim to be confused about the nature of the abuse and to experience problems with the memory of it. From a neurobiological point of view it can be argued that, when the brain matures, material stored in memory needs constant re-elaboration (new updates) to remain accessible for retrieval. Memory material not subjected to regular updates, especially when it has been banned out into the periphery of attention and consciousness, becomes extremely difficult to retrieve. The avoidance component in PTSD ensures that the traumatic events are kept out of the focus of attention. The avoidance component collapses (decompensation) as soon as unforeseen stimuli appear that act as abuse-related triggers leading to a complete re-experiencing of the traumatic event, a so-called amnesic turning point (see Albach, 1993; Albach et al., 1996).

5. Conclusions

1. New insights were obtained by introducing the distinction between alexithymia types in the complicated relation between alexithymia and dissociation, as both a high affective alexithymia component (Janet's original view of intense emotion as the dissociative impulse) and a low affective alexithymia component (the emotional disengagement hypothesis) turned out to be related to very high average DES scores (>

- 25), indicating DID. In 26% of all CSA cases dissociation was associated with Type II alexithymia (implying startle responses – support for Janet's original view), while in 14% of all CSA cases dissociation was associated with Type I alexithymia (implying psychic numbing – support for the emotional disengagement hypothesis or persistent dissociation).
2. Our results support Finkelhor's (1979) observation that our society's view of intercourse as the most damaging form of CSA is "a well-ingrained prejudice" unsupported by research. The severity of sexual assaults with or without real body contact was not of crucial importance for developing alexithymia and dissociation in adulthood.
 3. No empirical evidence could be brought forward for the DSM notion that dissociative amnesia (Activities of dissociative states) is the mechanism behind memory recovery. Instead our results favour the Freudian construct of repression in combination with an early onset (support for Freud's Seduction theory, which he later abandoned in favour of Psychoanalysis; see Albach, 1993) as memory recovery was only related to the father being the perpetrator (implying an inner conflict) and an abuse onset < 10 years of age.

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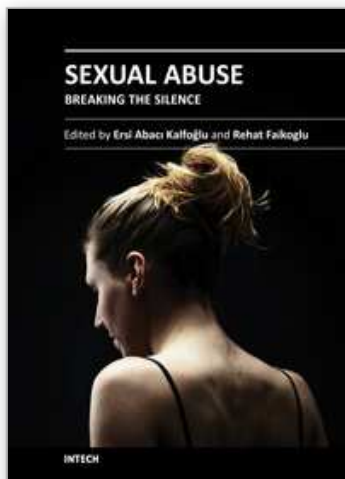
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Sexual Abuse - Breaking the Silence

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Sexual assault can be considered as expression of aggression through sex. This, in turn, can have serious negative effects on a survivor's social and occupational functioning. This book has been organized towards that specific approach, by compiling the scientific work of very well-known scientists from all over the world. The psychological victimization of sexual assault, the physiological aspect of sexual abuse and the different attitudes in coping with sexual assault based on different cultural backgrounds are analyzed. Having in mind that one solution may not necessarily be suitable for all cases, we hope that this book will open a debate on sexual assault for future practice and policy and that it will be a step forward to 'break the silence'.

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