



Schema modes and childhood abuse in borderline and antisocial personality disorders

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Abstract

Complex personality disorders (PDs) have been hypothesized to be characterized by alternating states of thinking, feeling and behavior, the so-called schema modes (Young, Klosko, & Weishaar (2003). *Schema therapy: A practioner's guide*. New York: Guilford). The present study tested the applicability of this model to borderline personality disorders (BPD) and antisocial personality disorders (APD), and related it to a presumed common etiological factor, childhood trauma. Sixteen patients with BPD, 16 patients with APD and 16 nonpatient controls (all 50% of both sexes) completed a Schema Mode Questionnaire assessing cognitions, feelings and behaviors characteristic of six schema modes. Participants were interviewed to retrace abusive sexual, physical and emotional events before the age of 18. BPD as well as APD participants were characterized by four maladaptive modes (Detached Protector, Punitive Parent, Abandoned/Abused Child and Angry Child). APD displayed most characteristics of the Bully/Attack mode, though not significantly different from BPD. The Healthy Adult mode was of low presence in BPD and of high presence in APD and the nonpatients. Frequency and severity of the three kinds of abuse were equally high in both PD groups, and significantly higher than in nonpatients.

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1. Introduction

Recent insights have led to the view that complex personality disorder (PD) are not characterized by one set of pathogenic schemas, but by different sets that can be activated in alternation. Young for instance, has proposed schema modes as relatively independent organized patterns of thinking, feeling and behaving that underlie the different states of severe PD patients (Young, Klosko, & Weishaar, 2003). In Young's view borderline personality disorder (BPD) and antisocial personality disorder (APD) patients are characterized by various pathogenic schema modes. They are assumed to suddenly flip from one mode into another, especially in reaction to environmental changes caused by important events. Young hypothesized that four modes are central to BPD: the Detached Protector, the Angry and Impulsive Child, the Abandoned Child (in following with the second author in order to emphasize the central role of abuse, this mode will be further referred to as the Abandoned and Abused Child (Arntz & Bögels, 2000)) and the Punitive Parent. There also is a Healthy Adult mode, however due to extreme psychopathology of these patients it is assumed to be of low presence. Young's schema-mode model is the basis of his schema therapy for severe PD, an increasingly popular therapeutic approach of which the effectivity is high (Giesen-Bloo et al., 2005; Nordahl & Nysæter, 2005).

When patients find themselves in the Abandoned and Abused Child mode, they feel the enormous pain and fear of abandonment caused by their abusive history which expresses itself in depressive, fearful, desperate, and inferiority feelings. This mode can be evoked by (perceptions of) (threatening) abandonment and abuse. Sometimes the patient becomes rebellious against the (supposed) injustice (s)he had experienced; this elicits the state of the Angry and Impulsive Child in which all bottled up aggressive feelings discharge so that anger, manipulation and greed are acted out. The evocation of these two child-modes usually leads to activation of self-punishing moral rules, mostly the direct internalizations of the punishing behavior of one of the caregivers, accounting for the symbolic mode name of the Punishing Parent. In this mode, the patient is afraid (s)he did something wrong, sees him/herself as evil and worthless because of feelings and desires that are (threatened to be) activated. As a consequence of this self-directed anger and hate develops and the patient will punish him/herself in one or another way. Most of the time however, the patient finds him/herself in the Detached Protector mode, where (s)he does not have to feel the emotions and pain caused by the three other modes. The patient does not feel emotions, is unaware of any problems and is seemingly compliant (Arntz & Bögels, 2000; Arntz & Kuipers, 1998; Young et al., 2003).

As to APD, Young states that beside the Healthy Adult mode and the four modes described above, there is a fifth pathological mode present in antisocials called the Bully and Attack mode. In this mode, the antisocial hurts other people to overcompensate or to cope with mistrust, abuse, deprivation and defectiveness (Young, 2002; Young et al., 2003).

A study by Arntz, Klokman, and Sieswerda (2005) investigated whether the four maladaptive schema modes are specific for BPD patients and whether BPD-relevant

stress specifically increases one of the modes, the Detached Protector mode. The results indicated that BPD patients were indeed characterized by the modes. The stress induction induced negative emotions in all groups, but the BPD group was unique in that the Detached Protector increased significantly more than in cluster-C PD patients and nonpatient controls (all women).

The hypothesized similarity in schema modes of BPD and APD has not been studied yet. Nevertheless, at least two sets of empirical findings suggest that the overlap in schema modes may be considerable. First, it has been noted that there is a large overlap in symptomatic expression of the two PDs.

Several DSM-IV diagnostic criteria of BPD and APD are quite similar, such as affect instability, inappropriate, intense and poorly controlled expression of anger and impulsivity that is potentially self-damaging (Blais & Norman, 1997; Holdwick, Hilsenroth, Casttebuty, & Blais, 1998). Furthermore, epidemiological figures point to high percentages of overlap; between 10 and 47% of BPD patients also meet the criteria for APD and about 70% display antisocial behavior (Paris, 1997; Widiger, Frances, & Trull, 1987; Zanarini & Gunderson, 1997). Averaged over studies approximately 70% of the APD patients meet BPD criteria (Widiger & Corbitt, 1997). Furthermore, while the prevalence in the community of both BPD and APD is about 1–2%, the sex distribution for APD is 80% male and for BPD 80% female. This would seem to make them ‘mirror image’ disorders. The gender difference could account to a large degree for the differences between BPD and APD; the differences in behavior being aggressiveness in APD and victimization in BPD could be a reflection of gender differences between men who more frequently display externalizing behavior and women who show more internalizing behavior. It has even been suggested that the two actually concern one underlying disorder, which expresses itself in BPD with women and in APD with men (Hudziak et al., 1996; Widiger & Corbitt, 1997; Paris, 1997).

Second, there also seems to be a large overlap in etiological factors. Numerous studies over the past decade have pointed out the frequent occurrence of childhood trauma in patients with BPD. Between 1987 and 1992, eleven studies confirmed this high incidence of childhood trauma in borderline patients (Sabo, 1997).

There are also studies reporting a positive relation between childhood abuse and APD (Burgess, Hartman, & McCormack, 1987; Dodge, Pettit, Bates, & Valente, 1995; Dutton & Hart, 1992; Horwitz, Widom, McLaughlin, & White, 2001; Marchall & Cooke, 1999; Pollock et al., 1990; Wallen, 1992). The DSM-IV states that childhood abuse or neglect increases the probability of a conduct disorder evolving in APD (APA, 1995). Burgess et al. (1987) have suggested a link between sexual abuse in childhood and later externalizing social deviant behavior. Dutton and Hart (1992) decided from file research of 604 male prisoners that men who were abused in childhood are three times more at risk of displaying violent behavior compared to nonabused men.

Despite the fact that these data suggest a central role of childhood abuse in both BPD and APD, there are—to our knowledge—only two studies that directly compared the prevalence and severity of abuse between both groups. Zanarini and Gunderson (1997) found in both groups substantial figures of childhood neglect and

abuse, although verbal abuse and emotional withdrawal were reported by a significantly higher percentage of the BPD group compared to the APD group. A study by Herman, Perry, and van der Kolk (1989) found that BPD patients gave significantly higher reports of physical, sexual and witnessing violence traumas than patients with borderline traits and persons with no borderline diagnoses. No association was found for APD and trauma. However, this study did not concern a systematic comparison between both groups, instead BPD patients were compared with a group of persons with borderline traits and with a mixed nonborderline control group with schizotypal PD ($N = 6$), APD ($N = 6$) and bipolar II affective disorder ($N = 11$) (Herman et al., 1989).

The aims of the present study were twofold. Firstly, to assess and compare the presence of the hypothesized schema modes in borderlines, antisocials and nonpatient controls. Secondly, the direct comparison of childhood abuse history in the three groups. In this study, gender was equally divided within both groups so that the probability to detect disorder-specific results is increased. This is of particular interest since gender plays an important role in the prevalence of abuse and the coping behavior of abused persons; girls are at two to three times greater risk for sexual victimization and women more often internalize the anger accompanying abuse, while men more often show an externalizing coping style (Carmen, Rieker, and Mills, 1984).

2. Method

2.1. Subjects

Sixteen patients with BPD, 16 APD patients and 16 nonpatients controls were included in this study. Gender was evenly distributed within the groups by planned stratification, so each group consisted of eight men and eight women. Patients were recruited in Belgium from three mental hospitals (OPZ Rekem, Medisch Centrum St-Jozef in Bilzen and Psychiatrisch Centrum Ziekeren in St-Truiden), a community mental health service (CCG Hasselt) and correctional institutions in Brugge, Gent and Antwerp. Normals were mostly hospital staff. The study obtained institutional Human Studies approval.

All subjects were screened with SCID-I (modules A–D) and SCID-II interviews. To be included, subjects had to be between 18 and 50 years of age, and of normal intelligence ($IQ > 80$). Patients were admitted to the BPD group when they met DSM-IV criteria for BPD and not more than two APD criteria. APD patients had to meet DSM-IV criteria for APD and not more than two BPD criteria. Exclusion from the study occurred if patients met the criteria of a psychotic or bipolar disorder. Exclusion criteria for normal subjects were axis I or II disorders, and two or more BPD or APD criteria.

No between-group differences were found on age and intelligence. Mean age of the total sample was 30.9 years (BPD: 31.4; APD: 31.1; nonpatients: 30.2), ages ranging in each group from 19 to 46 years. There was no difference between the groups

concerning mean intelligence (BPD: 100.1; APD: 105.9; nonpatients: 107.9). Neither did the clinical groups differ significantly in the presence of mood disorders (BPD: 62.5%; APD: 31.3%, $N = 16$, $\chi^2(1) = 3.14$, $p = 0.077$) or the mean number of axis II disorders (BPD: 1.88; APD: 1.27, Mann-Whitney corrected $Z = 1.60$, $p = 0.11$).

The APD patients were significantly lower educated than the control group (Kruskal-Wallis: $\chi^2[2; N = 48] = 10.57$, $p = 0.005$), and a higher percentage of the patients were single (Chi-square: $\chi^2[2, N = 48] = 6.10$, $p = 0.047$). The analyses were not corrected for these two variables, because it was reasoned that they were inherent to BPD and APD.

2.2. Procedure

Subjects were individually seen at one of the institutions or prisons in Belgium between February and August 2002. At the start of the research procedure, informed consent was obtained. Participants were interviewed with both SCIDs and, if inclusion and exclusion criteria were met, with an interview for traumatic experiences. Then participants filled out the Schema Mode Questionnaire.

2.3. Materials

Dutch versions of the SCID-I and SCID-II were used to assess DSM-IV axis I diagnoses and personality pathology (First, Spitzer, Gibbon, Williams, & Benjamin, 1997; First, Spitzer, Gibbon, Williams, & Benjamin, 1994; van Groenestijn, Akkerhuis, Kupka, Schneider, & Nolen, 1999; Weertman, Arntz, & Kerkhofs, 2000). Good factorial validity and good interrater reliability of the Dutch SCID-II have been demonstrated in other studies (Arntz, 1999; Weertman, Arntz, Dreesen, van Velzen, & Vertommen, 2003).

The Schema Mode Questionnaire was administered to assess the 6 schema modes under study. This questionnaire is largely based on the Schema Mode Questionnaire developed by Arntz et al. (2005) which assesses the presence of five modes i.e. the Detached Protector (e.g. 'It is best to keep a distance from other people', 'I feel empty'), the Angry Child (e.g. 'I have to ventilate my feelings and work them off', 'I directly satisfy my needs'), the Abandoned and Abused Child (e.g. 'I am helpless and powerless', 'I ask for reassurance'), the Punitive Parent (e.g. 'I am bad and deserve punishment', 'I feel guilty') and the Healthy Adult mode (e.g. 'I am worthwhile', 'I feel good'). Based on suggestions by Young (personal communication), McGinn and Young (1996), Beck and Freeman (1990), Arntz and Kuipers (1998) and clinical observations, this questionnaire was supplemented by cognitions, emotions and behaviors characteristic of the Bully and Attack mode (e.g. 'Attack is the best defence', 'I humiliate others'). The final Schema Mode Questionnaire consisted of seven items on cognitions, five on emotions and five on behavior for each mode. Items were randomized within each category, resulting in a three-part questionnaire. Participants were instructed to rate the degree in which they generally believed in the stated cognitions, experienced the feelings described and engaged in the behavior on 100 mm VASs.

To assess for childhood abuse, an interview for traumatic events was used (Bossche, Kremers, Sieswerda, & Arntz, 1999). This interview retraces whether participants experienced certain abusive sexual, physical or emotional events before the age of 18. It specifies the actions, frequency, perpetrator(s), and the age of and the impact on the victims. The interview has predetermined answer categories and results in composite scores for sexual, physical and emotional abuse separately. The higher the composite score is, the higher are frequency and/or severity of abuse. These abuse scores were constructed out of the closeness of the perpetrators, the number of perpetrators, age-level at time of abuse (the younger the subject, the higher the score), duration (the longer the duration, the higher the score) and severity of what had happened. Internal consistencies of the subscales assessed with the Cronbach alpha proved excellent in the present sample: sexual abuse 0.82, physical abuse 0.91 and emotional abuse 0.90. To create a composite abuse score, Z-scores for each of the three types of abuse were computed and averaged.

3. Results

3.1. Schema modes in BPD and APD patients

The reliability of the Schema Mode Questionnaire was analysed. Five of the 102 items did not contribute to the internal consistencies of the subscales they were hypothesized to belong to. After elimination of these items, Chronbach's alpha coefficients showed excellent internal consistencies (see Table 1).

Fig. 1 depicts the mean scores of the groups on the six schema modes. Group differences were tested by means of MANOVA and Bonferroni corrected pair-wise comparisons. A multivariate test indicates a highly significant group effect, $F_{Hot}(12, 78) = 18.07$, $p < 0.001$. Univariate tests revealed significant group effects on all subscales, $F(2, 45) > 5.59$, $p < .007$. The groups' means and standard deviations and contrasts between groups are presented in Table 2.

The BPD group scored significantly higher on the four BPD-related schema modes, and significantly lower on the Healthy Adult mode than the APD and the control group.

Table 1
Internal consistencies of the schema mode subscales as assessed with the Schema Mode Questionnaire

Mode	Internal consistency
Detached Protector	0.93
Angry Child	0.87
Abandoned and Abused Child	0.94
Punishing Parent	0.91
Bully and Attack	0.87
Healthy Adult	0.88

Note. Internal reliabilities estimated by Chronbach's alpha coefficient.

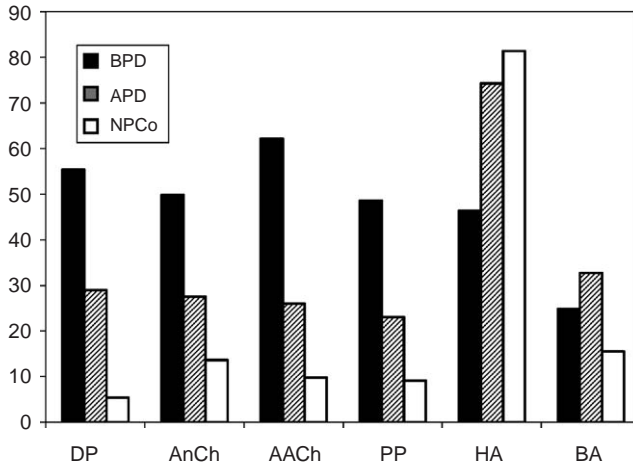


Fig. 1. Schema mode ratings by the three groups. DP—Detached Protector; AnCh—Angry Child; AACh—Abandoned and Abused Child; PP—Punishing; HA—Healthy Adult; BA—Bully and Attack.

Although borderlines tended to score higher on the Bully and Attack mode than the nonpatients, this difference did not reach significance. In turn, antisocials also scored significantly higher on the four BPD-related schema modes than the control group. However, antisocials had lower scores on these modes than borderlines did. The Bully and Attack mode was significantly higher present in the APD group than in the normal control group, but the two PD groups did not differ significantly in that mode. APD patients scored significantly higher than the BPD group on the Healthy Adult mode. In fact, the presence of this mode did not differ significantly between the APD and control group.

The influence of gender on the mean scores of the modes was also analysed. A multivariate test revealed a gender effect, $F_{Hot}(6, 37) = 2.79, p = 0.024$. Univariate tests indicated that only the Bully and Attack mode was significantly stronger in men than in women, $F(5, 42) = 4.48, p = 0.04$. None of the modes showed a significant interaction between group and gender, $F(5, 42) > 0.12, p > 0.21$.

To summarize, the modes of the Detached Protector, the Angry Child, the Abandoned and Abused Child and the Punitive parent are indeed, as hypothesized, characteristic of BPD patients and also, but in lower degree, of APD patients. The Bully and Attack mode appeared specific for the APD group, but the difference between APD and BPD failed to reach significance. The Healthy Adult mode was of low presence in the borderlines, while the antisocials reported this mode equally high as the nonpatients.

3.2. Childhood abuse

Fig. 2 demonstrates the mean composite scores of severity of sexual, physical and emotional abuse before the age of 18. A multivariate test indicated a highly

Table 2
Mean, standard deviation and contrasts between groups of the modes

Contrast _{ij}	<i>m_i</i>	<i>sd_i</i>	<i>m_j</i>	<i>sd_j</i>	<i>t</i>	<i>P</i>
<i>Detached Protector</i>						
BPD–APD	55.39	14.38	29.01	15.11	5.94	<0.001
BPD–NPCo	55.39	14.38	5.42	5.76	11.24	<0.001
APD–NPCo	29.01	15.11	5.42	5.76	5.31	<0.001
<i>Angry Child</i>						
BPD–APD	49.80	10.24	27.54	14.26	5.65	<0.001
BPD–NPCo	49.80	10.24	13.67	8.02	9.17	<0.001
APD–NPCo	27.54	14.26	13.67	8.02	3.52	<0.001
<i>Abandoned and Abused Child</i>						
BPD–APD	62.18	13.16	25.99	12.73	9.07	<0.001
BPD–NPCo	62.18	13.16	9.77	6.84	13.13	<0.001
APD–NPCo	25.99	12.73	9.77	6.84	4.07	<0.001
<i>Punishing Parent</i>						
BPD–APD	48.58	16.08	13.06	11.88	5.88	<0.001
BPD–NPCo	48.58	16.08	9.16	7.16	9.09	<0.001
APD–NPCo	13.06	11.88	9.16	7.16	3.21	<0.001
<i>Healthy Adult</i>						
BPD–APD	46.37	13.10	74.26	12.83	6.48	<0.001
BPD–NPCo	46.37	13.10	81.38	10.41	8.13	<0.001
APD–NPCo	74.26	12.83	81.38	10.41	1.65	0.27
<i>Attack and Bully</i>						
BPD–APD	24.83	16.76	32.77	17.05	1.54	0.32
BPD–NPCo	24.83	16.76	15.54	8.18	1.80	0.21
APD–NPCo	32.77	17.05	15.54	8.18	3.34	0.007

significant group effect, $F_{\text{Hot}}(6, 84) = 2.31, p < 0.001$. Univariate tests also revealed significant group effects on all subscales, $F(2, 45) > 17.02, p < 0.001$. The groups with borderline and APD reported significantly higher rates of the three kinds of abuse than the nonpatient group (see Table 3).

Although BPD had higher sexual abuse scores than APD, whereas APD had higher physical abuse scores than BPD, these differences did not reach significance. Standardized *z* total scores of abuse were also not significantly higher amongst borderlines than amongst antisocials, which indicates that the prevalence and severity of abuse did not differ between the two groups.

Abuse data were analyzed more in detail concerning duration of the abuse, the number of perpetrators and abuse actions and the age-level at time of abuse. Inspection of these data showed borderlines experienced a higher number of sexual abuse actions compared to antisocials (means for BPD: 3; APD: 1.50). Furthermore, borderlines who were physically abused experienced this at an earlier age compared to physically abused antisocials (BPD: 84.6% before the age of 12; APD: 50% before

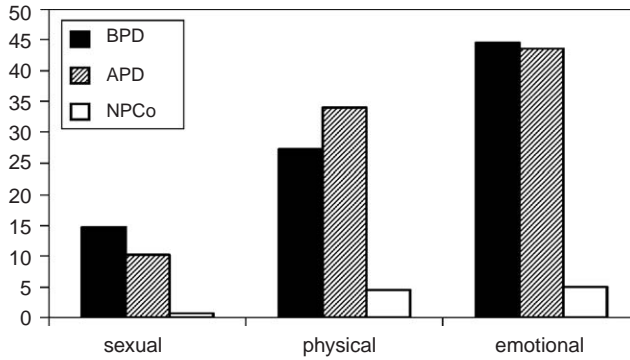


Fig. 2. Means of Childhood Abuse scores per group parent.

Table 3
Mean, standard deviation and contrasts between the groups of Childhood Abuse

Contrast _{ij}	<i>m_i</i>	<i>sd_i</i>	<i>m_j</i>	<i>sd_j</i>	<i>t</i>	<i>p</i>
<i>Sexual abuse</i>						
BPD–APD	14.69	9.90	10.19	9.75	1.59	0.29
BPD–NPCo	14.69	9.90	0.69	1.96	4.93	<0.001
APD–NPCo	10.19	9.75	0.69	1.96	3.35	0.007
<i>Physical abuse</i>						
BPD–APD	27.25	17.64	34.00	17.95	1.27	0.45
BPD–NPCo	27.25	17.64	4.50	6.34	4.29	<0.001
APD–NPCo	34.00	17.95	4.50	6.34	5.57	<0.001
<i>Emotional abuse</i>						
BPD–APD	44.50	12.86	43.56	14.73	0.22	0.98
BPD–NPCo	44.50	12.86	5.00	6.74	9.36	<0.001
APD–NPCo	43.56	14.73	5.00	6.74	9.13	<0.001

the age of 12), while sexually abused antisocials experienced this earlier than sexually abused borderlines (APD: 81.8% before the age of 12; BPD: 46.2% before the age of 12). The data showed no difference between borderlines and antisocials concerning the duration and number of perpetrators of sexual, emotional and physical abuse. Neither did the amount of emotional and physical abuse actions and the age-level at time of emotional abuse differ between BPD and APD.

The influence of gender on the mean scores of the subscales of abuse was also analysed. A multivariate test demonstrated a significant gender effect, $F_{Hot}(3, 40) = 3.67, p = 0.02$. Univariate tests show that women had significantly higher sexual abuse score than men, $F(5, 42) = 4.57, p = 0.038$. Although men were more often physically abused than women, this difference failed to reach significance. Multivariate interaction between group and gender was not significant, $F_{Hot}(6, 78) = 1.75, p = 0.12$, as were the univariate tests.

It can be concluded that borderlines and antisocials reported substantially more sexually, physically and emotionally abuse than the nonpatient group. Prevalence and severity of abuse did not differ between borderlines and antisocials. Women reported significantly more sexual abuse than men.

4. Discussion

We extended the Schema Mode Questionnaire developed by [Arntz et al. \(2005\)](#) to assess various schema modes as proposed by Young with a Bully and Attack mode, hypothesized to be specific for APD. In line with previous findings from [Arntz et al. \(2005\)](#), the extended Schema Mode Questionnaire showed good to excellent internal consistencies of the subscales, including the new Bully and Attack subscale.

The present study found, as hypothesized, that BPD patients were characterized by significantly higher scores on Detached Protector, Angry Child, Abandoned and Abused Child and Punitive Parent mode scales compared to the APD and nonpatient control group. The BPD group scored lower on the Healthy Adult mode. Although BPD patients displayed some characteristics of the Bully and Attack mode, this mode is not specific to them, as their scores did not differ significantly from those of the nonpathological group. Also in line with the hypothesis, APD patients scored significantly higher than the nonpatients but significant lower than the BPD group on the four BPD schema modes subscales. As hypothesized, APD patients displayed characteristics of the Bully and Attack mode significantly more than the nonpatients, but the difference with the BPD group, though in the expected direction, failed to reach significance. Higher scores on the pathological modes could have been expected in the antisocials. Clinical observations for instance, suggest that antisocials frequently demonstrate behavior related to the Angry Child and the Bully and Attack modes. Underreporting of these modes by antisocials can be explained by their tendency to deny socially unacceptable behavior. It has indeed repeatedly been reported that antisocials pretend to be more 'normal' than they actually are ([Limentani, 1981](#); [Walker, 1992](#); [Walters & Greene, 1983](#)). The high scores on the Healthy Adult mode, nearly equivalent to the nonpatients' scores, is in line with this. As a consequence, the question rises whether self-report by antisocials is the best way to determine the presence of these modes.

The Bully and Attack mode appeared to be significantly stronger in men than in women. This may be related to aggression being in general more characteristic of men than of women. It could also be due to our formulation of the Bully and Attack mode items, which may state openly vented aggressive behaviors in particular which is more characteristic of men than of women. Other modes were not gender-dependent, suggesting that the schema mode theory applies for both men and women.

Since prevalence and severity of abuse history did not differ between the BPD and the APD group, and because of the supposed causal relationship between abuse and the Abandoned and Abused Child mode, equal scores on the presence of this mode were expected in both groups. However, this was not the case: APD patients scored

this mode significantly lower than the BPD group did. Again, the findings hint at denial of the antisocials of this mode.

The results from the present study demonstrate that BPD and APD had experienced serious childhood emotional, physical and sexual abuse, significantly more than the nonpatients. The prevalence of abuse did not differ between the BPD and APD group. These findings are consistent with findings by other studies on BPD and APD that demonstrated a high rate of childhood abuse in these patients. In contrast to the study by [Herman, Perry, and van der Kolk \(1989\)](#), our BPD patients did not experience more cumulative pathological events than the antisocials. More detailed analyses of the data did show however, that borderlines had experienced a higher number of sexual abuse actions compared to antisocials. In contrast to the study of [Herman, van der Kolk and Perry](#), our BPD patients did not report more physical and sexual abuse than APD patients. The latter discrepancy however, could be due to the low sample size ($N = 6$) of the mentioned study. Further detailed analyses of the abuse data demonstrated borderlines were physically abused at earlier age than antisocials. The later onset age of physical abuse of antisocials could be due to the fact that many female antisocials reported physical abuse in early partner-relationships, and several male antisocials got involved in physical aggression (which sometimes was experienced as abuse) after the age of 12. It also appeared antisocials were sexually abused at an earlier age than borderlines. Our data indicated that women had significantly higher sexually abuse scores than men. No difference appeared between men and women concerning physical, emotional and total abuse score.

We also want to point out some restrictions of the present study and give recommendations for further research in this area. Firstly, there are shortcomings concerning the research population. Due to time constraint, clinical groups were only diagnosed on the presence of mood- and psychotic disorders on axis I. Furthermore, while working with antisocials there appeared a great diversity within this group. It would be advisable for further research to include a measure for psychopathy. Secondly, it should be mentioned that despite the highly significant results concerning the relation between BPD and childhood abuse and APD and childhood abuse, this strong relation does not imply causality.

Thirdly, the present study solely used self-report data to assess schema modes. Clearly, observational, physiological and behavioural assessment should be done to further validate the construct.

Fourthly, as mentioned before, there are several findings that hint at under-reporting and denial by antisocials of negative emotions and cognitions characteristic of certain schema modes. It would be interesting to compare the data with measures of implicit presence of these emotions and cognitions. We tried to do this in a pilot study by means of a variant on the Implicit Association Task, but no conclusions concerning specific schema modes could be drawn. However, implicit measures may be of interest with APD because of the central role that is administered to denial within this PD.

In sum, BPD as well as APD were characterized by four maladaptive modes (Detached Protector, Punitive Parent, Abandoned/Abused Child and Angry Child).

APD displayed characteristics of the Bully/Attack mode, but this presence did not significantly differ from BPD. The Healthy Adult mode was of low presence in BPD and of high presence in APD and the nonpatients. Frequency and severity of the three kinds of abuse were equally high in both BPD and APD. It can be concluded BPD and APD show a substantial overlap concerning frequency and severity of childhood emotional, physical and sexual abuse and in the presence of the schema modes as described by Young, Klosko, and Weishaar (2003).

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