MONASH University

Schema Modes and Dissociation in Borderline Personality Disorder/Traits in Adolescents and Young Adults

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This thesis is dedicated to my father who lives in my mind and my mother who connects me to the world.

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Abstract

Borderline personality disorder (BPD) is one of the most common and severe forms of personality disorder in clinical practice. Schema therapy is a relatively new system of psychotherapy well suited to patients with BPD. Two main concepts found within schema therapy are “early maladaptive schemas” and “schema modes”. Early maladaptive schemas are core beliefs about the self and others that contribute greatly to the formation of personality disorders. A schema mode is a combination of schemas and a coping strategy and can be defined as “an organized pattern of thinking, feeling and behaving based on a set of schemas”. Dysfunctional schema modes in BPD are essentially facets of the self that have not been integrated into a cohesive personality structure and therefore potentially operate in a dissociated manner. Schema modes might be particularly useful in understanding the dramatic emotional shifts seen in BPD patients. As part of the literature review of schema therapy in this thesis, a systematic review of 17 studies was done that examined the relationship between early maladaptive schemas and BPD. This review showed that the schemas of disconnection and rejection including abandonment, mistrust/abuse, social isolation, emotional deprivation and defectiveness/shame were the most prevalent schemas in patients with BPD. As schema modes represent a new concept and the phenomenology of schema modes has only been studied in adults, this study aimed to extend the literature by identifying the schema modes present in adolescents with borderline personality disorder or traits, and also assess the relationship between dysfunctional schema modes and dissociation in BPD patients. Recruitment of 42 adolescent/youth BPD patients from Monash Health enabled comparison with the 42 non-patients, who were recruited from sporting clubs, schools and universities. Borderline psychopathology was assessed by the SCID-II structured interview. Subjects completed the Schema Mode Inventory (SMI), Wessex Dissociation Scale (WDS), Psychiatric Screening Questionnaire (PDSQ) and DSM-IV and ICD-10

Personality Questionnaire (DIP-Q). Analyses employed Mann-Whitney U tests for comparing patient and non-patient groups, while correlational analyses and stepwise regression explored the relationship between schema modes and dissociation. Key results were that patients with BPD scored significantly higher than non-patients in all maladaptive modes except narcissistic modes (bully/attack and self-aggrandizer modes). The strongest correlations were found between dissociation and the following modes: Detached Protector, Angry Child, Impulsive Child, Punitive Parent, Demanding parent, and Vulnerable Child. Step-wise regression showed that the detached protector mode and impulsive child mode made a significant contribution to the dissociation scores and explained 58 percent of the variance in dissociation. Clinically, these latter modes could seriously handicap the therapeutic relationship and need to be considered as primary targets of treatment in patients with BPD. The identification and integration of dissociated schema modes into therapy could be a significant therapeutic goal for persons diagnosed with BPD.

Thesis including published works declaration

I hereby declare that this thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

This thesis includes one original paper published in peer reviewed journals. The core theme of the thesis is schema modes and dissociation in borderline personality disorder/traits in adolescent or young adults. The ideas, development and writing up of all the papers in the thesis were the principal responsibility of myself, the student, working within the School of Clinical Sciences under the supervision of Prof. David Kissane.

The inclusion of co-authors reflects the fact that the work came from active collaboration between researchers and acknowledges input into team-based research.

In the case of *chapter 2* my contribution to the work involved the following:

Thesis Chapter	**Publication Title**	**Status** *(published, in press, accepted or returned for revision, submitted)*	**Nature and % of student contribution**	**Co-author name(s) Nature and % of Co-author's contribution***	**Co-author(s), Monash student Y/N***
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I have not renumbered sections of submitted or published papers in order to generate a consistent presentation within the thesis.

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The undersigned hereby certify that the above declaration correctly reflects the nature and extent of the student's and co-authors' contributions to this work. In instances where I am not the responsible author I have consulted with the responsible author to agree on the respective contributions of the authors.

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Chapter 1. Introduction

1.1. Overview of the Present Research

Personality disorders (PDs) are prevalent psychological disturbances with significant clinical ramifications (Bradley, Zittel Conklin, & Westen, 2005). Therapists and researchers rarely apply Axis II diagnosis in adolescents as DSM-IV suggests that PDs in adolescents be diagnosed with caution (Bradley et al., 2005). However, a substantial body of research indicates that, despite considerable developmental alterations in adolescence, long-lasting maladaptive personality features can be recognized in adolescents. A recent succession of studies has suggested that the prevalence of PDs in adolescents, according to the criteria applied to adults, is approximately similar to that in adults (roughly 15%), and PD symptoms in adolescents are diagnostically stable over time (Bernstein, Cohen, Skodol, Bezirganian, & Brook, 1996; Johnson et al., 1999) and anticipate the diagnosis of axis I and axis II disorders in early adulthood (Grilo, Walker, Becker, Edell, & McGlashan, 1997; Johnson et al., 1999; Johnson et al., 2000). Alongside the doubts regarding the diagnosis of PDs in adolescents, DSM-5 mentioned that "for a personality disorder to be diagnosed in an individual younger than 18 years, the features must have been present for at least 1 year". DSM-5 made an exemption for antisocial personality disorder which cannot be diagnosed in anyone younger than 18 years (American Psychiatric Association, 2013, pp. 647-648).

Borderline PD (BPD) in adolescents and adults has been at the centre of empirical attention. Findings demonstrate that the symptoms of BPD (e.g., unmodulated emotions, unstable interpersonal relationships) and childhood experiences (e.g., disorganized attachment, history of early neglect and abuse) of BPD are similar in adolescents and

adults (Johnson et al., 1995; Ludolph et al., 1990; Pinto, Grapentine, Francis, & Picariello, 1996).

The development of early intervention programs for adolescents who met the BPD criteria would be beneficial and should cater for the unique needs of youth (Chanen, Jovev, McCutcheon, Jackson, & McGorry, 2008). These early interventions are intended to reduce the borderline general psychopathology, improve psychosocial functioning, and reduce the risk of depression, suicide, violence and self-harm (Chanen et al., 2008).

Whereas BPD had long been understood as a chronic and remarkably untreatable disorder, more recent data indicate a high remission rate (about 45% by 2 years and 85% by 10 years), with remission defined as "no more than two diagnostic criteria being met for at least 12 months, and a low relapse rate (of about 15%)." (Gunderson, 2011, p. 2038).

Psychotherapy is reported to be the primary treatment for BPD (American Psychiatric Association, 2004; Gunderson, 2011; Zanarini, 2009). Currently, there are four broad and comprehensive psychological models for understanding and treating BPD phenomenon. Two of these approaches are considered psychodynamic in essence: mentalization-based treatment and transference-focused psychotherapy. The other two are regarded to be cognitive-behavioural in nature: dialectical behavioural therapy and schema-focused therapy (Zanarini, 2009).

A recent multi-place trial organized in the Netherlands showed that schema therapy can lead to recovery from BPD in about half of the patients, while two-thirds of the patients experience a clinically significant improvement (Giesen-Bloo et al., 2006). "Schema therapy proved to be more than twice as effective as a psychodynamic treatment (Transference-focused psychotherapy)" (Arntz, van Genderen, Drost, Sendt, & Baumgarten-Kustner, 2009, p. xiii). Evidence of the effectiveness of the schema therapy

for BPD has been provided by another randomized control trial (Farrell, Shaw, & Webber, 2009) and case studies (Morrison, 2000; Nordahl & Nysaeter, 2005). A systematic review of the evidence base for schema therapy, including 12 studies that clinically tested schema therapy, suggests that schema therapy produces highly significant positive outcomes in terms of decreasing BPD symptoms (Masley, Gillanders, Simpson, & Taylor, 2011).

Dialectical behaviour therapy (DBT) is another cognitive behavioural model of treatment which has been suggested as the treatment of choice for individuals with BPD (Koons et al., 2001; Stoffers et al., 2012). Stoffers et al. (2012) assert that DBT is a preferred treatment because of the scarcity of evidence advocating other treatments rather than evidence of the effectiveness of DBT compared to other therapies.

DBT, schema therapy, and the cognitive analytic therapy introduced by Ryle, are integrative approaches incorporating the psychodynamic notions of transference/countertransference and the importance of the relationship between the therapist and the patient. All of these therapies emphasise a humanist respect for the patient's experience while they pursue the objectives of treatment from different perspectives. The purpose of this study is to achieve a better understanding of cognitive-emotive inter- and interpersonal constructs underlying BPD. Ryle (1997) asserted that DBT lacks any account of inter- and interpersonal processes defining repeated sequence of mental and behavioural patterns. However, a group of treatments including schema therapy and cognitive analytic therapy have introduced such processes such as schema modes, reciprocal role procedures or self-states. Schema therapy descriptions of poorly integrated schema modes in BPD inspirationally suggest the dissociated self-states described in cognitive analytic therapy. However, during the last decades, schema therapists have succeeded in developing sophisticated questionnaires measuring these

aspects of the mind and providing a path for quantitative research in this area. “Schema” and “schema mode” are basic constructs that make up schema theory. A schema is a cognitive emotional pattern projected on experience to help individuals explain it (Young, Klosko, & Weishaar, 2003). While schema is a trait concept, schema mode is a state concept consisting of several schemas and a coping strategy (avoidance, surrender and compensation). These schema modes could replace one another from moment to moment. Schema modes might act independently from each other as a result of an intense dissociation between them (Young et al., 2003). Therefore, the main focus of this study will be on cognitive emotive and behavioural structures called schemas and schema modes defined in schema therapy, particularly schema modes in relation to the dissociation in borderline PD phenomenon experienced in adolescence and early adulthood. In this chapter, we describe these constructs in more detail. A systematic review of the literature is also provided in chapter 2 which investigates the prominent schemas in borderline patients. As will be described in the next sections of the introduction, the main pathology of the borderline condition is the individual’s extreme instability in terms of thought, emotion and behaviour. Researchers in the domain of cognitive therapy, psychoanalysis, and attachment theory have suggested that BPD is characterized by “poorly integrated schemas that shift rapidly and unpredictably” (Blizard, 2010, p. 2). The recognition of dissociation can be efficacious in treating BPD because, if schema modes or self-states are dissociated, the ability of one mode to participate in therapy directed to another mode may be restricted. The founder of schema therapy has characterized schema modes by the degree to which a mode has become dissociated from an individual’s other modes (Young et al., 2003), this study will examine the extent to which the prominent schema modes in BPD are related to dissociation.

Owing to the recent emphasis of Young on the mode concept as the essence of schema therapy work with severe personality disorders (Kellogg & Young, 2006), and the benefits of the mode conceptualization over the early maladaptive schema conceptualization for formulation and treatment of BPD –which will be described further in this chapter-, a new batch of studies have been devoted to the role of schema modes in borderline personality disorder. However, only a few studies thus far (done by Arntz and Lobbestael) have studied the schema modes related to BPD patients. In fact, the number of studies in this area is scarce and is in its infancy. Examination of the schema mode model of Young et al. (2003) has received little empirical consideration (Johnston, Dorahy, Courtney, Bayles, & O'Kane, 2009). One tenet of Young's theory is the role of dissociation in the structure, permanence, and function of maladaptive schema modes in the BPD. Dissociation can be defined in terms of (1) signs and symptoms, (2) a process such as cutting off an integrated operation or (3), a division in the structural organization of personality (Dell & O'Neil, 2009; Vermetten, Dorahy, & Spiegel, 2007). Although Young and his colleagues' definition of dissociation has not been specifically linked to any of symptom, process or structure, it can be deduced from their writings (Young et al., 2003) that their definition is consistent with dissociation as divided personality segments or divided consciousness (i.e., Structural dissociation) as originally suggested by Janet (1907) (Johnston et al., 2009). It is hypothesized that different forms of dissociation are associated with mode pathology in BPD. To put it another way, an increase in mode severity and a decrease of in-between mode integration will heighten the dissociative structure of BPD.

There has been only one adult study that examined the relationship between dissociation and BPD (Johnston et al., 2009). This study suggested that, in BPD, reported dissociative experiences might be related to the dissociative division of the personality into

maladaptive schema modes, and in particular, the presence of parts of the mind being associated with maladaptive child modes.

As Kellogg and Young (2006) hypothesized, there are four main dysfunctional modes that characterize BPD patients: two child modes, the abandoned/abused child mode, and the angry and impulsive child mode, and two older modes, the punitive parent mode and the detached protector mode. All the research with regard to the prevalent borderline modes in comparison to non-clinical populations has been done in adult borderline populations. The nature of schema modes in younger borderline individuals has not been empirically studied. As a result, the aims of this study are as follows: Firstly, extend the literature by identifying which schema modes are present in adolescents with borderline personality disorder /traits. Secondly, assess the relationship between dysfunctional schema modes and dissociation in BPD and therefore put Young's schema mode concept within an empirical framework.

Secondary aim of this research project is the examination of the relationship between BPD and what were previously defined in DSM-IV as axis-I and axis-II disorders.

In order to explore the extent to which borderline personality disorder /traits are associated with levels of schema modes, a control group of non-patients is included in the study.

Based on Young, the hypotheses of the study are:

- Adolescent BPD patients will score lower than the non-patient group on the healthy adult mode and happy child modes, and higher on the vulnerable child, angry child, the enraged child, the impulsive child, punitive parent, the demanding

parent, detached protector, detached self-soother, and the compliant surrender schema modes.

- The level of dissociation will be significantly higher in the adolescent BPD group than the non-patient group, and the presence of maladaptive schema modes will be associated with higher dissociation in BPD patients.
- The child schema modes will predict the dissociation scores.

The hypotheses will be examined through a quantitative cross-sectional study of adolescents with BPD. A SCID-II structured interview will be applied for diagnosis of BPD. Axis-I and-II DSM-IV psychopathology will be also assessed by self-report inventories. Schema mode and dissociation will be assessed by questionnaires. Statistical analysis will be performed using the latest version of Statistical Package for Social Sciences (IBM SPSS statistics version 22). The Mann-Whitney U test for independent groups will be used to compare the schema modes of the patients and non-patient groups. Pearson Correlations will be used to assess the relationship between dissociation and schema modes. A regression analysis will be used to identify predictors of dissociation among schema modes and establish a predictive function for schema modes.

Prior to reporting on the study, in Chapter 1, I suggest the need for research in the area of the schema mode concept, the borderline PD phenomenon in adolescents, the theoretical framework and objectives of the project. Chapter 2 provides a systematic review of the relationship between early maladaptive schemas and borderline personality disorder/traits. Reviews of the relevant literature pertaining to the development of the definition of borderline personality disorder and dissociation in different schools of thought in psychology are presented in Chapter 3. Chapter 4 outlines the process of obtaining ethics approval, research methods, and measures applied in this project. Chapter 5 provides

detailed information on the results of the statistical analyses of results. In Chapter 6, the results of the study are discussed in light of the previous research and the existing theories regarding BPD, dissociation and schema modes.

In the following sections of this chapter, firstly, the standard definition of borderline personality disorder in the latest (fifth) edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-5) will be discussed (the historical roots of the definition of BPD are discussed in chapter 3). This is followed by an examination of studies in regard to the validity of the diagnosis of BPD in adolescents. Furthermore, the schema therapy theory and concepts, especially in relation to BPD, will be described in detail. The development of the concept of schema mode in schema therapy theory, and the shift towards schema mode concept particularly in an effort to understand the dramatic shifts of BPD patients, will be discussed in the following sections on the tenets of schema therapy.

1.2. General Introduction

Based on the definition of DSM-5, a personality disorder is an “enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual’s culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time and leads to distress or impairment”.

During the reformation process of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, multiple recommended revisions to introduce a dimensional approach were made that would have mainly changed the way by which individuals with these disorders are understood and diagnosed. Based on feedback received from a multilevel review of suggested revisions, the American Psychiatric Association Board finally decided to retain the DSM-IV approach related to categorical diagnosis with the same 10 personality disorders (American Psychiatric Association, 2013).

In Section II of DSM-5, the criteria for personality disorders have not altered from those in DSM-IV and again personality disorders are categorized into three clusters based on descriptive resemblances. Cluster A consists of paranoid, schizoid, and schizo-typal personality disorders. Individuals with these disorders often appear peculiar and eccentric. Cluster B includes antisocial, borderline, histrionic, and narcissistic personality disorders. Individuals with these disorders often seem dramatic, sentimental, or erratic. Cluster C consists of avoidant, dependent and obsessive-compulsive personality disorders. Individuals with these disorders often show anxiety or fear. This clustering system, although useful in some research settings and educational frameworks, has a number of limitations and has not been accredited in some of the studies (American Psychiatric Association, 2013).

However, DSM-5 moved from the multi-axial system to a new form of assessment that removes the divisions between personality disorders and other psychological disorders. DSM-5 has moved to a documentation of diagnosis without axial designation (formerly Axes I, II, and III), with separate indications for significant psychosocial and contextual factors (formerly Axis IV) and disability (formerly Axis V). The DSM-5 system thus combines the first three axes described in past editions of DSM into one axis with all mental and other medical diagnoses (American Psychiatric Association, 2013).

The APA's alternative dimensional-categorical model for diagnosing personality disorder is included in section III for further study. Although 4 DSM-IV personality disorders were omitted in this section, the new DSM-5 model retained six personality disorder types (Borderline, Obsessive-compulsive, Avoidant, Schizo-typal, Antisocial, Narcissistic) personality disorders. In this thesis, I will focus on patients with borderline personality disorder.

1.3. Theoretical Background

1.3.1. Borderline Personality Disorder

The essential characteristic of BPD is "a pervasive pattern of instability of interpersonal relationship, self-image and affects and marked impulsivity that begins in [adolescence and established by] early adulthood and is present in a variety of contexts". Individuals with BPD make vehement efforts to avoid real or fantasized abandonment. These abandonment fears are associated with an intolerance of being alone and an extreme need to receive support from other people (American Psychiatric Association, 2013, p. 663).

BPD is diagnosed when at least 5 out of 9 following criteria (Table 1) are met:

Table 1: Diagnostic Criteria for Borderline Personality Disorder (American Psychiatric Association, 2013, p. 663)

(1) Frantic efforts to avoid real or imagined abandonment (Note: Do not include suicidal or self-mutilating behaviour covered in Criterion 5);
(2) A pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation;
(3) Identity disturbance: markedly and persistently unstable self-image or sense of self.
(4) Impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating) (Note: Do not include suicidal or self-mutilating behaviour covered in Criterion 5);
(5) Recurrent suicidal behaviour, gestures, or threats, or self-mutilating behaviour;
(6) Affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days);
(7) Chronic feelings of emptiness;
(8) Inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights);
(9) Transient, stress-related paranoid ideation or severe dissociative symptoms.

Borderline personality disorder is a prevailing mental disorder associated with high rates of suicide, extreme functional disturbance, high rates of comorbid mental problems, intensive use of treatment, and high financial and labour costs to society (Leichsenring, Leibing, Kruse, New, & Leweke, 2011). BPD is so prevalent that most clinical

practitioners must treat at least one patient with this disorder. They present with severe problems and intense misery. They are difficult to treat successfully. Some mental health clinicians feel overwhelmed and inadequate in dealing with these patients, and are in search of a treatment that is proven to result in some relief (Linehan, 1993). The prevalence of borderline personality disorder is estimated to be 1.6% of the population but may be as high as 5.9% (American Psychiatric Association, 2013, p. 665). The prevalence of borderline personality disorder is about 6% in primary healthcare settings, about 10% among individuals seeking help in outpatient mental health clinics, and about 20% among psychiatric inpatients (American Psychiatric Association, 2013), and 30% to 60% of patients with personality disorders (Benjamin & Sadock, 2010).

Results from the Australian National Survey of Mental Health and Well-being part-III in 2004 showed that some specific PDs, especially BPD, were more vigorously associated with having one or more Axis-I disorders, greater mental incapability and lost days of total and partial work functioning than having no PD or other PDs. This study also reported a prevalence figure of 0.96% for BPD, but if this figure is combined with the figure of 1.33% for impulsive PD, then the final result is 2.28% (Jackson & Burgess, 2004). BPD is approximately five times more prevalent among first-degree biological relatives of patients than in general population. There is also an increased familial risk for drug use disorders, antisocial personality disorder, and depressive/bipolar disorders. BPD is diagnosed predominantly (about 75%) in women (American Psychiatric Association, 2013). BPD patients usually seek treatment after a suicide attempt or intentional self-mutilation. Such experiences end up in an average annual hospital stay of 6.3 days and one emergency visit every two years (Bender et al., 2001; Zanarini, Frankenburg, Hennen, & Silk, 2004).

For a diagnosis of BPD, any combination of five out of nine DSM criteria are required. This culminates in 151 feasible divergent combinations of criteria for a BPD diagnosis. Such heterogeneity has encouraged researchers to identify core underlying variables that are assumed to be responsible for a broad variety of BPD symptoms (Skodol et al., 2002).

Due to the fact that borderline personality disorder is one of the most common, complex and severe PDs in clinical practice, doing research on its phenomenology and basic psychopathology will lead us to new effective interventions.

1.4. BPD in adolescence[1]

Diagnosis of borderline personality disorders in adolescents has been the subject of much controversy among mental health experts. Findings reveal that signs of BPD usually become apparent in adolescence (Chanen, McCutcheon, Jovev, Jackson, & McGorry, 2007; Gunderson, 2011). A noticeable amount of evidence shows that the diagnostic criteria for BPD (and other PDs) are as reliable, valid and stable before the age of 18 years as they are in adulthood (Chanen et al., 2004; Chanen, Jovev, & Jackson, 2007; Chanen et al., 2007; Westen, Shedler, Durrett, Glass, & Martens, 2003).

Beginning with the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1994), application of the diagnosis of borderline personality disorder (BPD) to youth was permitted (Michonski, Sharp, Steinberg, & Zanarini, 2013). DSM-5 allows for the diagnosis of PDs in adolescence if the symptoms are intense enough to consistently interfere with the person's daily functioning for one year or longer (American Psychiatric Association, 2013, p.647).

[1]Adolescents are individuals who are between childhood and adulthood, in the process of reaching sexual maturity; WHO describes the adolescent age span as the second decade of life, 10-19 years (http://www.who.int), (Sadock, Sadock, Ruiz, & Kaplan, 2009).

There is an extensive body of research in regard with the validity, reliability, prevalence and benefits of the diagnosis of BPD in adolescents which is presented in the following paragraphs.

Chanen et al. (2004) reported that in late teenage outpatients, the 2-year permanence of the global category of PD is high. The research in this area suggests that the BPD is not uncommon in adolescents. It has been argued that it is mainly a disorder of young people, as BPD traits in young people appear to be at least as high, if not remarkably higher, than in adults (Chanen et al., 2007). In community settings, BPD is appraised to affect about 3% of adolescents (Chanen et al., 2007, p.S18). In clinical settings, BPD is more prevalent, ranging from 11% (of outpatients) to 49% (of inpatients) (Chanen et al., 2008). Westen, Shedler, Durrett, Glass, and Martens (2003, p. 952) also argued that "with some exceptions, personality pathology in adolescence resembles that in adults and is diagnosable in adolescents ages 14–18". Chanen et al. (2008) asserted that validity, reliability, and prevalence of the diagnosis of BPD in adolescents resemble that of adults. Adolescents with BPD experience severe and pervasive consequences over their subsequent years. It is clearly evident that character pathology is a significant form of psychological problems in adolescence (Kasen, Cohen, Skodol, Johnson, & Brook, 1999; Levy et al., 1999). Findings of several different studies support the application of borderline PD criteria before age 18 years (Levy et al., 1999; Westen et al., 2003). BPD in adolescence has a parallel structure (Durrett & Westen, 2005), similar phenomenology, origin and prevalence of post early catastrophic experiences compared to adult BPD (Westen & Chang, 2000). Also adequate concurrent validity exists (Chanen et al., 2007; Levy et al., 1999), and comparable stability to adult BPD (Chanen et al., 2004; Crawford, Cohen, & Brook, 2001). Significantly, adolescent BPD patients suffer from high morbidity (Bernstein et al., 1993; Chanen et al., 2007; Johnson et al., 1999; Levy et al.,

1999). Due to the considerable amount of research on the stability (Chanen et al., 2004) and validity (Bernstein et al., 1993; Lewinsohn, Rohde, Seeley, & Klein, 1997; Westen et al., 2003) of a borderline diagnosis in older adolescents, we included adolescents aged 14-18 in this research. Moreover, in exploring schema modes in BPD, an examination of the phenomenology in adolescents target the disorder as it becomes apparent developmentally. In the following sections of this chapter, BPD is described based on the theory of schema therapy. However, first the basic concepts of schema therapy are discussed.

1.5. Schema Therapy

Schema therapy is a creative, integrative therapy founded by Young and colleagues in 1990s, that combines elements from attachment, cognitive-behavioural, gestalt, object relations, constructivist and psychoanalytic approaches into a rich, unifying conceptual and treatment model, and provides a system of psychotherapy that is particularly productive for individuals with chronic psychological disorders who have usually been considered hard to manage (Young et al., 2003, p.1). Schema Therapy significantly expands on (1) conventional cognitive-behavioural therapies and concepts by highlighting psychodynamic elements and exploring the childhood and adolescent causes of psychological problems, (2) emotive techniques, (3) the therapist-patient relationship, and (4) dysfunctional coping styles (Jeffrey & Young, 1999; Young et al., 2003, p.5). The evidence of the effectiveness of the schema therapy for BPD has been provided by randomized control trials (Farrell et al., 2009; Giesen-Bloo et al., 2006) and case studies (Morrison, 2000; Nordahl & Nysaeter, 2005).

Schema therapy and cognitive therapy share as the most fundamental target of treatment the cognitive construct called maladaptive schema (Ball, 1998; Sempértegui, Karreman,

Arntz, & Bekker, 2013). There are four main concepts in Schema Therapy: early maladaptive schemas, coping styles, schema domains and schema modes (Masley et al., 2011; Young et al., 2003), each of which will be explained below.

1.5.1. Schemas and Schema Domains

The word "schema" originates from data processing theory, which states that "information is ordered in our memory thematically" (van Genderen, Rijkeboer, & Arntz, 2012, p. 27; Williams, 1997). The basic assumption is that experiences are kept in our autobiographic memory in the form of schemas from the early years of life (Conway & Pleydell-Pearce, 2000).

Every day, we experience a large number of stimuli from our environment. Even if only chased for half an hour, it would not be almost possible to record everything we sense, feel, or think. To get rid of cognitive overload, we are constrained to form classified structures or frameworks to be able to process all incoming information. Cognitive theory names these frameworks as schemas. Beck described schemas as templates for perceiving, encoding, storing and remembering the information (Beck, Freeman, & Davis, 2004; Lobbestael & Arntz, 2012; Widiger, 2012). Basically, these schemas shape the glasses through which we recognize the pain and happiness of the life. Once formed, people have the inclination to retain their schemas, which is sensible given the fact that humans strive for cognitive consistency. So, once we have a schema, we are motivated to maintain it, and we are likely to store information in such a way that is consistent with our schemas, which will ultimately cause these schemas to produce some overgeneralized meanings (Lobbestael & Arntz, 2012). Schemas are composed of "sensory perceptions, experienced affects and actions, and the meaning given to them, such that primary childhood experiences are maintained and memorized non – verbally" (Michiel Van & Van

Vreeswijk, 2012; Young et al., 2003). For example, growing up in an unloving and rejecting environment in the early years of life will predispose a child to develop schemas in the disconnection and rejection domain, like abandonment or emotional deprivation schemas. In essence, Bowlby's attachment theory, (Bowlby, 1988) which plays an important role in Young's model, would nominate these early insecurities as attachment styles (for example, insecure attachment style). Young et al. (2003) assumes that the schemas result from unfulfilled core emotional needs in childhood. They postulated five core emotional needs for human beings based on the literature and their own clinical observation, but not based on empirically tested studies:

1. Secure affective bonds to others (includes safety and security, emotional stability, nurturance and acceptance).
2. Autonomy, independence, competence, and sense of identity
3. Freedom to state authentic desires and emotions
4. Spontaneity, play, amusement and recreation
5. Realistic standards/restrictions and self-control

The interaction between a child's innate temperament and early environment may eventuate in frustration, rather than gratification, of these basic needs, which will lead to the formation of maladaptive schemas (Young et al., 2003). Temperament is referred to as the biological underpinning of personality and each child has a unique and special temperament from birth. Some children are more aggressive, some are shyer and some are more irritable (Young et al., 2003). Young hypothesised that some of the schemas – especially schemas that evolve early in life as a result of harmful childhood experiences might be contributory to the development of personality pathologies, milder character issues and many chronic Axis I disorders. To explore this idea, he introduced a subset of

schemas that he named "Early Maladaptive Schemas". These schemas are "broad, pervasive themes or patterns, comprised of memories, emotions, cognitions and bodily sensations, regarding oneself and one's relationship with others, developed during childhood or adolescence, elaborated throughout one's lifetime and dysfunctional to a significant degree" (Young et al., 2003, p. 7). Early Maladaptive Schemas fight for survival as a result of a human drive for consistency[2] (Young et al., 2003). Although Young asserted that there are both positive and negative schemas, he did not spell out the adaptive schemas. However, other researchers have defined positive schemas related to worthiness, self-efficacy, optimism, success, trust, and social connectedness (Keyfitz, Lumley, Hennig, & Dozois, 2013). Based on the developmental stages of Erikson (1950), Young argues that "the successful resolution of each stage results in an adaptive schema, whereas the failure to resolve a stage leads to a maladaptive schema" (Young et al., 2003, p.9).

In Young's model, the 18 early maladaptive schemas that be defined are grouped into five broad categories of unmet emotional needs[3] that are called "schema domains" (Table 2).

[2] "An important notion with relevance for psychotherapy is the concept that schemas, many of which are formed in primary stages of life, continue to be elaborated and then prevailed on the individual's later experiences, even when they are no longer relevant or applicable; this is sometimes referred to as the need for 'cognitive consistency', for maintaining a continuous view of oneself and the world, even if it is, in reality incorrect or distorted" (Young et al., 2003).

[3] This list of needs is rooted in both the "theories of others" and "Young and his colleagues' clinical observations" and has not been tested empirically (Young et al., 2003, p.9).

Table 2: Definitions of schema domains (Lobbestael & Arntz, 2012; Young et al., 2003 p.16,17,18,19)

(1) ***Disconnection and Rejection Domain:*** Patients with schemas in this domain have had early experiences that impeded their ability to form secure, satisfying attachments to others. As a result, they have presumptions leading them to believe that their needs for stability, safety, nurturance, love and belonging will not be met. Typically patients have features from the early maladaptive schemas of (a) unstable "Abandonment/Instability", (b) abusive "Mistrust/Abuse", (c) cold "Emotional Deprivation", (d) rejecting "Defectiveness/Shame", or (e) isolated from the outside world "Social Isolation/Alienation".
(2) Impaired Autonomy and Performance: Patients with schemas in this domain have expectations about themselves and the world that interfere with their ability to differentiate themselves from parent figures and function independently. The early maladaptive schemas related to this domain include (a) "Dependence/Incompetence", (b) "Vulnerability to Harm or Illness", (c) "Enmeshment/Undeveloped Self" and (d) "Failure" schemas.
(3) Impaired Limits Domain: Patients in this domain have not developed adequate internal limits in regard to reciprocity or self-discipline. Early maladaptive schemas in this domain include (a) "Entitlement/Grandiosity" and (b) "Insufficient Self-Control/Self-Discipline".
(4) Other-Directedness Domain: The patients in this domain place an excessive emphasis on meeting the needs of others rather than their own needs. They do this in order to gain approval, maintain emotional connection or avoid retaliation. Early maladaptive schemas of this domain include (a) "Subjugation", (b) "Self-Sacrifice" and (c) "Approval-Seeking/Recognition-Seeking".
(5) Over-vigilance and Inhibition Domain: Patients in this domain suppress their spontaneous feelings and impulses. They often strive to meet rigid, internalized rules about their own performance at the expense of happiness, self-expression, relaxation, close relationships or good health. The early maladaptive schemas related to this domain are (a) "Negativity/Pessimism", (b) "Emotional Inhibition", (c) "Unrelenting Standards/Hyper-criticalness" and (d) "Punitiveness".

Now I turn to an examination of the contribution of schemas to BPD.

1.5.2. Schemas and Borderline Personality Disorder

Patients with a personality disorder are inclined to demonstrate specific patterns of behaviour that are overdeveloped and other patterns, which are immature or underdeveloped. These exaggerated strategies and beliefs that have resulted from genetic predispositions and environmental factors might have had survival value in the history of people's lives. Applying these cognitive and behavioural strategies, people had been able to interpret and respond as best they could to the demands of their environment. Beck has

linked all personality disorders except Borderline and Schizo-typal with specific core beliefs (Beck et al., 2004). Beck et al. (2004) also claimed that these two disorders do not show a typical idiosyncratic collection of beliefs and strategies (Beck et al., 2004). Based on early cognitive understandings of BPD, patients with BPD were believed likely to have numerous beliefs that were also characteristic of the other PDs (Beck et al., 2004; Beck & Freeman, 1990). Consistent with Beck's account in 2004, Young et al. (2003, p. 306) mentioned that patients with BPD usually have almost all of the 18 schemas especially "Abandonment, Mistrust/Abuse, Emotional Deprivation, Defensiveness, Insufficient Self-Control, Subjugation, and Punitiveness". Subsequent research with the Personality Beliefs Questionnaire (Bhar, Beck, & Butler, 2012)– a 126-item self-report measure of beliefs linked with 10 personality disorders - confirmed that BPD patients had high scores on almost all of the PBQ scales (Butler, Brown, Beck, & Grisham, 2002) . However, such understandings of BPD also assumed that although individuals with BPD may have beliefs that are comparable to individuals with other PDs, those with BPD may endorse a unique set of beliefs, and that it is this combination that discriminates them from other PDs. Butler et al. (2002) studied BPDs' patterns of endorsement over the 126 items of the PBQ and found that they endorsed specific PBQ items from the PBQ dependent, paranoid, avoidant, and histrionic scales. These 14 PBQ items differentiated patients with BPD from patients with other PDs. After validating these findings in a different sample, an independent scale was developed from the 14 items. BPD patients were seen to score significantly higher on the newly developed PBQ borderline scale than on any other PBQ scale, and finally this scale was joined to the final PBQ (Bhar et al., 2012).

A number of studies have contributed to the assessment of the EMS[4]- BPD[5] relations. A systematic review was done to assess the relationship between early maladaptive schemas and BPD. Chapter two of the thesis is specified to this systematic review. The aim of the review was to synthesize the evidence on the relationship between BPD and schemas. A comprehensive literature search using keywords and subject headings was performed with 9 electronic databases, resulting in 17 studies. These papers underwent methodological quality assessment. Schemas of the disconnection/rejection domain were the most prevalent, endorsed in at least ten studies. Highly endorsed schemas in BPD populations were: Abandonment, Mistrust/Abuse, Social Isolation, Emotional Deprivation and Defectiveness/Shame. The patterns of association between schemas and BPD were examined in clinical, offender, substance using and non-clinical populations (Barazandeh, Kissane, Saeedi, & Gordon, 2016).

It was also found in the review that there is a strong relationship between the severity of personality pathology and the severity and quantity of maladaptive schemas/core beliefs patients have.

In order to explore the underlying factors related to the feelings of disconnection and rejection in BPD patients, Zanarini et al. (2000) applied a semi-structured interview to assess the childhood experiences of abuse and neglect by both parents, reported by 358 BPD inpatients and 109 axis II controls. To quote,

> *"84 percent of borderline patients reported having experienced some type of biparental abuse or neglect before the age of 18; 55% reported a childhood history of biparental abuse; 77% reported a childhood history of biparental neglect. These experiences were also reported by a substantial percentage of Axis II controls; However, borderline patients were significantly more likely*

[4] Early Maladaptive Schemas

[5] Borderline Personality Disorder

> *than axis II controls to report having been verbally, emotionally and physically but not sexually abused by caretakers of both sexes" (Zanarini et al., 2000, p. 264).*

They were also more likely than controls to report having caretakers of both genders reject the validity of their opinions and feelings, fail to provide them with protection, neglect their physical needs, take back from them emotionally, and treat them in an inconsistent manner. Taken together, the results of this study suggest that bi-parental failure may be an important factor in the aetiology of BPD (Zanarini et al., 2000). As a result, it seems justifiable for BPD patients to have a higher endorsement of Disconnection/Rejection schemas. Due to the high rates of abuse in the history of BPD and the high presence of labile and hard to manage temperament, it is more likely for them to develop insecure and vulnerable attachment styles (Fonagy & Bateman, 2008). Beck (1990) also proposed that individuals with BPD believe that they are helpless in a hostile world, without any security, and are thus forced to vacillate between autonomy and dependence without being able to rely on others (Jovev & Jackson, 2004). Research on the childhood history of BPD individuals has shown environmental and temperamental factors which predispose a child to feel disconnected, vulnerable and dependent (Fonagy & Bateman, 2008; Thimm, 2010; Zanarini et al., 2000).

The mediating role of cognitions was studied by Arntz, Dietzel, and Dreessen (1999) who demonstrated that borderline assumptions[6] mediated the relationship between childhood abuse (self-reported sexual abuse and emotional/physical abuse) and BPD psychopathology assessed by SCID-I and II interview. In this study all participants were

[6] As the content of schemas are assumed to be mainly formed by "tacit knowledge", therefore unavailable for direct introspection, it is hypothesized in cognitive theories that important aspects of schemas can be represented in so-called assumptions, which are defined as "verbal circumscriptions of basic beliefs". Some of the assumptions correlated with BPD are; "If others really get to know me, they will find me rejectable and will not be able to love me; and they will leave me." Alternatively, "I can't manage it by myself, I need someone I can fall back on" (Arntz et al., 1999, p. 546).

female and 16 BPD patients were compared to 12 cluster-C patients and to 15 normal controls. Participants scored a brief version of the Personality Disorder Beliefs Questionnaire (PDBQ), with six series of assumptions (20 items for each PD) which were assumed to be specific to avoidant, dependent, obsessive-compulsive, paranoid, histrionic and borderline personality disorders. From the 6 PDBQ subsets, the BPD assumption subscale was the only discriminating subscale in the discriminant analysis; although on initial consideration, paranoid and histrionic assumptions also discriminated BPD patients from cluster C patients, these differences dissipated when the effect of those two PD traits as assessed with SCID-II were covaried out. The subscale of BPD assumptions proved to be the most specific to BPD participants (Cronbach $\alpha = 0.95$).

Thimm (2010), in another similar study, explored the associations between perceived parental caring behaviours, EMS and PD symptoms in a clinical sample (n=108). He used a self-report inventory developed to measure adult's understandings of their parents' rearing style called EMBU[7] (Arrindell, Gerlsma, Vandereycken, Hageman, & Daeseleire, 1998), the DSM-IV and ICD-10 Personality Questionnaire (DIP-Q), (Ottosson, Rodlund, Ekselius, von Knorring, & et al., 1995) and SQ. In general, compatible with the theory of Young et al. (2003), the results of mediational analyses demonstrated that the influences of childhood maltreatment on PD pathology in adulthood are maintained by EMSs (when the effect of depression was controlled). Specifically, the domain Disconnection/Rejection mediates significantly between parental rejection and low maternal emotional warmth and cluster B symptoms. Furthermore, the schema domain of

[7] The Egna Minnen Betrsffande Uppfostran (EMBU) (Perris, Jacobsson, Linndström, von Knorring, & Perris, 1980) is a measure for the assessment of adults perceptions of their parents rearing behaviour.

Impaired Limits was a significant mediator between parental rejection and cluster B symptoms.

In addition to schemas, coping style is another important concept of schema therapy. Now I turn to the definition of coping styles in schema therapy.

1.5.3. Coping Styles

The Early Maladaptive Schemas (EMSs) have two fundamental outcomes: “Schema Healing” and “Schema Perpetuation” (Young et al., 2003, p. 30). Schema Healing is the final aim of schema therapy. Because a maladaptive schema is “a set of memories, emotions, bodily sensations and cognitions” that cause harm, schema healing involves reducing all of these: the strength of the thoughts linked to the schema, the schema’s emotional charge, the intensity of the bodily senses and the dysfunctional cognitions (p.31). Schema healing also embraces behaviour change, as patients learn to change and replace harmful coping systems with functional patterns of behaviour (p. 31). In fact, treatment encompasses cognitive, affective and behavioural interventions. As an EMS heals, it becomes much more difficult to operate. When it is operating, the experience is less painful and the patient recovers more quickly (p.32).

Schema Perpetuation refers to “everything the patient does that keeps the schema going” (p.30). Perpetuation includes “all the thoughts, feelings, and behaviours that lead to reinforcing rather than healing the schema”. Maladaptive schemas are perpetuated through three mechanisms: cognitive distortions, self-defeating life patterns, and schema coping styles (Young et al., 2003, p. 30). Through cognitive distortions, the individual distorts situations in a way that the schema is reinforced and retained; highlighting information that fits with the schema and denying or minimizing information that contradicts the schema. Sometimes individuals engage in self-defeating patterns,

"unconsciously selecting and remaining in situations and relationships that trigger and perpetuate the schema, while ignoring and avoiding the relationships that are likely to cure the schema" (Young et al., 2003, p. 30).

Patients adopt maladaptive coping patterns early in life in order to adjust to schemas, so that they do not have to encounter the intense, painful emotions that schemas usually generate. Schema therapy discriminates between the schema itself and the strategies an individual applies to cope with the schema; different patients apply different coping styles in different situations at different periods of their lives to cope with the same schema. Therefore, in the schema therapy model, the schema itself contains memories, emotions, bodily sensations and cognitions, but not the individual's behavioural reactions. Behaviour is not considered a part of the schema in the schema therapy approach; it is regarded as part of the coping reaction (Young et al., 2003, p.32).

Inspired by the conventional fight, flight or freeze response, Young recognized three distinct coping styles:

(1) Schema overcompensation "acting as though the opposite of the schema were true",

(2) Schema avoidance "avoiding the activation of the schema", and

(3) Schema surrender "giving in to the schema" (Lobbestael & Arntz, 2012).

For example, consider three patients who deal with their defectiveness/shame schemas via different mechanisms. While the three of them feel frustrated, one surrenders to the schema and seeks out rejecting partners and friends, one withdraws from getting close to others, and the third tries to overcompensate and adopts an aloof and superior attitude toward others (Young et al., 2003, p.33). In short term, these coping styles can provide some relief, but in the long run, they lead to troubles in important areas of life (Young et

al., 2003). Using a maladaptive coping style is generally not an effortful and conscious choice, but an unconscious, automatic response to a threatening or troublesome situation (Michiel Van & Van Vreeswijk, 2012). In Figure 1, which follows, the reciprocal relationship between EMSs and Maladaptive Coping Styles (MCS) is portrayed. Symptoms and their associated problems result from this interaction between EMSs and MCSs. In the next section, I will examine how EMSs and MCSs are combined.

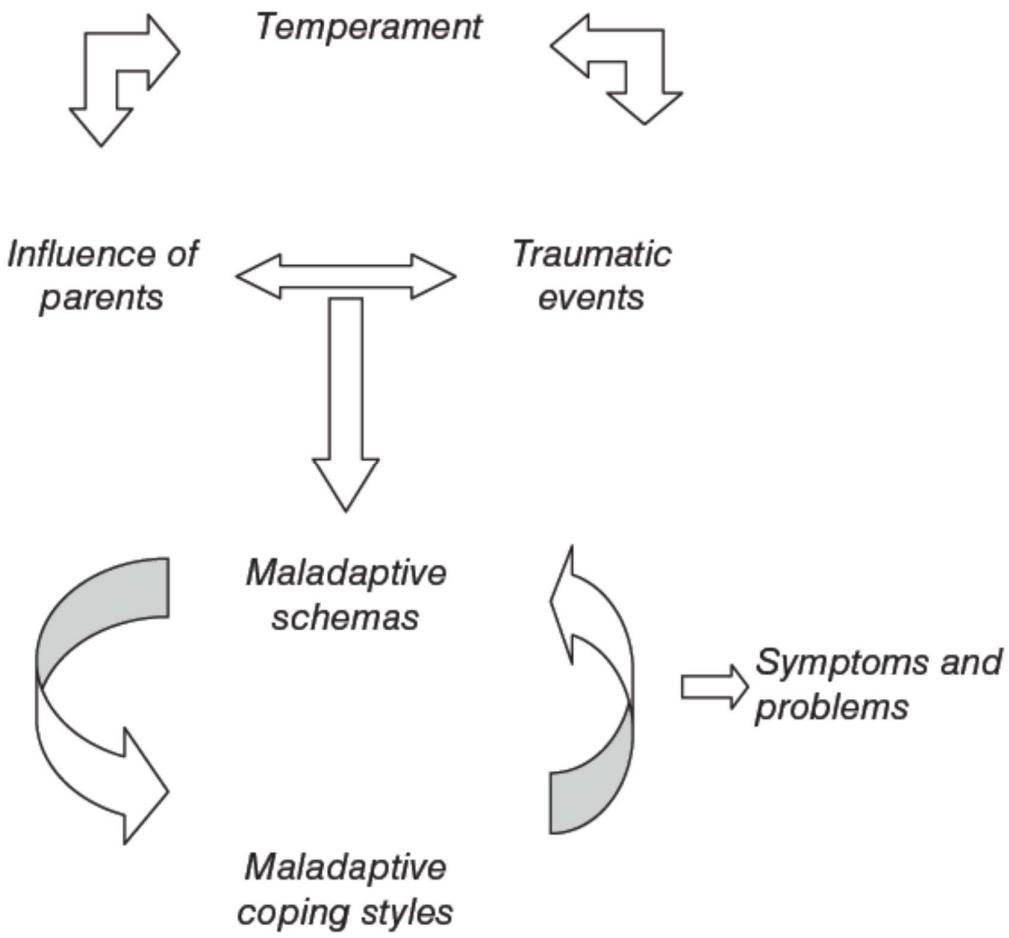

Figure 1: Origins of Maladaptive Schemas (Michiel Van & Van Vreeswijk, 2012, a copy of figure 2.1, p.28).

Having examined early maladaptive schemas within their schema domain and then maladaptive coping styles, let me turn to the way these can be integrated by introduction of the concept of schema modes.

1.5.4. Schema Modes

The concept of schema mode is possibly the most complex part of schema theory to explain as it includes many elements. Schema modes are "moment-to-moment affective states and coping responses - adaptive and maladaptive - that we all experience" (Young et al., 2003, p. 37). Often our schema modes are activated by life circumstances to which we are oversensitive, "our emotional buttons" (Young et al., 2003, p. 37). At any specific moment in time, some of our schema operations (including our schemas and coping reactions) are inactive, whereas others are set into motion by life events and predominate in our current senses and behaviour (Young et al., 2003). The predominant state that individuals are in at a given point in time is called a "schema mode". Young used the term "flip" to refer to the changing of modes. A mode, therefore, answers the question, "At this moment in time, what set of EMSs or schema operations is the patient manifesting?" (Young et al., 2003, p.37).

The concept of modes grew largely out of Young's clinical experience with BPD. When they tried to apply the schema model to these patients, they frequently encountered two problems. First, Young et al. (2003, p. 306) mentioned that "patients with BPD usually have almost all of the 18 EMSs described (especially Abandonment, Mistrust/Abuse, Emotional deprivation, Defensiveness, Insufficient Self-Control, Subjugation, and Punitiveness)". To work with so many EMSs simultaneously using their original schema approach proved challenging and they needed a more practical unit of analysis (Young et al., 2003). Second, in their work with patients with BPD, they (like many other clinicians)

encountered the tendency of these patients to shift rapidly from one intense affective state to another. One moment these patients are enraged, the next moment they are frightened, then fragile, then impulsive to the point at which it became virtually like dealing with different people (Young et al., 2003). EMSs, which are basically traits, did not explain this rapid switching from state to state. They developed the concept of modes to explain the shifting emotional states of the patients with BPD (Young et al., 2003). The patient with BPD switches consistently from mode to mode in response to life events. Young et al. (2003) assert that while healthier patients commonly have fewer and less extreme modes and spend longer periods of time in each one, patients with BPD have a greater number of more intense modes and change modes from moment to moment. Moreover, when a patient with BPD flips into a mode, the other modes seem to disappear. Unlike healthier patients, who can experience different modes simultaneously, so that one mode moderates the strength of the other, patients with BPD who are in one mode seem to have almost no access to the other modes. The modes are nearly completely dissociated (Young et al., 2003, p. 307).

As indicated in the second, sixth and ninth BPD criteria (table1), instability and dissociative experiences are symptoms of borderline patients. The dramatic shifts in emotional and behavioural states shown by BPD patients have confused therapists and researchers for years. This phenomenon is so fundamental to the disorder that the DSM-5 states that the essential characteristic of BPD is “a pervasive pattern of instability of interpersonal relationships, self-image and affects, and marked impulsivity” (American Psychiatric Association, 2013). This phenomenon has been defined through various perspectives in order to explain the essence of shifting states in the borderline disorder.

Psychodynamic theories and transference-focused psychotherapy, which is regarded as psychodynamic in nature, (Zanarini, 2009) have suggested that the primitive defence mechanism of splitting[8], leading to fragmented representations of the self and others, underlies the abrupt shifts. (Arntz, Klokman, & Sieswerda, 2005).

In the theory of cognitive analytic therapy[9] (CAT), Ryle (1997) sees borderline patients in a continuum of dissociation, which is less severe than Dissociative Identity Disorder (DID)[10]. Borderline patients are inclined to "abrupt and discomforting shifts between markedly contrasting states"(Ryle, 1997, p. 82), these experiences and much of the variability explained as typical of the BPDs, are understood in the CAT model to be the influence of shifts between partially dissociated self-states (Ryle, 1997). Borderline patients have a small number of self-states, each of which can be described by its pattern of reciprocal "role procedures[11]" and accompanying mood, behaviour, and symptoms (Ryle, 1997). This pattern of partial dissociation is believed to be on the continuum between "normal mood instability and state-dependent memory on the one hand and the extreme dissociations between sub-personalities" or "alters" seen in dissociated identity disorder on the other (Ryle, 1997, p. 83). Figure 2 illustrates this spectrum.

[8] Clinically, splitting is defined by a tendency to see self or others as all good or all bad. Individuals who frustrate, disappoint or interfere with one's perceived needs and wishes may be categorically seen as bad and evil, whereas individuals who gratify or who are potential sources of needed responses tend to be seen unidimensionally as all good. (Kernberg, 1985)

[9] Cognitive Analytic Therapy (CAT) is an integrative therapy drawing on cognitive-behavioural and psychoanalytical sources (Ryle, 1997)

[10] The defining feature of dissociative identity disorder is the presence of two or more distinct personality states or an experience of possession (American Psychiatric Association, 2013)

[11] Procedures that organize the relationship patterns based on predicting or eliciting the reactions of the other (Ryle, 1997).

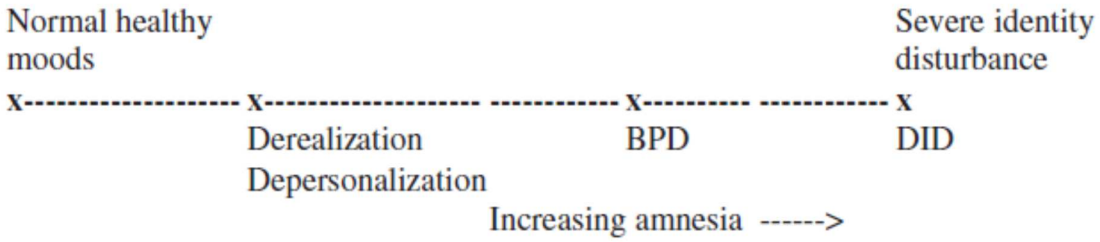

Figure 2: Continuum of dissociation and identity disturbance (Bamber, 2004; Pollock & Llewelyn, 2001, p.55)

In Mentalization-based Therapy[12], disorganized attachment leads to an incoherent self, who is not able to reflect on states of mind in self and others. However, these fragmented and inconsistent representations of self and others may be seen as abrupt changes in the behaviour and feelings of BPD patients (Bateman, Ryle, Fonagy, & Kerr, 2007; Fonagy & Bateman, 2008).

There are two main cognitive-behavioural conceptualizations of BPD, Linehan's dialectical-behavioural view and Beck and Young's schema model (Beck et al., 2004). The dialectical behavioural therapy model indicates that BPD is primarily a disorder of the emotion regulation system. Emotion dysregulation is seen as a result of biological predispositions, which are aggravated by specific environmental experiences such as an invalidating environment (Linehan, 1993).

[12] Bateman and Fonagy developed mentalization-based treatment (MBT) for patients with BPD (Anthony & Bateman, 2004). This treatment aims to increase a patient's curiosity about and skill in identifying his or her feelings and thoughts and those of other people as well. They speculate that this difficulty in mentalization arouse because of difficulty in attachment (Zanarini, 2009).

At first, Beck explained some assumptions of borderline patients. The paradoxical combination of "dependent assumptions" ("the belief of the patient to be weak and incapable, whereas others are strong and capable") and "paranoid assumptions" ("the belief that others cannot be trusted and are malevolent") were thought to increase the unstable and extreme interpersonal behaviour of the patient, altering between clinging to other people and pushing others away out of distrust. Beck also asserted that "dichotomous thinking" contributes to the emotional turmoil and extreme decisions of these patients, as lack of ability to see things in grades of grey leads to the extreme shifts patients with BPD make-up (Beck et al., 2004).

Recently, Young expanded Beck's concepts into a more elaborate model of BPD that might be particularly useful in understanding the dramatic shifts of these patients. To further explain the swinging behaviour of BPD patients, Young's model is based on the idea that borderline patients, triggered by environmental stimuli, often regress into some stiff emotional moments experienced as a child. In such a moment, a schema mode which is "an organized pattern of thinking, feeling and behaving based on a set of schemas, relatively independent from other schema modes" gets activated. Schema modes should be thus understood as "the combination of activated EMSs and a coping strategy with the related coping reactions" (Sempértegui et al., 2013). While healthy people also demonstrate schema modes, but rather in a slight, gradual and cohesive manner, people with BPD can only present one schema mode at the time (Bamber, 2004). BPD patients are assumed to flip abruptly from one mode to the other. As Beck observed, some of these states appear very childish and may be very puzzling for both the patient and other people (Arntz et al., 2005; Beck et al., 2004). In 2003, Young originally proposed the existence of 10 specific modes that can be grouped into four broad categories: (1) Child modes, (2)

Dysfunctional Coping modes, (3) Dysfunctional Parent modes and (4) The Healthy Adult mode (Lobbestael & Arntz, 2012; Young et al., 2003).

Schema modes can be regarded as the most "inventive constructs" of schema therapy (Lobbestael & Arntz, 2012). In fact, modes are not new constructs on a content level, given they represent a mixture of EMSs and coping methods generally occurring together. Their new facet rests in their form. Specially, while EMSs represent trait concepts and continuous presence, modes represent the moment-to-moment state a person finds himself/herself in. The unique aspect about modes is that "they provide an explanation why different, even incompatible states can be seen in one personality disorder" (Lobbestael & Arntz, 2012, p. 332). At every point in time, one mode is believed to be dominant and to determine the emotions, thoughts, and behaviours an individual shows. Every person is assumed to have different schema modes, although modes in a way represent parts of the self; however, they are not divided from each other by amnesic barriers. To put it in another way, an individual is in principle aware at all times what she or he feels in a special mode state. Just as is the case with EMSs, schema modes are assumed to be continuous in nature (Lobbestael & Arntz, 2012). Consequently, more healthy people are assumed to have less intensive dysfunctional modes, while in a patient with a severe personality disorder, activated maladaptive modes are stronger and less controllable. There are also adaptive modes. Adaptive modes predominate in healthy people, while they may only be of low or rare presence in severe personality disorders (Lobbestael & Arntz, 2012). Given the introduction presented in this section there are a few differences between the early maladaptive schema (EMS) concept and the schema mode concept that make the schema mode concept more useful as a target of change in the treatment of BPD patients.

1. The Schema mode concept explains the rapid changes in behaviours and feelings seen in severe personality pathology more comprehensively (Lobbestael, van Vreeswijk, & Arntz, 2007; Young et al., 2003).
2. EMSs and coping strategies are mostly triggered together; therefore, they are blended in the schema mode concept to make the reactions of BPD patients more understandable and manageable for the therapists (Lobbestael et al., 2007).
3. Schema modes explain how some contradictory behaviours like clinging and avoiding are seen at the same time or why contradictory states can be present in one personality disorder (Lobbestael & Arntz, 2012).
4. The large numbers of EMSs that can be seen in borderline personality disorder in addition to three coping strategies make the formulation of the disorder in terms of EMSs hard to grasp for the patient (Young et al., 2003).
5. Schema modes better explain the dissociation between different states of mind in BPD.
6. EMSs reflect mostly the cognitive and emotional contents of the mind while schema modes reflect cognitive, emotional and behavioural systems (Young et al., 2003).
7. EMSs are stable, trait constructs, while modes alter depending on the situation one is in and thus are state concepts (Lobbestael et al., 2007).
8. In schema mode conceptualization and measurement, the healthy and adaptive states of mind are defined and considered as well as maladaptive states.
9. In the schema mode formulation of BPD, different modes are labelled by the client herself with her most familiar descriptive names.
10. The schema mode conceptualization allows the patient and therapist to develop dialogues between different maladaptive modes and adaptive modes; for example,

developing a dialogue between the healthy adult and punitive parent mode (Bamber, 2004).

11. In general, schema therapy based on schema modes is more "practical, flexible, active, directive and user-friendly" for (patient and therapist) (Bamber, 2004, p. 437).

As a result of this introductory review and the consideration of the importance of schema modes in BPD patients, I propose in my study of patients with BPD to examine schema modes. I also examine the relationship between dominant schema modes of BPD patients and dissociation. Now I will examine schema modes in BPD more fully.

1.5.4.1 Schema Mode Problems of Patients with Borderline Personality Disorder

Young believed that "it is not the presence of EMSs that differentiate patients with personality disorders from healthier patients but rather the intense coping styles they employ to deal with these schemas and the modes that crystallize out of these coping strategies"(Young et al., 2003, p. 306). As brought up earlier, the concept of modes grew largely out of Young and his colleagues' clinical experience with patients with BPD (Young et al., 2003). In Schema therapy (Kellogg & Young, 2006), BPD is believed to have a three-factor origin: 1, genetics, biology and temperament; 2, childhood experiences in the family and child's environment; and 3, the interaction between the child's temperament and the parenting style, discipline strategies and behaviours of the caregivers. The proposed genetic and temperamental origins are based on a predisposition for "an emotionally intense, labile temperament" and the family environmental circumstances that may contribute to the development of the disorder are as follows:

1- The family system is "not safe and stable";

2- The family system is "depriving";

3- The family system is “harshly punitive and rejecting”;

4- The family system is “subjugating”.

The four criteria stated are what would be expected to be found in a family environment specified by the lack of care, violence and abuse and a significant number of BPD patients report experiences of sexual, physical and/or emotional abuse (Kellogg & Young, 2006, p. 447).

Young concluded that as a result of the interaction between genetic factors and a family problematic environment, “the inner world of the borderline patient includes several modes, or aspects of self that interact in harmful ways. In this interaction, the patient is living in a kind of inner theatre in which the forces of ruthlessness, rage, surrender and self-numbing each take their turn on the stage. There are three broad groups of modes- Child, Parent and Coping Modes.” Of the several potential modes, there are five modes that prove central to the borderline constellation (Kellogg & Young, 2006, p. 447). Let me describe these in more detail.

1.5.4.2 The Abandoned and Abused Child:

The abandoned/ abused or vulnerable child represents the theme of “fearsome isolation”. In this mode, patients appear “frail and childlike”. They seem “desponded, frantic, fearful, unloved and lost”. They feel “helpless and entirely alone” and are obsessed with finding a parenting figure that will provide caring. This is a “core state of being” for the BPD patient, and it underlines one of the key philosophical bases of this kind of treatment that “the therapist should imagine these patients as functioning as young children at a core emotional level” (Kellogg & Young, 2006, p. 448).

1.5.4.3 The Angry and Impulsive Child:

The angry and impulsive child mode represents a state of the mind in a child who is aware that she/he did not have her desires met and she experienced unfair suffering. The angry child mode shows rage about the maltreatment and unsatisfied emotional needs that primarily shaped her EMSs: the feelings of being abandoned, abused, rejected, deprived, subjugated, and punished unfairly. The resultant rage is frequently deeply annoying to people dealing with these patients; it is typically seen as one of the hardships of treating BPD patients. The further predicament is that in the childhood environment of many BPD patients, the expression of affects, especially anger and desires were prohibited. After the manifestations of the enraged mode, the punitive parent may become operational and punish the vulnerable child. These kinds of display of rage may then be followed by cutting or other forms of self-mutilation as the patient re-enacts the dynamics of the family (Kellogg & Young, 2006).

1.5.4.4 The Punitive Parent Mode:

The function of this mode is to penalize the patient for her wrong actions, such as expressing feelings and emotions. The punitive parent is "the patient's identification with a parent (and others) who depreciated and rejected the patient in childhood". The punitive parent is a highly punitive and becomes a harsh part of the self that penalizes the patient for being "bad". BPD patients, when under the control of this mode, usually characterize themselves as mean and dirty, and may exhibit parasuicidal behaviours such as cutting themselves or other self-harm behaviours. The therapist works to help patients identify this part of themselves as a state or mode, and to give this aspect of the personality an attributive name. BPD patients ultimately learn to question the harsh punishments of this aspect of themselves and to fight back against this tyranny (Kellogg & Young, 2006).

1.5.4.5 The Detached Protector Mode:

Despite the general opinion that patients who have BPD have sensational presentations of “acting out” behaviour and increased levels of emotional intensity, often, they are typically functioning in what is known as the “detached protector mode”, in which the patient adopts a “style of emotional withdrawal, disconnection, isolation, and behavioural avoidance”. In the detached protector mode, patients may have a feeling of being numb or empty. They may adopt “a suspicious or aloof stance to avoid investing emotionally in people or activities”. Behavioural examples include “social withdrawal, excessive self-reliance, fantasizing, and compulsive distraction”. Another complication here is that although the detached protector mode has been helpful in patients’ survival, it interferes with therapeutic progress and maintains the abandoned and abused child blocked off from a therapeutic relationship and connection (Kellogg & Young, 2006, pp. 448-449).

1.5.4.6 The Healthy Adult Mode:

The healthy adult mode is what the BPD patient is mostly missing. This mode serves an “executive” function in regards to the other modes. The healthy adult assists the child’s core emotional needs to be met. The healthy adult mode has three basic roles:

1- Nurtures, accredits and protects the vulnerable child;

2- Sets boundaries for the angry child and impulsive child;

3- Combats or moderates the maladaptive coping and dysfunctional parent modes.

Schema therapy for BPD is assumed to take at least 2 years, because an essential aim is for the patients to start to incorporate aspects of the therapist within themselves as the healthy parent. In this way, patients can finally do for themselves what the therapist is

doing for them in the treatment (Kellogg & Young, 2006, p. 449). I will next consider how schema modes of BPD patients are recognized.

1.5.5. Studies of Schema Modes related to BPD

Identification of schema modes can be done by three methods, by:

1- Distinguishing troublesome circumstances that patients usually experience, and interpreting the emotion and behaviour that they demonstrate in these situations as schema modes;

2- Tracking and finding modes by applying experiential techniques, in which patients are guided to remember their past memories; and

3- The most trustworthy, reliable and consistent method used to identify modes: self-report questionnaires. The first two methods are mostly used in psychotherapy sessions, while the use of questionnaires is appropriate for both therapy and research (Lobbestael, 2012).

In the early stages of measuring Schema Modes, two inventories were applied to recognize them. First, there was the Schema Mode Questionnaire (SMQ) generated by Klokman, Arntz, and Sieswerda (2005). The SMQ consists of 119 items, which determine the presence of seven schema modes: the Abandoned/Abused Child, the Angry Child, the Detached Protector, the Punitive Parent, the Compliant Surrender[13], the Over - Compensator[14], and the Healthy Adult. Each mode has 17 items: "seven items express a thought, five express feelings, and five express behaviour". Lobbestael, van Vreeswijk,

[13] Behaving in a passive submissive manner in order to gain reassurance or to avoid rejection. This pattern ends up in giving others permission to mistreat the individual unfairly and the his/her healthy needs remain unfulfilled (Lobbestael et al., 2007).

[14] Acts in order to fight the schema by adopting a strategy as though the opposite of the schema were true. For example, they try to be perfect (Young et al., 2003).

Arntz, Spinhoven, and Hoen (2005) added the Bully and Attack mode[15] to the SMQ made by Klokman, et al (2005). They believed that this mode would be characteristic of patients with an antisocial personality disorder. The two mentioned studies showed that the connection between the items in the mode scales was good: the Cronbach's alpha values varied in these two studies from $\alpha = 0.80$ to $\alpha = 0.94$, with an average of $\alpha = 0.91$.

The second mode inventory is the Young – Atkinson Mode Inventory (YAMI) that was developed in 2004 by Young, Atkinson, Engels, and Wieishaar (2004). This inventory consists of 186 items measuring the presence of 10 modes: the Impulsive Child, the Demanding Parent, and the Happy Child mode scales are added to the seven mode scales of the SMQ. Another difference from the SMQ is that the Abandoned/Abused Child is labelled the Vulnerable Child in the YAMI, which indicates a wider definition. Furthermore, "the items of the YAMI are not randomized or split into sections regarding thoughts, feelings, and behaviours, but are clustered into modes". The items in the YAMI are measured for frequency using a six - point scale, ranging from "never or almost never" to "all of the time." So far, not enough data are available on the validity or reliability of the YAMI (Michiel Van & Van Vreeswijk, 2012).

The two studies given below used SMQ in order to assess schema modes in personality disorders.

Arntz et al. (2005) examined Young's model of BPD hypothesizing that BPD patients tend to shift from 1 of 4 maladaptive schema modes to another. Young hypothesised that four schema modes are central to BPD: the Abandoned Child mode; the Angry/Impulsive Child mode; the Punitive Parent mode, and the Detached Protector mode. In addition,

[15] Directly harms other people in a controlled and strategic way emotionally, physically, sexually, verbally, or through antisocial or criminal acts (Lobbestael et al., 2007).

there is a Healthy Adult mode, representing the healthy side of the patient, which is of course, given the extreme psychopathology of these patients, not powerful. Arntz et al (2005) used SCID-I and II to assess BPD patients (n=18) and Cluster C personality disorders patients (n=18) and 18 non-patients (all women). The Schema Mode Questionnaire (Arntz et al., 2005) was applied to assess cognitions, feelings and behaviours characteristic of 7 schema modes (The state and trait versions). Results of MANOVA indicated that both trait and state measurements of Schema modes confirmed the assumption that high scores on Detached Protector, Punishing Parent, Angry Child and Abandoned/Abused Child mode subscales specifically describe BPD. Also in accordance with the hypothesis, the BPD group acquired the lowest scores on the Healthy Adult mode. This study adds predictive validity to the psychometric properties of the SMQ measure. Whereas BPD patients might also manifest features of the compliant surrender mode, this mode is not specific to them, as their scores were similar to those of the cluster-C PD patients. Cluster C patients attained significantly higher scores on the state version of the over-compensator mode compared to both other control groups, which may indicate this mode as more characteristic of Cluster C patients. In this study, the Cluster C patients differed significantly from controls on all modes except the Angry Child mode (both in trait and state forms) and over-compensator mode (just trait form). The findings showed a gradual increase in pathological BPD schema mode scores from non-patients, via cluster-C patients, to BPD patients. This showed that the difference between BPD and Cluster C patients was mostly quantitative, rather than qualitative, and questions the specificity of certain schema modes to specific disorders.

In order to measure and analyse the presence of the hypothesized schema modes in patients with BPD, antisocial and non-patient controls, Lobbestael, Arntz, and Sieswerda (2005) selected 16 patients with BPD, 16 patients with antisocial personality disorder

(APD) and 16 non-patient controls (all 50% of both sexes) using SCID-I and II interviews. The Schema Mode Questionnaire (Lobbestael et al., 2005) was used to assess cognitions, feeling and behaviours related to 6 schema modes of the SMQ: The Detached Protector (e.g. 'It is best to detach from other people', 'I feel numb and empty'), the Angry Child (e.g. 'I have to reveal my negative feelings and get rid of them', 'I directly fulfil my needs'), the Abandoned and Abused Child (e.g. 'I am needy and week', 'I look for support and reassurance'), the Punitive Parent (e.g. 'I am evil and deserve punishment', 'I feel guilty') and the Healthy Adult mode (e.g. 'I am worthy of love', 'I feel positive'), and the Bully and Attack mode (e.g. 'Fighting is the best defence', 'I battle others'). The BPD group had significantly higher scores on the four BPD-related schema modes, and significantly lower scores on the Healthy Adult mode in comparison to the APD and the control group. The modes of the Detached Protector, the Angry Child, the Abandoned and Abused Child and the Punitive parent are actually, as anticipated, characteristic of BPD patients and also, but in a lower degree, of APD patients. The Bully and Attack mode was shown to be specific for the APD group, but the difference between APD and BPD did not reach significance. The Healthy Adult mode held a low presence in BPD patients, while the APD patients reported this mode to be as high as the non-patients. In this study, participants were also interviewed to review abusive sexual, physical and emotional events before the age of 18; the frequency and severity of three forms of abuse - emotional, sexual and physical - were equally high in both BPD and APD groups, and significantly higher than in the non-clinical group.

As the SMQ and YAMI questionnaires assess a small number of schema modes and the information regarding the reliability and validity of the questionnaire have been limited, Young and colleagues published the Schema Mode Inventory in 2007 (Young, Arntz, & Atkinson, 2007). The SMI was, in particular, an expansion of SMQ and the YAMI,

containing all items of them except a few items. The SMI comprised of items based on recommendations made by Beck, Freeman, and Davis (2004) and Young and colleagues (2003) and on clinical observation (Lobbestael, 2012). Originally, the SMI consisted of 269 items, measuring 16 modes. Acquiring data using this questionnaire was time-consuming. Therefore, Lobbestael, van Vreeswijk, Spinhoven, Schouten, and Arntz (2010) constructed the short form of SMI (Schema Mode Questionnaire, 118 items) out of the long SMI (269 items). The new questionnaire measured 14 Schema modes. This was done in a sample of 863 participants: non-patients (n=319), patients with axis I (n=136), patients with axis II (n=236). Results confirmed that the presence of all dysfunctional modes escalated significantly from non-patient controls, to Axis I patients, to Axis II patients, and declined comparably for healthy modes. The findings of this study showed that both axis I and axis II psychopathology had a contribution in explanation of the variance of most of the modes. The influence of axis II pathology on the explained variance of modes was strongest. These data underline the assumption that schema modes are mainly associated with PDs. Results supported a 14-factor structure of the short form of SMI, with adequate internal consistencies of the subscales (Cronbach α's from .79 to .96), sufficient test-retest reliability and medium construct validity. This inventory measures the presence of 14 schema modes (table 3), (3 modes in addition to Young's initial proposal of 10 schema modes, and the Over-compensator mode was divided into the Self-Aggrandizer and the Bully and Attack mode) (Lobbestael et al., 2010).

Lobbestael, Van Vreswijk, and Arntz (2008) examined the relationship between personality disorders and the 14 schema modes assessed by SMI (Young et al, 2007). It was the first study to empirically assess the association between schema modes and PDs in a large sample of different PDs. As indicated, the SMI scales consist of 14 Schema Modes: Vulnerable Child, Angry Child, Enraged Child, Impulsive Child, Undisciplined

Child, Happy Child, Compliant Surrender, Detached Protector, Detached Self-Soother, Self-Aggrandizer, Bully and Attack, Punitive Parent, Demanding Parent and Healthy Adult modes. The sample consisted of 489 participants (Axis I n=127, Axis II n= 240, 'not otherwise specified' n=23, normal people n=99). Almost 61% of the sample were female. The diagnosis of different disorders was examined by means of the Structured Clinical Interview for DSM-IV axis I and axis II disorders (SCID I and SCID II) or the Structural Interview for DSM-IV Personality Disorders (SIDP-IV). Kendall's partial tau coefficient was used to control for each PD–mode association for all the other PD scores. The results of this study showed unique mode profiles for all PDs and confirmed most of the assumed PD–mode associations, supporting the construct validity of the mode model. The borderline PD group correlated with the highest (9 modes) number of maladaptive modes ($P<0.001$). Borderline PD displayed an association with 5 Child modes including the Vulnerable Child, the Impulsive Child, the Angry Child, the Enraged Child, the Undisciplined Child and one parental mode - the Punitive Parent, and 3 coping modes: the Detached Protector, the Detached Self-Soother, and the Compliant Surrender modes. Borderline PD was negatively associated with the two healthy modes (Happy Child and Healthy Adult Modes) ($P<0.001$).

Table 3: Common emotions experienced in different schema modes adapted from Khalily, Wota, and Hallahan (2011, p. 77)

Mode Domains	Modes	Description of emotions
Child	Happy	Feels loved, content, connected, validated, satisfied, fulfilled, protected, accepted, praised, worthwhile, nurtured, understood, self-confident, competent, safe, resilient, strong, in control, adaptable, optimistic and spontaneous.
	Vulnerable Child	Feels the strong emotional pain and fear of abandonment, which has a direct link with the abuse history. Because the most essential emotional needs are unmet, emptiness and loneliness have developed. The feelings of immense emotional pain and fear of being abandoned are closely linked with the child's abusive past (Michiel Van & Van Vreeswijk, 2012). Feelings of social isolation, distress, being misunderstood, defective, deprived, overwhelmed, self-doubt, incompetent, needy, helpless, fear, anxiety, victimization and exclusion, unloved, abandoned, fragile, and pessimistic are also frequent (Michiel Van & Van Vreeswijk, 2012).
	Angry Child	Strong feelings of anger and frustration with impatience, as the basic emotional (or physical) needs are not being met.
	Enraged Child	Experiences intense feelings of anger and impulsivity that may end up in damaging and hurting objects or other people.
	Impulsive Child	Acts on incidental desires or impulses from moment to moment in a selfish or uncontrolled manner to get their own way and often have problems delaying short-term gratification.
	Undisciplined Child	Individuals may also appear "spoiled" and fail to complete everyday tasks and get quickly frustrated and soon give up.
	Compliant Surrender	Acts in a passive, subservient, reassurance-seeking, or self-deprecating way around others due to fear of conflict or rejection, can passively allow him/herself to be mistreated and continue this self-defeating schema-driven pattern.
	Detached Protector	Cuts off needs and feelings, withdraws psychologically from the overwhelming pain of the schemas by emotionally detaching from people and often rejects their help. Can feel withdrawn, numb, empty, distracted, depersonalized, bored and pursues distracting, self-stimulating activities in a compulsive way or to

Maladaptive Coping		excess. May adopt a cynical or pessimistic stance to avoid people or activities.
	Detached Self-soother	Shut off emotions by engaging in activities that will somehow soothe, stimulate or distract them from feelings. These behaviours are usually undertaken in an addictive or compulsive way, which include workaholism, gambling, involvement in dangerous sports, overeating, fantasizing, playing computer games, promiscuity, and alcohol/drug abuse.
	Self-Aggrandizer	Feels and behaves in an excessively grandiose, entitled, competitive, aggressive, dominant, arrogant, haughty, abusive, condescending, devaluing, over-controlled, manipulative, exploitive, attention-seeking or status-seeking way. These feelings or behaviours originally developed to compensate for unmet core needs. They are almost utterly self-absorbed and show little empathy for other's needs and feelings.
	Bully and attack	Directly harms other people in a strategic and sadistic manner emotionally, physically, sexually, or verbally. The motivation may be to overcompensate or prevent abuse or humiliation.
Maladaptive Parent	Punitive	Thinks oneself or others deserve punishment or scolding and often acts on these emotions by being blaming, criticizing, unforgiving, or being abusive towards self (eg. Self-harm) or others.
	Demanding	Feels one should strive for high standards, perfection, avoids time wasting and expressing one's offhand feelings, admires discipline, and believes one should struggle for high status, be humble and put other's needs before one's own.
Healthy Adult	Healthy Adult	Nurtures and validates the abandoned child mode. Sets limit for the angry and impulsive child modes and promotes and supports the healthy child mode. Battles and ultimately replaces the dysfunctional coping modes and moderates the maladaptive parent modes. Performs adaptive adult functions such as working, parenting, taking responsibility, and pursues gratifying adult activities such as sex, intellectual and cultural interests, health promoting and athletic activities.

Finally, another study modified the last versions of SMI to investigate schema modes of cluster-C, paranoid, histrionic and narcissistic personality disorders. The newly introduced SMI-2 (174 items) assesses 18 schema modes, and is different from the SMI

in that two modes (the Happy Child and Bully and Attack) were removed and seven modes (Lonely Child, Abandoned/Abused Child, Dependent Child, Avoiding Protector, Approval/Recognition- Seeking, Perfectionist Over- Controller, and Suspicious Over-Controller) were added and was successful in discriminating patients and controls. The sample consisted of 323 patients with a main diagnosis on one of the PDs mentioned – cluster-C, paranoid, histrionic and/or narcissistic PD and 121 non-patients. (Bamelis, Renner, Heidkamp, & Arntz, 2011; Michiel Van & Van Vreeswijk, 2012)

In conclusion, the summary of the studies about the association of BPD and schema modes is provided in Table 4. The specific schema modes in BPD were only traced in 4 studies, listed below Table 4.

Table 4: Identification of Schema Modes in Studies of Patients with BPD

1-Lonely Child	
2- Abandoned and Abused Child (Vulnerable Child)	1,2,3,4
3- Dependent Child	
4- Angry Child	1,2,3,4
5- Enraged Child	3,4
6- Impulsive Child	3,4
7- Undisciplined Child	3,4
8- Happy Child	3,4 (negative correlations)
9- Compliant Surrender	3,4
10- Detached Protector	1,2,3,4
11- Detached Self-Soother	3,4
12- Angry Protector	
13- Self-Aggrandiser	
14- Perfectionist Over Controller	
15- Suspicious Over Controller	
16- Bully and Attack	
17- Conning and Manipulative	
18- Predator	
19- Attention and Approval Seeker	
20- Punitive Parent	1,2,3,4
21-Demanding Parent	4
22-Healthy Adult Mode	1,2,3,4 (negative correlation)

All the relationships are significant at least ($P<.05$)

1-(Arntz et al., 2005)

2-(Lobbestael et al., 2005)

3-(Lobbestael et al., 2008)

4-(Lobbestael & Arntz, 2012)

1.6. Schema Mode Changes and Dissociation Symptoms in Borderline Patients

1.6.1. Dissociation and Borderline Personality Disorder

In a broad sense, dissociation refers to the separation of mental and experimental matters or contents that would naturally be connected. Dissociation is often mentally defensive, protecting against overwhelming emotions and memories; however, it can be an unconscious, automatic and organismic response to an emergent danger (Howell, 2005). The term dissociation refers to a grouping of mental states which involve absence, expanding from minor experiences including day dreams to severe experiences found in dissociative identity disorder (Kennerley, 1996). Some degree of dissociation has no detrimental effect or can be efficacious; for instance, dissociation permits unconscious behaviour – automatic driving is more beneficial – and dissociation warrants the isolation of a traumatic event until the person is able to cope with it – the numbness in the primary stages of grief, or derealisation during an injurious incident. However, victims of trauma can experience dissociation in an intense, overwhelming and demoralizing form involving amnesia, flashbacks, depersonalization or out-of-body experience (Kennerley, 1996).

Dissociative symptoms can potentially disrupt every realm of psychological functioning. They are experienced as (a) uninvited intrusions into awareness and behaviour, with concomitant losses of consistency in subjective experience (i.e, “positive” dissociative symptoms such as fragmentation or disintegration of identity, depersonalization, and derealisation) and/or (b) losing the ability to access information or to monitor mental functions that normally are readily under control and accessible (i.e, “negative”

dissociative symptoms, such as amnesia). The dissociative disorders are often seen after a trauma. Many of the symptoms, such as shamefacedness, bewilderment or embarrassment, are impacted by the proximity to the trauma……. (American Psychiatric Association, 2013, p.291).

Pathological dissociation has been reported and described in articles on BPD since the diagnostic term was introduced (Korzekwa, Dell, Links, Thabane, & Fougere, 2009). In 1994, "transient, stress-related . . . severe dissociative symptoms" was added to the diagnostic criteria for BPD in the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1994). In fact, the most significant revision made in DSM-IV and continued to DSM-5 in the diagnosis of BPD was the addition of a ninth criterion, "transient, stress-related severe dissociative symptoms or paranoid ideation" (American Psychiatric Association, 2013, p. 663). Empirical evidence indicates that dissociative symptoms and paranoid ideation are the most prevalent of a range of cognitive/perceptual symptoms in BPD; they occur in almost 75% of borderline patients and have excellent specificity, i.e., rarely occur in other diagnostic groups. (Skodol et al., 2002). Thus, the presence of dissociative symptoms distinguishes BPD from other PDs (Wildgoose, Waller, Clarke, & Reid, 2000). Research has constantly shown that dissociation is significantly higher in BPD than in normal controls, those with other personality disorders and general psychiatric patients (Barnow et al., 2012; Herman, Perry, & Van der Kolk, 1989; Ross, 2007; Simeon, Nelson, Elias, Greenberg, & Hollander, 2003; Zanarini, Ruser, Frankenburg, Hennen, & Gunderson, 2000).

1.6.2. Schema Mode Changes and Dissociative States in Borderline patients

As Young (2003) argued, the dysfunctional schema modes in BPD are essentially "facets of the self that have not been integrated into a cohesive personality structure" and

therefore function in a dissociated manner (Johnston et al., 2009, p. 249). It is the "constant movement between these dysfunctional modes that are responsible for the pattern of instability in affect, self-image, interpersonal relations and poor impulse control that characterize BPD" (Johnston et al., 2009, p. 249). In studying adults, Johnston et al. (2009) assessed the relationship between prior childhood trauma, dysfunctional schema modes and dissociation in BPD. The sample contained 27 female and 3 male adults, and the study used a structural interview diagnosis of BPD (BPD items of SCID-II, n=30). Other measures were: Childhood Trauma Questionnaire (CTQ), Wessex Dissociation Scale (WDS) and only BPD modes of Schema Mode Questionnaire (trait version) (SMQ) (Arntz et al., 2005). Pearson's correlations indicated significant relationships between dissociation and Detached Protector, Punitive Parent, Angry and Impulsive Child and Abandoned/Abused Child. The results demonstrated that the 'Angry and Impulsive Child' and 'Abandoned and Abused Child' modes accounted significantly for 52% of the dissociation variance and uniquely predicted dissociation scores. Thus in BPD patients, reported dissociative experiences can be associated with the dissociative division of the personality into maladaptive schema modes, and in particular the presence of parts associated with maladaptive child modes (Johnston et al., 2009).

In regard to the activation of the dissociated state and detached protector mode, Arntz et al. (2005) studied whether BPD-specific emotional stress specifically increases the detached protector mode. In order to test this hypothesis, participants subsequently watched a neutral and an emotional movie section related to the borderline patient's specific dominant affects. After showing each movie, participants again completed the state version of schema mode questionnaire. The stress induction produced negative emotions in all groups, but the BPD group was unique in that the Detached Protector

mode (theoretically the most usual reaction for BPD patients to distress) increased significantly more than what was observed in both control groups.

Lobbestael and Arntz (2010), Lobbestael, Arntz, Cima, and Chakhssi (2009) and Lobbestael and Arntz (2012) have studied the impact of induced emotion in schema mode change in borderline patients. All of these studies applied the same sample and the same abbreviated version of the SMI questionnaire (42-item) (Young et al., 2007), which assesses 14 schema modes (Three items for each mode).

Lobbestael and Arntz (2010) measured the emotional reactivity of BPD (n=45) and APD (n=21), cluster C patients (n=46) and non-clinical participants (n=35) to abuse-related stress (on a direct and indirect level). Following confrontation with a film section regarding abuse, alterations in affect and schema modes, psychophysiology and implicit abuse-related self-images were assessed in the participants. Findings showed that there was a significant escalation of the maladaptive modes and a significant decline of adaptive modes after watching the film fragment in the BPD group. Group differences indicated that the BPD group showed a stronger rise in maladaptive modes than the other groups, but the group differences in adaptive modes were not significant. This study highlighted the hyper-responsivity of BPD participants for negative affect (self-reported) and schema modes, some physiological indexes and non-directly expressed cognitive associations. An intriguing finding was that BPD-patients were the only group that showed a significant escalation in maladaptive schema modes. This finding is compatible with that of Arntz et al. (2005) who also found that watching a similar abuse-related film section uniquely caused the Detached Protector mode to elevate in the BPD group.

Another study by Lobbestael et al. (2009) on the same sample evaluated the effect of anger inciting on mode switch and found that the anger-related schema modes

significantly escalated in BPD group, and in Cluster C group, but significantly lowered in APD group. Thus, this study supported Young's hypothesis (Young et al., 2003) that mode changes are especially conspicuous and prominent in the BPD population. (Lobbestael & Arntz, 2010).

One further study (Lobbestael & Arntz, 2012) using the same sample assessed the impact of autobiographical anger recollection on schema mode changes. In this study, alteration in self-reported schema modes was measured after anger induction in all groups. At baseline, the BPD group had significantly higher scores on all 12 maladaptive modes and significantly lower scores on the adaptive modes compared to overall means. The cluster C-PD-group had completely similar baseline schema mode scores to that of the BPD-group. Non-patients demonstrated a totally opposite pattern; significantly lower baseline scores on all maladaptive modes and significantly higher scores on the adaptive modes. After remembering and verbalizing a conflict from the past with an aggressor to a level of intensely experienced emotions of rage, BPD schema mode change was significant in the Angry Child and Detached Self-Soother modes ($p < .05$). The Antisocial group showed a significant decrease in Healthy Adult and Impulsive Child modes, while the changes in cluster C and non-patients were not conspicuous.

In conclusion, the studies demonstrated that BPD patients are one of the most vulnerable patient groups to shift in the intensity of schema modes especially in stressful or anger provoking situations.

1.7. Summary

Chapter 1 includes an overview of the research project and an explanation of the aims of the study, and the hypotheses are stated. In this section, understanding of the cognitive, emotive and behavioural constructs in BPD in adolescents and young adults is considered

as a primary focus of the study. Schema therapy is introduced as a theory that has been successful in defining and measuring such constructs and also in the treatment of BPD. As the development of the definition of BPD are discussed in Chapter 3, this Chapter includes the standard definition of BPD given in the latest edition of DSM. Studies concerning the validity, reliability of the BPD diagnosis in adolescents are also reported. The fundamental concepts of schema therapy approach and studies conducted in this field in relation to BPD are extensively discussed.

Chapter 2. Systematic Review

2.1. A systematic review of the relationship between early maladaptive schemas and borderline personality disorder/traits

As mentioned in the previous chapter, a definition of schema mode was introduced by schema therapists when they encountered extreme instability and shifts in the mental states of borderline patients. Schema therapists applied the mode concept in the treatment of borderline patients as it helped them to recognize the dissociation between different states of the mind and the intense and sudden switches between these states. According to Young (Young et al., 2003, p. 37), a schema mode is "those schemas or schema operations – adaptive or maladaptive – that are currently active for an individual." A schema mode consists of a number of schemas in combination with a coping style. Thus, schemas are major components of schema modes namely the cognitive-emotional contents. In order to acquire a sound understanding of the BPD phenomenon in terms of schema modes, we found it useful to explore the schemas which are the most dominant in the borderline patient's mind and investigate the relationship between schemas and BPD in the relevant literature.

The following systematic review is presented in this chapter to explore the dominant schemas reported in the literature that establish the core cognitive emotional contents of the mind in borderline PD patients.

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A systematic review of the relationship between early maladaptive schemas and borderline personality disorder/traits

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ABSTRACT

Borderline personality disorder (BPD) is a common mental disorder in clinical practice. Research on its phenomenology and psychopathology is still limited. Cognitive structures called schemas prove useful, both in conceptualizing a case and in implementing change strategies. The aim of this review was to synthesize the evidence on the relationship between BPD and schemas. A comprehensive literature search using keywords and subject headings was performed with 9 electronic databases, resulting in 17 studies. These papers underwent methodological quality assessment. Schemas of the disconnection/rejection domain were the most prevalent, endorsed in at least ten studies. Highly endorsed schemas in BPD populations were: abandonment, mistrust/abuse, social isolation, emotional deprivation and defectiveness/shame. The patterns of association between schemas and BPD were examined in clinical, offender, substance using and non-clinical populations.

1. Introduction

Borderline personality disorder (BPD) is a common mental disorder linked with high rates of self-harm, severe functional impairment, comorbid mental disorders, intensive use of treatment, and high costs to society. (Bender et al., 2001; Leichsenring et al., 2011; Oldham, 2006; Skodol, Gunderson, Shea, & Mcglashan, 2005; Skodol et al., 2002). The median prevalence of BPD is estimated to be 1.6% but may be as high as 5.6% (American Psychiatric Association, 2013). BPD is present in about 15 to 20% of patients in outpatient clinics and psychiatric hospitals (Gunderson, 2011). The essential feature of BPD is "a pervasive pattern of instability of interpersonal relationship, self-image and affects and marked impulsivity" that begins in adolescence, is established by early adulthood and is present in a variety of contexts (American Psychiatric Association, 2013, p. 663). While four DSM-IV personality disorders were omitted in the alternative DSM-5 model for personality disorders, BPD was one of the six personality disorders that were retained (American Psychiatric Association, 2013). Because BPD is common and challenging to treat, research on its phenomenology and psychopathology can lead to improved interventions.

Individuals with a personality disorder demonstrate some patterns of behaviour that are overdeveloped and others that are underdeveloped. These exaggerated behaviours and underlying structures have resulted from both genetic predisposition and environmental influences (Beck et al., 2004). Human beings have a fundamental tendency to maintain familiar patterns of thinking and behaving in order to increase the chances of predictability and thus reduce anxiety. The motivation to seek familiarity and maintain a stable view of oneself and the world has been called the "cognitive consistency principle" (Reeves and Taylor, 2007; Rudman, 2004; Young et al., 2003).

Our desire for consistency leads each person to use long-lasting cognitive structures for processing information — these have been called "schemas" (Young et al., 2003). The concept of schema has a long history in psychology. This term, which can be traced to Piaget, has been used to explain those structures that integrate and attach meaning to events (Beck et al., 2004). Piaget (1952) described "schema" as the way that the structure of the internal world has built up through processes of assimilation of ideas, and then modification as needed into consistent cognitions that formed the basic cognitive system of the person. These structures help us to interpret every stimulus and maintain cognitive consistency. The idea is that experiences are stored in our autobiographic memory by way of "schemas" formed in the early years of life (Conway & Pleydell-Pearce, 2000). Every day, we encounter a large number of stimuli from our environment. Even if only pursued for an hour, it would be almost impossible to list everything we see, hear, smell, feel, or think. To avoid cognitive overload, we are forced to form

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organizational frameworks to be able to process the vast amount of incoming information. Cognitive theory refers to these frameworks as schemas.

Beck defined schemas as "templates for perception, encoding, storage and retrieval of information" (Beck et al., 2004; Lobbestael and Arntz, 2012). These schemas form the lenses through which we look at the world. Once formed, people have the tendency to retain their schemas, which is logical given that people strive for consistency in life. So, once we have a schema, we are likely to process information in such a way that it fits with our schemas, which can eventually cause these schemas to overgeneralize (Lobbestael and Arntz, 2012). Schemas thus consist of "sensory perceptions, experienced emotions and actions, and the meaning given to them, such that early childhood experiences are memorized non-verbally" (Michiel Van and Van Vreeswijk, 2012, p. 28).

Apart from cognitive theorists, other disciplines have developed similar concepts. Thus, attachment theory emphasizes the crucial role played by internal working models as directors of emotions and behaviours (Caligor et al., 2007; Rholes and Simpson, 2006) and cognitive neuroscience views these constructs as "associational neural networks" (Caligor et al., 2007; Westen and Gabbard, 2002). In psychodynamic object relations theory, psychological functions are organized by internalized relationship patterns that have been labelled as "internal object relations" (Caligor et al., 2007). Alford and Beck (1998) recommend that the schema concept can provide a common language to facilitate the utilization of certain psychotherapeutic approaches.

Beck introduced a hierarchical model of cognition. Guiding common surface cognitions, he emphasized a middle level of conditional cognitive ideas as core beliefs. At a deeper level of cognitive constructs, unconditional and unconscious schemas organize thought and behaviour (Kriston et al., 2012). Beck strove to define specific cognitive core beliefs for all personality disorders, but failed to do so for Borderline and Schizotypal conditions. Beck et al. (2004) claimed that these two disorders do not show a typical idiosyncratic set of beliefs. According to early cognitive conceptualizations of BPD, individuals endorsed numerous beliefs that overlapped with and contained certain characteristic of the other PDs (1990). When investigators began to examine schemas in patients with BPD, they found that almost all of the named schemas were found in BPD (Young et al., 2003).

To illustrate this conundrum, research with the Personality Beliefs Questionnaire (PBQ) (Bhar et al., 2012) – a 126-item self-report measure of beliefs associated across 10 personality disorders – confirmed that BPD patients scored highly on almost all of the PBQ scales (Butler et al., 2002). However, such conceptualizations of BPD hypothesized that, although individuals with BPD may have beliefs that are similar to individuals with other PDs, those with BPD will endorse a unique combination of beliefs, and that it is this combination that differentiates them from other PDs. Butler et al. (2002) examined BPDs' patterns of endorsement across the 126 items of the PBQ, and found certain items from the PBQ dependent, paranoid, avoidant, and histrionic scales that discriminated BPD patients from patients with other PDs. After cross-validating these findings in a different sample, an independent scale was constructed from relevant items. BPD patients scored significantly higher on this newly developed PBQ borderline scale than on any other PBQ subscale, and ultimately this scale was added to the final PBQ (Bhar et al., 2012).Young hypothesized that some of the schemas – especially schemas that develop primarily as a result of toxic childhood experiences – might be at the core of personality disorders, milder characterological problems and many chronic Axis I disorders. To explore this idea, he defined a subset of schemas that he labelled Early Maladaptive Schemas. These schemas are "broad, pervasive themes or patterns, comprised of memories, emotions, cognitions and bodily sensations, regarding oneself and one's relationship with others, developed during childhood or adolescence, elaborated throughout one's lifetime and dysfunctional to a significant degree". (Young et al., 2003, p. 7). He asserts that schemas are different from core beliefs as they incorporate more unconscious and emotional memories and they involve different brain systems for processing this information. These patterns can produce intense bodily sensations and affections without conscious awareness (Young et al., 2003). Within Young's model, the 18 early maladaptive schemas are named and can be grouped into five broad categories of unmet emotional needs that are called "schema domains". These domains have been called 1) Disconnection & Rejection, 2) Impaired Autonomy, 3) Impaired limits, 4) Other-directedness and 5) Over-vigilance (See Table 1.). The schema domains were defined based on unmet core emotional needs in childhood. The definition of needs is rooted in both the "Theories of others" and "Young and his colleagues' clinical observations" but has not been tested empirically (Young et al., 2003, p. 9). As many studies in schema research have applied schema domains based on Young's categorization, we will also review their results based on the same categorization. Studies that statistically explored the higher order structure of schemas have resulted in inconsistent findings and future studies are needed that include theoretical models and clinical experience of practitioners. (Kriston et al., 2012).

Although early maladaptive schemas are clearly associated with BPD, there is still controversy around which schemas are seen in this population or which are more prevalent. The aim of this study is to conduct a systematic review of the current evidence to explore what schemas have been found to be associated with BPD. The patterns of relationship between schemas and BPD were examined in clinical, offender, substance using and non-clinical populations.

2. Methods

This review followed The PRISMA Statement: Preferred Reporting Items for Systematic Reviews and Meta Analyses (Moher et al., 2015). We searched Embase, CINAHL, Cochrane Library, Informit, OVID Medline, PsychINFO, PubMed, Scopus and Web of Science on October 1st, 2014. The following search terms were applied, utilising truncations [*] to increase search sensitivity, in combination with the Boolean operator 'AND': (Schema* OR Belief* OR EMS*) AND ("borderline personality disorder*" OR "borderline trait*" OR "borderline organization" OR BPD).

The inclusion criteria were: 1) Journal articles and published dissertations reporting the relationship between beliefs or schemas and borderline personality disorder/traits. 2) English papers were included in this study.

Exclusion criteria were 1) Studies measuring beliefs or other constructs that are not explicitly related to Young's Early Maladaptive Schemas. 2) Case reports, book chapters, qualitative studies, conference proceedings, theoretical papers or reviews.

Two reviewers assessed studies for the inclusion/exclusion criteria. Studies were first screened by title and abstract, and then the full text for eligible studies was sourced. The reviewers then shared their conclusions on the information provided. The quality of the methodology used in each study was assessed by these two reviewers. Methodological quality appraisal was completed with the Standard Quality Assessment Criteria for Evaluating Primary Research Papers (Kmet et al., 2004), which has been an effective tool for quality appraisal of observational studies (Kmet et al., 2004; Robinson et al., 2015). It consists of 14 criteria to assess quality. For each criterion, a score of 2 was endorsed for fully meeting the criterion; 1 and 0 for partially and not meeting the criterion. The methodological quality score was calculated for each paper by summing the total score of all relevant criteria and dividing by the total possible score (Kmet et al., 2004). Critical appraisal assessments provide analytical evaluations of the study characteristics, in particular the methods used to minimise biases in any research. This information is valuable for consumers of research to ascertain that the methodology and the results are reliable and can be applied in other environments such as policy, education and clinical practice (Katrak et al., 2004). The method of quality appraisal used in this study has been cited by more than 100 papers in Google Scholar.

3. Results

An initial search of databases resulted in 1248 articles. Fig. 1 shows the study selection process. After duplication removal, 1115 publications remained. Screening at title and abstract level led to 72 articles. After assessing for eligibility criteria, 23 publications remained. From these final publications, 5 studies were excluded as they studied beliefs not schemas. "Although closely related and often used interchangeably, beliefs markedly differ from schemas. While schemas are overarching knowledge representations that are present in everyone and mainly consist of tacit knowledge inaccessible for direct inspection, beliefs represent lower level parts of a schema that can be represented in words" (Lobbestael and Arntz, 2012, p. 326). Personality Belief questionnaires measure beliefs associated with PDs while schema questionnaires measure broader concepts not necessarily related to PDs. Finally, a total of 17 studies were included in this systematic review.

As it is shown in Tables 2 and 3, the schemas of the disconnection/rejection schema domain were the most prevalent schemas endorsed in at least ten studies. The most highly endorsed schemas in BPD population were as follows: Abandonment (in 13 studies), Mistrust/Abuse (in 12 studies), Social Isolation (in 11 studies) and Emotional Deprivation and Defectiveness/Shame (in 10 studies). The numbers included studies in which schemas were measured as domains and studies in which schemas were measured more specifically. Some studies reported a correlational relationship between schemas and borderline features; other studies reported the result of regression analysis that specified the role of schemas in predicting borderline characteristics. Table 2 provides an overview of these studies. In the column called "highly endorsed schemas in BPD" the schemas specified as a result of regression analysis or reported as "highly endorsed schemas" or "schemas appeared with higher levels of significance" in the study are indicated.

In the studies reviewed here, five Schema measures have been used: YSQ-Long Form (205-item) (Schmidt et al., 1995), different editions of YSQ-Short Form (75-item) (Young, 1998), YSQ-L3 (232-item) (Young & Brown, 2003a), YSQ-S3 (90-item) (Young, 2005), and EMSQ-R (75-item) (Ball and Young, 1999). These questionnaires measure 15 schemas, except for the YSQ-S3, which measures 18 schemas. We only include the 15 main schemas in Table 3, as just two studies used the YSQ-S3, and its extra schemas add little additional information.

Table 1
Definitions of schema domains (Lobbestael and Arntz, 2012; Young et al., 2003).

(1) *Disconnection and Rejection Domain*: Patients with schemas in this domain have had early experiences that impeded their ability to form secure, satisfying attachment to others. As a result, they have presumptions leading them to believe that their needs for stability, safety, nurturance, love and belonging will not be met. Typically patients have features from the schema domain of unstable "Abandonment/Instability", abusive "Mistrust/Abuse", cold "Emotional Deprivation", rejecting "Defectiveness/Shame", or isolated from the outside world "Social Isolation/Alienation".
(2) *Impaired Autonomy and Performance*: Patients with schemas in this domain have expectations about themselves and the world that interfere with their ability to differentiate themselves from parent figures and function independently. The schemas related to this domain include "Dependence/Incompetence", "Vulnerability to Harm or Illness", "Enmeshment/Undeveloped Self" and "Failure" schemas.
(3) *Impaired Limits Domain*: Patients in this domain have not developed adequate internal limits in regard to reciprocity or self-discipline. Schemas of this domain include "Entitlement/Grandiosity" and "Insufficient Self-Control/Self-Discipline".
(4) *Other-Directedness Domain*: The patients in this domain place an excessive emphasis on meeting the needs of others rather than their own needs. They do this in order to gain approval, maintain emotional connection or avoid retaliation. Schemas of this domain include "Subjugation", "Self-Sacrifice" and "Approval-Seeking/Recognition-Seeking".
(5) *Over-vigilance and Inhibition Domain*: Patients in this domain suppress their spontaneous feelings and impulses. They often strive to meet rigid, internalized rules about their own performance at the expense of happiness, self-expression, relaxation, close relationships or good health. The schemas related to this domain are "Negativity/Pessimism", "Emotional Inhibition", "Unrelenting Standards/Hyper-criticalness" and "Punitiveness"

3.1. Clinical populations

Eight studies had subjects from a clinical population. As can be seen in Table 2, the sample sizes of all studies reporting on clinical populations ranged from 27 to 145. The mean age of participants ranged from 19 to 39 years. All except two studies included subjects of both genders. To establish the diagnosis of BPD, seven studies utilized sound semi-structured interviews named SCID-II or SIDP. For assessment of axis I disorders, SCID-I was utilized in six studies. The analysis strategy used in these studies was analysis of variance in 5 studies, while regression analysis was also used in two studies.

All schemas except enmeshment were related to BPD symptoms in at least two studies, and schemas of the disconnection/rejection domain

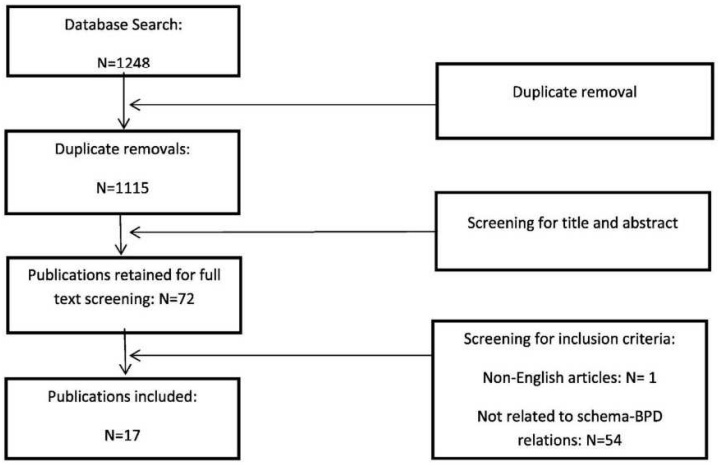

Fig. 1. Flow chart of study selection process.

Table 2
Characteristics of the reviewed studies.

Population		Publication	Participant groups	Number of participants	Gender of participants	Mean age of participants	Materials
Clinical population	1	Nilsson et al. (2010)	Bipolar outpatients, borderline outpatients, student controls	85 Bipolar group: 25, BPD group: 31, student controls: 29	Female	Bipolar group: 32 (±7.40), BPD group: 33 (±8.84)	YSQ-S3 (90-item) (Young, 2005) SCID-II Interview (First, 1997)
	2	Lawrence et al. (2011)	Sub-syndromal (4 BPD criteria) or full syndrome BPD group and control group	BPD: 30 Control: 28	Female/male	BPD females: 18.56 (±3.45), BPD males: 19.33 (±1.53), Control females: 19.16 (±3), control males 19.22, (±2.92)	SCID I/P interview, the BPD module of SCID-II interview (First, 1997), YSQ-S2(75- item) (Young & Brown, 2003b)
	3	Nordahl et al. (2005)	Patients with and without personality disorders	Psychiatric outpatients: 104	Female/male	37.7 (±10.7), range: 19–68	SCID I interview (First, Spitzer, Gibbon, & Williams, 1995a), SCID II interview, YSQ 2nd edition(205-item) (Young and Brown, 1994b)
	4	Mayo (2005)	Depressed women with and without BPD	BPD and MDD: 12 Controls with MDD: 15	Female	33 (±10.8)	SCID I interview, BPD module of SCID II interview, EMSQ-R[a] (75- item)(Ball and Young, 1994)
	5	Simeon et al. (2003)	BPD group and healthy group	BPD = 20, healthy control: 24	Female/male	BPD group: 37 (±12.6), healthy control group: 35.3 (±11.7)	SCID I interview, SIDP[b] interview (Pfohl et al., 1997), Schema Questionnaire (205-item) (Schmidt et al., 1995)
	6	Jovev and Jackson (2004)	Three personality disorder groups: BPD, obsessive- compulsive and avoidant	BPD = 13, obsessive–compulsive: 13 Avoidant: 22	Female/male	38.81 (±10.79)	SCID I and SCID II interview, Schema Questionnaire-short form (75-item) (Young, 1998)
	7	Hulbert et al. (2011)	Two groups of outpatients: BPD group with at least 3 BPD criteria, patients with major depressive disorder	BPD group: 30, MDD group: 30	Female/male	BPD group: 19.42 (±2.55), MDD group: 19.88 (±2.84)	SCID I and SCID II interview (First, 1997), Young Schema Questionnaire (205-item) (Young & Brown, 1994b)
	8	Thimm (2011)	A group of outpatients	145 outpatients (107 women and 38 men)	Female/male	39 (±11.9)	DIP-Q questionnaire[g](Ottosson et al., 1995), Schema Questionnaire – short form (75-item) (Young, 1999)
Offender population	9	Gilbert and Daffern (2013)	A group of offenders	87 offenders (78 male and 9 female)	Female/male	33.4 (±10.7) range: 19–64	SCID II interview (First, 1997), Young Schema Questionnaire- Short Form, version 3 (90-items) (Young, 2005)
	10	Loper (2003)	A group of incarcerated women screened for at least one personality disorder	116	Female	32.81 (±8.92)	SCID-II screening questionnaire (First, et al., 1995b), EMSQ-R (75-item) (Ball and Young, 1999)
	11	Specht et al. (2009)	A group of incarcerated women	105	Female	33.9 (±8.5)	SCID-II interview (First, 1997), Schema Questionnaire-short form (75-item) (Young & Brown, 1994a)
Substance using population	12	Shorey et al. (2014)	A sample of men seeking substance abuse treatment	98	Male	38.89 (±10.60)	PDQ-4 questionnaire[h] (Hyler et al., 1988), Young Schema Questionnaire (YSQ-L3), (232-item), (Young & Brown, 2003a)
	13	Ball and Cecero (2001)	A sample of outpatients who met diagnostic criteria for borderline or antisocial or avoidant or depressive PD	41, men (46%), women (54%)	Female/male	37.4 (±5.9)	SCID-II interview, Young Schema Questionnaire (205-item)
Non-clinical population	14	Meyer et al. (2001)	A group of undergraduate students	61	Female	20 (±0.7) range: 18–22	BSI questionnaire[i] (Conte et al., 1980), Young schema questionnaire-Short Form (75-item) (Young, 1998)
	15	Carr and Francis (2010)	University based non-clinical population	178 (60 males and 118 females)	Female/male	27.18 (±10.58)	PDQ-4 questionnaire, Young Schema Questionnaire-Short Form (75-item) (Young & Brown, 2003b)
	16	Reeves and Taylor (2007)	A group of university students	804 (405 men, 399 women)	Female/male	19.9 (±1.44)	SCID-II-Q questionnaire,[j] Young Schema Questionnaire-short form (75-item) (Young, 1998)
	17	Schmidt (1994)	A group of undergraduate students	1100	Female/male	…	PDQ-R questionnaire (Hyler and Rieder, 1987), Schema Questionnaire (205-item unpublished at 1992) (Schmidt et al., 1992)

[a] Early Maladaptive Schemas Questionnaire-Research.
[b] Structured Interview for DSM-IV Personality Disorders.
[c] The schemas included in this domain are dependency, enmeshment, vulnerability and incompetence (Schmidt, 1994).
[d] The schemas included in this domain include unrelenting standards and self-sacrifice (Schmidt, 1994).
[e] Major Depressive Disorder.
[f] The significant difference found for the entitlement schema was due to the lower scores of the entitlement in MDD group (Hulbert et al., 2011).
[g] DSM-IV and ICD-10 Personality Questionnaire.
[h] Personality Disorder Questionnaire-4.
[i] Borderline Syndrome Index.
[j] Structured Clinical Interview for DSM-IV Personality Questionnaire (First, 1997).

Table 2 (*continued*)

Population	Analysis	Schema domains	Schemas (in order of higher to lower correlations)	Highly endorsed schemas in BPD	Quality rating
Clinical population	1-way analysis of covariance	…	All 18 schemas in comparison to control (P = 0.000). All schemas except failure to achieve, enmeshment, self-sacrifice and entitlement in comparison to bipolar patients (P = 0.000)		0.75
	Analysis of variance	…	Abandonment, mistrust/abuse, defectiveness/shame, failure, social isolation, subjugation, emotional deprivation, insufficient self-control, vulnerability to harm, dependence/incompetence, emotional inhibition. (P = 0.003)	Abandonment, mistrust/abuse (endorsed by BPD patients at clinically significant level)	0.79
	Bivariate correlations	…	Abandonment, defectiveness/shame, social isolation, vulnerability to harm (P < 0.001). Emotional deprivation, dependent/incompetent, mistrust/abuse (P < 0.003)	Abandonment, defectiveness/shame, social isolation, vulnerability to harm (approached significance at P < 0.001)	0.75
	Wilcoxon-Mann–Witney U test	…	Abandonment, defectiveness/shame, insufficient self-control (P = 0.05), emotional deprivation, social isolation (P = 0.1)	Abandonment, defectiveness/shame, insufficient self-control (approached significance at P < 0.05)	0.54
	Analysis of covariance, Regression analysis	Disconnection, over-connection[c] and exaggerated standards[d] (P < 0.001)	…	Disconnection Schema domain (result of regression analysis)	0.83
	Multivariate analysis of variance	…	In comparison to obsessive–compulsive group, BPD group had higher scores on Abandonment, dependence/incompetence and subjugation (P < 0.01). Comparing to Avoidant group, BPD group had higher score on dependence/incompetence (P < 0.05)	…	0.75
	T test	….	Compared to MDD[e] group, BPD group had high scores on Mistrust/abuse and entitlement[f] (P < 0.01).	…	0.87
	Hierarchical regression analysis	…	Mistrust/abuse (P < 0.001)	Mistrust/abuse (result of regression analysis)	0.70
Offender population	Correlation, regression analysis	Disconnection/rejection, impaired limits (P < 0.05) (regression analysis before controlling for ASPD)	Mistrust/abuse, insufficient self-control, social isolation, negativity dependence/incompetence (P < 0.001)	Disconnection/rejection schema domain (result of regression analysis after control for ASPD)	0.87
	Multivariate regression analyses	Disconnection/rejection and impaired limits (P < 0.01)		Disconnection/rejection, impaired limits schema domains (result of regression analysis)	0.75
	Correlation, regression analyses	All schema domains: disconnection/rejection, impaired autonomy, other-directedness impaired limits, over-vigilance/inhibition (p < 0.05)	…	Disconnection/rejection and impaired limits (P < 0.01) (result of regression analysis before controlling the effect of ASPD). Disconnection/rejection after control for ASPD.	0.87
Substance using population	Correlation, T test, regression analyses	All schema domains: over-vigilance/inhibition, disconnection/rejection, impaired autonomy, impaired limits, other-directedness (P < 0.001)	…	Over-vigilance and inhibition and impaired autonomy (result of regression analysis)	0.83
	Correlation	…	Mistrust abuse, abandonment (P < 0.05)		0.75
Non-clinical population	Bivariate correlation	…	Social isolation, defectiveness/shame, emotional deprivation, vulnerability to harm, mistrust/abuse, abandonment, subjugation, emotional inhibition, failure to achieve, dependence/incompetence, insufficient self-control, enmeshment, (P = 0.01)	…	0.72
	Hierarchical multiple regressions	…	…	…	0.77
	Hierarchical multiple regressions		Abandonment and social isolation (P = 0.000) And a negative association with enmeshment (P = 0.001)	Abandonment and social isolation (approached significance at P < 0/000)	0.95
	Correlation	…	Insufficient self-control ("P" is not reported)	…	0.54

were related to BPD at least in five studies. In a closer look at these selected studies, when the BPD group was compared to a healthy control group, higher endorsement of most of the early maladaptive schemas approached the level of statistical significance (Lawrence et al., 2011; Nilsson et al., 2010; Simeon et al., 2003). In studies in which the schemas of BPD group were compared with axis I or axis II disordered patients (Jovev and Jackson, 2004), more specific schemas appeared as significant with a dominant presence of disconnection/rejection schemas (Hulbert et al., 2011; Mayo, 2005; Nordahl et al., 2005; Thimm, 2011).

For example, in studies by Nilsson et al. (2010) and Simeon et al. (2003), all schema domains were significantly elevated in BPD groups in comparison to healthy controls. The study by Lawrence et al. (2011) showed that 11 out of 15 schemas were significantly higher in the BPD than the control groups.

In studies by Nordahl et al. (2005) and Mayo (2005) in which the schemas of the BPD group were compared with other axis I disorders without PD, the schemas of disconnection/rejection domain and dependence/incompetence, vulnerability to harm and insufficient self-control were highlighted. In the studies by Hulbert et al. (2011), in which BPD was compared with Major Depressive Disorder (MDD), and in the Thimm (2011) study, that was conducted in a cohort of psychiatric outpatients with a diagnosis of axis I disorders, the schema which was significantly elevated in BPD was mistrust/abuse.

In the Jovev and Jackson (2004) study that compared schemas of BPD patients with other axis II PDs, more specific schemas were found, for instance, schemas of abandonment, dependence/incompetence and subjugation were significantly higher in BPD compared to Obsessive Compulsive Personality Disorder (OCPD). When compared to avoidant PD, only the dependence/incompetence schema was highly elevated in BPD patients.

3.2. Offender populations

Three studies that looked at offender populations explored the relationship between schemas and BPD. Almost three-quarters of the participants of these studies were women and the number of participants ranged from 87 to 116. The mean age of the samples was 33 years. The SCID-II interview was used for diagnosis of BPD in two studies, while Axis-I disorders were not considered in most of the studies. The analysis strategy of all the studies was regression analysis. Specht et al. (2009) included the depression scores of their subjects in their analysis. Schemas of the disconnection and rejection domain were endorsed in all three studies. A schema related to the "impaired limit" domain, labelled "insufficient self-control", was also reported in all three studies, and dependence/incompetence was endorsed in two studies. Thus, schemas related to unmet basic needs such as safety, security nurturance and love are a core aspect of BPD in offenders who have experienced severe early abuse and trauma (Gilbert and Daffern, 2013; Loper, 2003). The impaired limits domain – an important schema domain in offender populations (Loper, 2003; Specht et al., 2009) – was associated with antisocial and violent behaviour (Loper, 2003). Considering the significant correlation between borderline and antisocial personalities especially in offender populations, studies by Gilbert and Daffern (2013) and Specht et al. (2009) controlled for ASPD traits in the final regression analysis, and found that only the disconnection and rejection schema domain remained significant.

3.3. Substance-using populations

In two studies of substance using populations, only 13.6% of the samples were women. The number of participants in each study ranged from 41 to 98, with a mean age of 38 years. In one study, the SCID-II interview and, in another study, the PDQ-4 questionnaire was applied for the diagnosis of BPD. There was no report on axis I assessment in these studies. The method of data analysis was correlation and regression was also used in one of the studies.

The schemas of abandonment and mistrust/abuse were endorsed in substance users with BPD. As shown in Table 2, Shorey et al. (2014) used a completely male sample, where all five schema domains were associated with BPD symptoms. Moreover, participants meeting the threshold for ASPD and BPD scored higher on all five schema domains than individuals without Antisocial Personality Disorder (ASPD). After controlling for the effect of antisocial traits, shared variance among other schema domains, age and substance use, the domains of impaired autonomy and over-vigilance remained significantly associated with BPD. Many of the studies done on BPD have consisted of samples of women — these indicate a strong relationship between BPD and the disconnection and rejection domain. Schemas of male substance users with BPD features may differ from those seen in women (Shorey et al., 2014).

3.4. Non-clinical populations

Four studies examined the relationship between schemas and borderline features in the samples largely consisting of university students with mean age of 22 years. The gender composition of the samples consists of both female and male subjects in three studies and the number of participants ranged from 61 to 1100. The method of BPD diagnosis was questionnaire-based in all studies. Two studies used correlations and the two other applied regressions for data analysis.

Schemas of abandonment, social isolation and insufficient self-control were endorsed in two studies. In one study (Carr and Francis, 2010) BPD was not associated with any schemas, which might be explained by controlling for comorbid axis I and other PD symptoms. Substantial comorbidity with axis I and II disorders is the norm in BPD (Jovev and Jackson, 2004).

4. Discussion

The results illustrated in Table 3 show that schemas of abandonment, mistrust/abuse, social isolation, emotional deprivation, defectiveness/shame, dependence/incompetence and insufficient self-control were respectively the most prevalent schemas in BPD. Schemas reflecting themes of emotional disconnection and rejection are strongly endorsed in BPD groups. The disconnection/rejection domain reflects structures that may contribute to long standing mental dysfunction. They reflect ideas that one is not "worthy of love and desirable to others" and not "connected to other people in a stable and trusting manner" (Loper, 2003). How does this come about? By comparing borderline patients with other personality disordered individuals, BPD patients were significantly more likely to report having been verbally, emotionally and physically abused by caretakers of both sexes" (Zanarini et al., 2000).They were also significantly more likely to report having caretakers of both sexes deny the validity of their thoughts and feelings, fail to provide them with needed protection, neglect their physical care, withdraw from them emotionally, and treat them in an unstable manner. Taken together, such experiences of bi-parental failure may be important in the aetiology of BPD (Zanarini et al., 2000). Due to high rates of abuse in patients' past histories and the high presence of labile temperaments, it is more likely for them to develop insecure and vulnerable attachment styles (Fonagy and Bateman, 2008). The most disturbing facet of BPD is the inclination to recreate negative experience within the other person by externalization of the image of a depriving/abusing figure, which has been internalized by the traumatized victim as an alien part of the self. An extreme need for this other person can be overwhelming and addictive and, at the same time, aversive and destructive due to negative projections (Bateman et al., 2007). Patients with schemas in the disconnection and rejection domain are often most psychologically-injured (Young et al., 2003).

Table 3
Summary of findings on the association between borderline personality disorder and early maladaptive schemas.

Schema domains	Schemas	Studies																	Number of endorsement
		Clinical population								Offenders			Addicted			Non-clinical			
		1	2[a]	3	4	5[b]	6	7	8	9	10	11	12	13	14	15	16	17	
Disconnection and rejection	1-Emotional deprivation																		10
	2-Abandonment																		13
	3-Mistrust/abuse																		12
	4-Social isolation																		11
	5-Defectiveness/shame																		10
Impaired autonomy and performance	6-Failure																		4
	7-Dependence/incompetence																		8
	8-Vulnerability to harm and illness																		6
	9-Enmeshment																		4
Other-directedness	10-Subjugation																		7
	11-Self sacrifice																		4
Over vigilance and inhibition	12-Emotional inhibition																		5
	13-Unrelenting standards																		3
Impaired limits	14-Entitlement																		5
	15-Insufficient self control																		8

The dark colour indicates highly endorsed schema or schema domain in the study.
The blank spaces between schemas in the table illustrate the domain endorsement in the studies that did not specify schemas.

The high endorsement of disconnection/rejection schemas might explain the intense relationship problems in BPD patients. Disturbances in self and interpersonal functions constitute the core of all personality psychopathology (American Psychiatric Association, 2013); however, the "unstable relationships" symptom is a unique feature that strongly distinguishes BPD from other mental disorders (Sanislow et al., 2002; Stanley and Siever, 2010). Gunderson reported that two relational criteria, "avoidance of abandonment" and "changing relationships" differentiated borderline from other personality disorders, since symptoms reflect both interpersonal and intrapersonal problems which are specific to BPD. (Gunderson, 2007; Stanley and Siever, 2010).

In addition to a toxic early environment, there are specific neurobiological systems, for instance neuropeptides (such as the opioids and oxytocin) that mediate affiliative and interpersonal relations, and which make children genetically hypersensitive to interpersonal interactions. Dysfunctional regulation of peptides may specifically contribute to the problematic affiliative behaviours by increasing the stress of separation, rendering the maintenance of self-esteem and sense of well-being; and by decreasing the capacity to trust and respond appropriately to others. All of these lead to self-destructive behaviours that may provide short-term relief from affective pain (Gunderson, 2011; Stanley and Siever, 2010). Therefore, neurohormones might mediate the intense fear of rejection and abandonment and other patterns that characterize BPD (Gunderson, 2011). A temperament with high distress-proneness in infancy creates vulnerability, which under circumstances of dysfunctional care, may develop into ambivalent/disorganized attachment and later BPD (Gunderson and Lyons-Ruth, 2008).

The dependence/incompetence schema shows the theme that "I do not feel capable of getting by on my own in every day life" (Jovev and Jackson, 2004). Their wellbeing is experienced as dependent on the availability of significant others (Stanley and Siever, 2010). Depending on others might reflect the insecure anxious attachment style frequently seen in BPD (Fonagy, 2000), which characterizes the adoption of hyper-activating and proximity-seeking strategies. The high anxiety experienced by patients with BPD might be caused by core beliefs that their basic needs for safety and security will not be met (Loper, 2003; Rholes and Simpson, 2006). The insufficient self-control schema reflects lack of emotional control and anger dysregulation associated with BPD (Loper, 2003). This schema also reflects the traits of impulsivity, risk taking and hostility, which characterize BPD in the new hybrid dimensional model of DSM V (American Psychiatric Association, 2013).

The finding that almost all of the schemas were related to BPD in at least two studies in clinical populations compared to healthy participants is consistent with Beck and Young's assertion that borderline patients can have schemas related to all forms of personality disorders (Beck et al., 2004; Young et al., 2003). The heterogeneity of the BPD construct might underpin this (Lawrence et al., 2011). This has also led to the development of the schema mode concept in which a set of schemas and processes is grouped into one category. Under the influence of one dominant mode at a time, BPD patients usually experience the corresponding sets of thoughts and feelings (Arntz and Van Genderen, 2011). However, the dominance of the disconnection/rejection schema domain in BPD, as seen in Table 3, supports the idea that toxic family environments, which impede the child's basic needs for secure attachment might be a key factor in the development of BPD. The results also emphasize the importance of administering the Young Schema Questionnaire (YSQ) in clinical populations with impartiality and without preconceived ideas about which schemas might be present (Lawrence et al., 2011).

In order to increase the reliability of diagnosis, the DSM system ensures that most of the diagnostic criteria are based on observable behaviours. This approach has some limitations because the same behaviours can have very different functions and meaning, depending on the underlying psychological structures (Clarkin et al., 2007). Angry outbursts, for example, may contribute to a fear of abandonment in BPD. These same surface behaviours may in fact reflect the controlling attitudes of a paranoid individual or the entitlement of a narcissistically grandiose individual. The schemas thus make a substantial contribution to our deeper understanding of the core components that form the BPD organisation of personality.

As offenders are a population characterized by unlawful behaviours, any borderline traits will usually coexist with antisocial traits in this population. Not surprisingly, offenders highly endorsed the impaired limits domain, especially insufficient self-control. After removing the effect of comorbid antisocial symptoms, borderline offenders were characterized by schemas in disconnection/rejection domains, consistent with findings in clinical populations. Intervention plans that emphasize identification and modifications of belief structures related to both borderline and antisocial personality symptoms may be beneficial in reducing the offending behavioural patterns of this population (Loper, 2003).

The fact that substance abusers with BPD traits endorsed higher scores in early maladaptive schemas underscores the relevance of these schemas to the development and treatment of substance use. Some people using substances might suffer from the enduring ways of viewing themselves and interacting with the world that needs to be targeted in their interventions. Feelings related to abandonment and abuse might be key therapeutic targets in substance users to avoid substances being taken as a distracting or self-soothing factor. MacLean (1990) asserted that substance use and drug addiction are attempts to replace opiates or endogenous factors normally provided by social attachments (Insel, 2003).

Six studies looking at clinical populations included a report on the comorbidity of axis I disorders; however, they mostly omitted control groups (Hulbert et al., 2011; Jovev and Jackson, 2004; Lawrence et al., 2011; Mayo, 2005; Nordahl et al., 2005; Simeon et al., 2003). Three studies did include a control group comprised of one specific axis I disorder. Two of these compared MDD patients with BPD patients (without controlling for the MDD in BPD group) and found more endorsement of the schemas related to the disconnection/rejection in BPD group (Hulbert et al., 2011; Mayo, 2005). In one study in which BPD patients were compared with bipolar patients, BPD patients were characterized by significantly higher mean scores on 14 out of 18 schemas (Nilsson et al., 2010). Specht et al. (2009) also examined the extent to which comorbid depression and ASPD influenced the schema–BPD relations in offender populations. Their finding suggests that depression accounts for a portion of the shared variance between BPD and the disconnection/rejection schema, while ASPD symptoms account for a portion of the shared variance between BPD and the impaired limits schema domain.

Two non-clinical studies investigated the influence of Axis II comorbidity on schema–BPD relations. Reeves and Taylor (2007) found three schemas related to BPD (abandonment, social isolation and enmeshment) after controlling for the symptoms of other PDs within the same cluster. In contrast, Carr and Francis (2010) found no significant association between BPD and schemas, after statistically controlling for other PDs (both intra and inter cluster), depression, anxiety and eating disorders in a nonclinical population. This finding indicates that excluding the effect of comorbid disorders may create a highly atypical sample, as comorbidity is the norm in BPD (Lawrence et al., 2011). Future research could certainly explore and control for the comorbidity of additional personality disorders.

At the surface level, the strength of association reported in the studies reviewed here seemed not affected by the length of the schema questionnaires, as reports of strong associations were evident irrespective of the use of long or short forms of schema questionnaires. In effect, however, most of the studies utilized short forms of schema questionnaires, necessitating further research to fully assess the impact of the length of questionnaire.

The reliability and validity of five forms of schema questionnaires were reported in seven studies. There were reports of high reliability (α ranges from 0.58 to 0.96) and good validity for both short and long forms of SQ. Loper (2003) indicated that two sub-scales of the EMSQ-R questionnaire evidenced poor internal reliability. These sub-scales

are the 'Other-directedness' with an alpha of 0.35 and 'Over vigilance/Inhibition' with an alpha of 0.49.

In all of the studies reviewed here, the assessments of the patients were done before treatment began or in the earlier stages of the treatment. Whether treatment can have influence on the schema endorsement is not clear in these studies and could be the subject of future research. Six studies included in this review, investigated schemas in just one gender, mostly female, limiting generalizability to men. Another limitation was the use of different schema questionnaires ranging from 75 to 232 questions. Although many were developed by Young and his colleagues, and the overall pattern of schemas was the same across questionnaires, they differed in the number of schemas measured and the number of questions asked. Non-clinical participants were university-based, which might not be representative of the larger community. All studies were cross-sectional which does not indicate any causal relationship. Longitudinal designs are needed to determine whether schemas precede the onset of BPD symptoms. The strength of this study was the use of systematic search strategies, which led to a good number of papers. The studies reviewed here were largely heterogeneous as they used five forms of schema questionnaires and different population groups. This made it difficult to compare the effect sizes of associations reported in these studies. Uniform methodology will be crucial in future research to address this.

For BPD patients, interventions in many respects parallel child development. The patient begins as a very young child and, under the influence of the therapist–patient relationship, gradually evolves into a healthy adult. Psychotherapy is regarded the primary treatment for BPD (American Psychiatric Association, 2004; Gunderson, 2011; Zanarini, 2009). To improve treatments for BPD, we need to better understand the specific psychological mechanisms that characterize the disorder (Scott et al., 2009). The findings of this review demonstrate that early maladaptive schemas are associated with the presence of personality disorder/traits, providing clear therapeutic targets. As schemas reflect information related to relationship patterns, the findings of this review could be useful for clinicians with different psychotherapeutic approaches. Further research needs to examine schemas in relation to schema domains and schema modes. Furthermore, schemas could be explored in relation to the traits of the proposed dimensional model for DSM-V.

Declaration of interest

The authors report no conflicts of interest.

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Chapter 3. Literature Review

This research project aimed to study schema modes and dissociation in borderline PD patients. Thus, the history of the development of the definition of borderline personality is investigated in the psychological literature. This investigation covers the psychoanalytic literature since the 1930s and more recent theories. This exploration particularly focuses on the gradual birth of the borderline PD concept. Proceeding to the sections defining BPD from different perspectives, the history of the development of the concept of dissociation is provided. The aim of this review is to demonstrate the evolution of theoretical thinking about BPD and the concept of dissociation.

3.1. Psychoanalytic Views on Borderline Personality Disorder

The history of borderline personality organisation has its roots in psychoanalytic literature. The word "borderline" was first used by Adolph Stern in 1938. He believed that this group of patients manifest narcissistic features. Before Stern, there was not a clear definition of the borderline state. In order to lay out a clear understanding of narcissism and borderline personality organisation, these concepts will be discussed from the two distinct point of views; Freud's and Kohut's theories. Then Kernberg's theory about borderline personality disorder will be discussed.

Stern and Kernberg have both considered patients with borderline personality organisation as being on the borderline between neurosis and psychosis (Clarkin, Yeomans, & Kernberg, 2007; Linehan, 1993).

After discussion about the psychoanalytical viewpoint of BPD, the cognitive and neurobiological understanding of borderline personality disorder (BPD) will be described and then BPD will be looked at in relation to dissociation.

3.1.1. Adolph Stern

As stated, Stern was the first to employ the term borderline (Gunderson & Singer, 1975) while stressing that ordinary psychoanalytic techniques were not effective with a large number of these patients, who did not fit into the standard neurotic or psychotic categories (Millon, 2011; Wolberg, 1982). Adolph Stern described the essential features of the borderline group of patients in a treatise entitled "*Psychoanalytic Investigation of a Therapy in the Borderline Neuroses*", published in 1938 (Wolberg, 1982). He provided a list of symptoms usually seen in these patients and his descriptions is as relevant today as it was 70 years ago (Paris, 2008).

3.1.1.1 Narcissistic features

For Stern, this involved character traits consequent upon deficient maternal affection (Millon, 2011) that became manifest in the simultaneous idealization and devaluation of other significant persons (Linehan, 1993). Cruelty, neglect and brutality by the parents over a period of many years were prevalent in the group Stern treated, leading to "affect hunger" or what Stern called "narcissistic malnutrition". As a result of an injured, starved inner world in which the normal narcissistic gratification and self-preservative needs had not been satisfied, the symptoms developed (Stern, 1938).

3.1.1.2 Psychic bleeding

Patients displayed paralysis instead of a resilient reaction in the face of painful experiences.

3.1.1.3 Hypersensitivity

Overreaction to subtle criticism or rejection that may result in development of paranoid ideas (Linehan, 1993). Thus, alongside their "deeply rooted insecurity", these patients display extreme caution and vigilance to danger. This hypersensitivity automatically serves as receptive apparatus to detect danger promptly and remain cautious (Stern, 1938).

3.1.1.4 Psychic rigidity

A constant, protectively reflexive, bodily stiffness, which anticipates danger in the environment, a reaction that is learnt from the experience of rigid, punitive and crudely restraining watchfulness by parental figures. Stern related psychic rigidity with insecurity, based on a fear of what could happen, and he considered that it was a defence that reflexively helped to combat anxiety (Stern, 1938; Wolberg, 1982).

3.1.1.5 Negative therapeutic reactions

Any interpretations by a treating analyst were considered injurious to self-esteem, and were responded to by discouragement, rage or suicidal gestures. They usually experienced the analyst's behaviour as an evidence of lack of caring or appreciation (Linehan, 1993; Wolberg, 1982).

3.1.1.6 Feelings of inferiority

There were pervasive feelings of inferiority, weakness, a sense that one is incapable of being loved and an overall immaturity. These feelings were used to prove inadequacy and

avoid adult responsibility. In the therapeutic session, the sense of inferiority served to induce parental type responses in the therapist (Millon, 2011; Theodore & Millon, 2011; Wolberg, 1982).

3.1.1.7 Masochism

The presence of self-pity and the presentation of a long-suffering, helpless and injured sense of self were seen in these patients. Self-defeat is a form of sadomasochism that is regarded as a protective mechanism against feeling guilty or other negative affect. Stern called it "wound-licking" –an inclination to indulge in self-pity. They hurt themselves in almost all the relationships they experienced (Stern, 1938). Wolberg believed that through sadism, which is a concomitant of masochism, the patient projected his reactive hostility that she once experienced in her parental relationships onto others (Wolberg, 1982).

3.1.1.8 Somatic insecurity or anxiety

The chronic anxiety and insecurity of the borderline patient originated from the basic rejection received in childhood, but was expressed somatically and took the form of worry about the body (Wolberg, 1982). Stern asserted that, through treatment, a deeper understanding of this underlying insecurity was revealed, "Stretching back to earliest childhood, its roots penetrating to periods beyond memory" (Stern, 1938).

3.1.1.9 The use of projective mechanism

An inclination to attribute internal difficulties to imagined hostile sources in the environment rather than recognise them in the self. The narcissistically needy person can defend against what he considers a hostile environment through these defensive procedures.

3.1.1.10 Difficulties in reality testing

Borderline patients can accept a fantasied role of others as either a god-magician or assaultive persecutor. For example, they expect the therapist to be the substitute of their parents and they might believe that the therapist has an unlimited universal power.

Stern believed that the entire clinical picture of borderline symptoms could be understood as resulting from narcissistic injury. As Wolberg (1982) reported, “In at least 75 percent of the group Stern treated, the mothers were neurotic and some had had psychotic episodes”. Specifically, all of these mothers were deficient in expressing affection. Inadvertently, their parenting lacked empathy and compassion, leading to “affect hunger” or what Stern called “narcissistic malnutrition”. As a result of an injured, starved narcissism in which the normal needs for gratification and self-preservation were not satisfied, these patients do not develop a sense of security acquired by being loved. Stern believed that such a disturbance in the development of the person early in life was responsible in these patients for neurotic personality traits. Stern emphasized that the fundamental underlying character component that resulted in this borderline group was narcissism. They were deprived of something so crucial to adequate psychic growth as if deprived food to body. The unsatisfied and unsatisfiable narcissistic needs are responsible for this demand. (Stern, 1938).

Stern referred to Freud’s statements that all neurotic symptoms are an effort made by the ego to reduce intolerable anxiety. While in the neurotic group, this anxiety develops on the basis of the infantile sexual impulses, in the borderline group of patients, anxiety grows on the basis of the infantile narcissistic impulses. Stern (1938) believed that for these patients, anxiety was mostly experienced at an earlier point of time than when

castration anxiety[16] developed in the other group of neuroses. He believed that these patients have strongly suppressed feelings of excessive insecurity and inferiority, which in turn led them to desire the best and greatest (Stern, 1938).

As a result of the very important role that narcissism played as an aetiological factor in this group of patients, two important modifications were suggested to improve the efficacy of the psychoanalytic approach in these patients. First, borderline patients need more supportive treatment until the patient's powers of trust and security become adequate. Second, modification consists of giving more priority to understanding the transference relationship than found in historical interpretative practice. Encouraging the patient to understand any dependent attitudes that result from unmet needs can be a disturbing process for patients. It is more efficient to work on the person's developmental history after a certain amount of healthy intellectual functioning has become available (Stern, 1938).

3.1.1.11 Positive and Negative Therapeutic Reactions

In regard to the transference relationship in this group of patients, an excessive dependence on the analyst became evident. The patients accept the superhuman size, omnipotence and omniscience of the therapist like children believe in fairy stories (Stern, 1938). They cannot expect help or love from another, unless they represent in fantasy the parental figure in the extreme, exaggerated proportions of childhood. When they find incongruences in their projected picture of the therapist and the real therapist, they can make violent attempts to recapture the old beatific illusion. Superficial improvement is

[16] In Freud's theory, sexual and aggressive instincts were expressed through the childhood wish for incestuous relationship with the parent of opposite sex and a murderous wish toward the rivalled parent of the same sex. Experiencing these wishes created an intense anxiety because the wish carried the fantasy of retaliation from the rivalled parent. This anxiety was called castration anxiety (Siegel, 1996, p. 26).

common during periods of a positive transference. The growth of self-esteem occurs at times when the patient experiences approval or preference for her by the analyst (Stern, 1938).

However, negative therapeutic reaction was a constant phenomenon. Negative emotions in the patient would usually correspond to the self-depreciation produced by what the patient perceived to be criticism on the part of the analyst. As the patient projected her own ego ideal on to the analyst, the experience of disapproval was extremely anxiety-provoking. The patient tried to avoid this anxiety by means of negative therapeutic reactions. Feelings of chagrin, guilt, fear of punishment and of not being accepted were prevalent due to the effort to win approval from the over-valued analyst. In this group of patients, growing up was a fantasy of perfection, with resultant anxiety when the ideal was not achieved. The patients' conception of realistic behaviour and accomplishment was illusory as they lived in a childlike world. They dare not risk doing what adults do (Stern, 1938).

Another common phenomenon found in the transference of this group of patients was their lack of authentic connection with the analyst. In the periods of hostility and anxiety, patients were in a state of withdrawal. This mode of transference was typical and varied with the quantity of narcissism involved. This exclusion of the analyst was related to insecurities and an endeavour by the patient to hide herself from a hostile parental figure (Stern, 1938).

Much of the work that these patients did was biased. This includes intellectual and superficial association, long descriptions, precisely chosen words and sentences, contained and constrained demeanour, and declaration of words of anger, anxiety and love without their emotional contents in a flat and monotone way. Therefore, any

constraining or absence of affect was characteristic of much of the transference (Stern, 1938).

3.1.1.12 Success in treatment

Stern made the following points about evidence for improvement as therapy unfolded:

- Recognition of narcissism as an underlying process from which the defences (symptoms) developed on the basis of needs. There must be attention to and treatment of the distributed narcissism.
- Also attention to and treatment of the disturbed psychosexual impulses was included.
- In fact, successful treatment became characterized by the appearance of anxiety in patients who had earlier repressed it and showed little affect in transference.
- Consideration of the fact that the great need of these patients is to feel protected to a degree that takes precedence over all other needs.
- The therapist should not expect free association to occur in a developed way, and expect difficulty in patients safely expressing anger.
- The ability to bring in-depth transference and historical interpretations into the work can only occur after some degree of maturity had been gained and the extreme need for protection was reduced (Stern, 1938).

It is evident that in Stern's writings about the borderline condition, narcissism played an important role as an etiological factor. I will discuss more about the definition of narcissism as I review the work of psychoanalysts such as Freud and Heinz Kohut.

3.1.2. Freud's concept of Narcissism

In Freud's early articles written in 1905 (Freud, 1953), he assigned two stages for the development of object[17] relationships: "autoerotism" and "object relationship". In initial stage, there is limited awareness of the self as separate from the other, and the child finds satisfaction through the erotogenic zones of its body. The satisfactions of being fed and cared for by another person lead the child to search for contact with the mother as a source of pleasure, and thus, this develops into the second phase of development, that of "object relationship" (Crockatt, 2006). In 1914, Freud added another stage between these two former stages called "primary narcissism". In the course of nursing, the child first senses the mother's love towards the self. The self is taken as the first object of the love by means of an identification with the mother. Therefore, primary narcissism and self-love grow out of autoerotism (Crockatt, 2006). In the year 1914, Freud wrote a pivotal essay called "*on Narcissism: an introduction*" in order to introduce the concept. He hypothesized that there must be a primary infantile narcissism which is being formed as ego –a new psychical action develops (Freud, Strachey, Freud, Strachey, & Tyson, 1957) . Based on Freud's writing, the development of the concept of primary narcissism arose from his observations of the mental life of the child and of primitive people (Sandler, Fonagy, & Person, 2012). For example, what he observed in primitive people was a style of thinking – called megalomania – which is characterized by over-estimation of the power of their dreams and their mental life, the great power of their thoughts, and their belief in miracles and magic. These particular patterns of thinking were seen in children as well. Freud followed the traces of narcissism in schizophrenia, homosexuality, physical disease and hypochondria in order to argue for the existence of narcissism in earlier phases of the

[17] Object is Freud's term for people (Siegel, 1996)

development of human. In essence, narcissism became understood as a normal maturational phase of healthy development in children, "a complement to the egoism within the instinct of self-preservation" (Freud et al., 1957, pp. 72-73). Freud continued to explore why an individual progresses from contentment with narcissism and starts to attach libido[18] to objects. He introduced a famous metaphor to illustrate this development and asserted that investment of the human on objects is similar to a pseudopodium that has been put out by an amoeba to absorb more food. People normally evolve from self-love to object-love because they need to do so. Freud believed that an intense egoism was protective against falling ill; however, in the last resort, we must begin to love in order not to fall ill (Freud et al., 1957). Being unable to love would be dangerous due to the deleterious consequences of built-up libido. Self-preservative and narcissistic inclinations contradict investing in object-love; however, individuals actually carry on a twofold existence. One is to serve his or her own desires and the other is to transmit his germ cells and to function as a link in a chain (Freud et al., 1957). As with substantial aspects of what Freud thought, the origin of love was pervaded with Darwinism (Sharpless, 2015). Therefore, love's creation and development met vital needs for the species (Sharpless, 2015). These theoretical explorations led Freud to the final assertion that narcissism was not a disorder, but rather a basic phase of sexual development that all humans traverse, return to and/or become fixated upon (Sharpless, 2015).

For example, schizophrenics show an opposite path back to primary narcissism, which Freud called "secondary narcissism". They can demonstrate megalomania and the withdrawal of interest from external objects even in their fantasy.

[18] Freud coined the term "libido" to describe the energy he believed was associated with the instincts (Siegel, 1996).

Freud noted that the maturation from narcissism to object love requires a relationship between an infant and a caring and nurturing significant other. Object choice seems to arise from sources of pleasure (Sharpless, 2015) . As Stern noted, due to affective malnutrition, this passage is not successful in borderline patients and their clinical presentation can be understood to result from narcissism (Stern, 1938).

3.1.3. Heinz Kohut

Kohut criticized Freud's model of narcissism. He asserted that much harm could be done by following this model, which proposed a transition from a state of primary narcissism to object love as a stage in the normal maturational process (Gabbard, 2014). In Kohut's view, the side-effect of Freud's thought was that one should outgrow the narcissistic phase and become more attentive about the needs of others. Kohut asserted that narcissistic needs remain throughout life and they parallel development in the realm of object love (Gabbard, 2014). In comparison to Freud's liner model of narcissism, Kohut postulated the parallel development of self-love and love of others - a double-axis theory - that paved the way for ongoing development in both narcissistic and object love (Gabbard, 2014; Siegel, 1996). He believed that the attempt to replace narcissism with object love set up psychoanalysis as an agent for society rather than for the individual, and reflected the introduction of Western values into psychoanalysis (Siegel, 1996).

Kohut's concept of narcissism has its own developmental line and a contribution to health, adaption and achievement. This concept – neither pathological nor obnoxious - differs with Freud's concept of seeing object love as the endpoint in the maturation of narcissism (Siegel, 1996). In Kohut's theory, the primary narcissism will be unavoidably disrupted by the caretaker's failed ministrations. The infant tries to restore the disrupted bliss by creating two systems to sustain narcissistic development (Figure 1). One system attempts

to develop a perfect self. The exhibitionistic wish to be seen and admired for unlimited abilities and for nothing other than mere existence is a quality of the grandiose self. The second system endeavours to restore the lost pleasurable state by imbuing an outside other with extreme power and perfection, the idealized other. Attachment to the perfect other restores the child's sense of wholeness and pleasure. Kohut named this narcissistic configuration [19] the "idealized parental imago" (Siegel, 1996). This configuration parallels the "ego ideal" in Freud's definition, which is that aspect of the superego that corresponds to massive introjection of the idealized qualities of the object (Kohut, 1966). The narcissism projected upon the parents will be re-introjected by the child to make that part of the superego called ego-ideal (Siegel, 1996). The idealized parental imago contains the fantasy of a strong other with whom union is sought, a wish to merge with the perfect other, who possesses vast knowledge, kindness and wisdom. The union brings contentment, strength and wholeness that affects the regulation of tensions and ultimately becomes part of one's precious ideals (Siegel, 1996).

Both of these two configurations transform the original narcissism into mature psychological structures: ambitions and ideals (Siegel, 1996). The grandiose self is the vehicle of human ambitions, while the idealized parental imago provides values and ideals for the individual. Kohut illustrated his point by saying that man is led by his ideals but pushed by his ambitions (Kohut, 1966).

The child might be traumatized by the empathic failures of a mother who does not provide sensitive and accurate mirroring responses to the child's grandiose-exhibitionistic self.

[19] An unconscious configuration is a cluster of needs, wishes, feelings, fantasies and memories within the unconscious. For example, the oedipal story is a configuration that represents a collection of wishes, fears and fantasies and motivates internal life. For Kohut, grandiose self and idealized parental imago are similarly configurations that constitute the core of the narcissistic sector of personality. The terms "structure" and "configuration" are synonymous for Kohut (Siegel, 1996).

Said differently, the caretaker who does not empathize with the child's need to idealize her does not provide a good model. If the grandiose beliefs of the narcissistic self have been insufficiently developed because of traumatic attacks on the child's self-esteem, the grandiose imaginations will be repressed and remain in their archaic forms. The adult will tend to vacillate between an irrational overestimation of the self and feelings of inferiority or painful shame, which can be seen in narcissistic personality disorder (Kohut, 1966).

The processes that help individuals to evolve out of "hallucinated" narcissism and develop healthy narcissism or real satisfaction is "optimal frustration" (Siegel, 1996). Freud believed that the experiences of optimal frustration are responsible for the differentiation between a wish and reality. Through a frustration that is neither so intense as to be catastrophic, nor so minimal as to be unimportant, wishes can be differentiated from reality. Freud called this capacity to understand reality and delay gratification, "the reality principle". Emotional maturity develops as the individual overcomes many frustrations by accepting the reality of each situation (Siegel, 1996, p. 27). Primary caretakers play an important role to provide opportunities for the child to come to terms with gradual, manageable frustrations, instead of traumatic situations. On the other hand, when a child is either indulged or rejected, he or she will develop maladaptive narcissism instead of adaptively valuable narcissism, otherwise known as robust self-esteem.

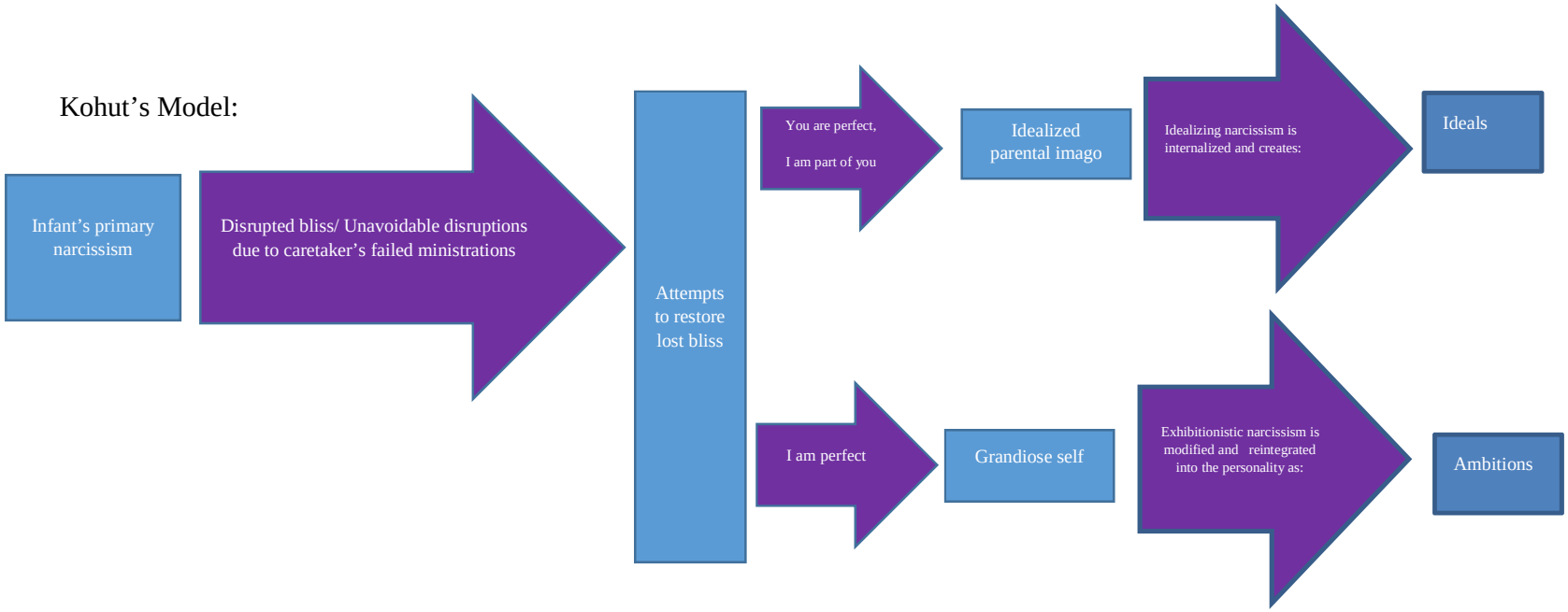
Like Stern, Kohut believed that BPD patients are characterized by the combination of greater ego injury and intensely protective, secondary narcissism (Siegel, 1996). In this group of patients, an injured and defective ego is seeking reassurance. What appears in the relationship between analyst and borderline patient are a number of psychological manoeuvres aiming to restore or shore up self-esteem; the attention is narcissistically focused on herself, her injured ego and not on the object. Thus, Kohut defined narcissistic

behaviours as an injured ego's restitutive attempts to attain reassurance from an external source. Kohut did not agree with traditional psychoanalysis or drive/defence theory, which tended to define narcissism as an offensive force that needs to be civilized (Siegel, 1996).

Kohut established the double-axis self as a central structure. He classified pathology on the basis of the self (Siegel, 1996). He believed that illness is not the result of unconscious drives, but rather an arrest in the development of one or both axes of the self. He defined primary and secondary disturbances. Primary disturbances were the result of arrest in the formation of the self, while the secondary disorders were reactions to life dilemmas. Kohut described five categories of primary disturbances: the psychoses, the borderline states, the schizoid and the paranoid personalities, and narcissistic disorders (Siegel, 1996).

He defined both psychotic and borderline states as either a permanent or prolonged breakup or serious distortion of the self. However, in borderline states, the fractured self is protected more or less by defensive structures (Siegel, 1996), something which is hypothesised to not be employed in frank psychosis.

Kohut's Model:



Freud's Model:

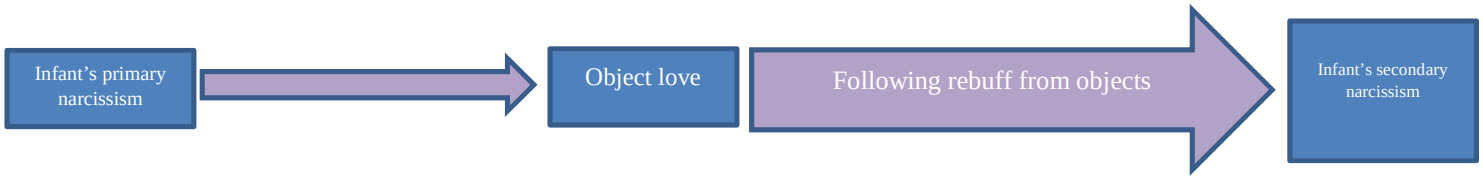


Figure 2: Developmental line of narcissism in Kohut's double-axis model and Freud's liner model (adapted from Gabbard, 2014; Siegel, 1996)

3.1.4. Kernberg and Psychoanalytic Object Relation Theory (Transference-focused Therapy)

Unlike Kohut, who put more emphasis on narcissism as one of the main psychologic structures of the mind, Kernberg preferred to define character based on the level of personality organization, progressing from normal to neurotic to borderline (Clarkin et al., 2007). He put more emphasis on the borderline level of personality organization, and defined high or low levels of borderline organization (Clarkin et al., 2007). The low borderline personality organization was characterized by more dysregulated cognitions and emotions.

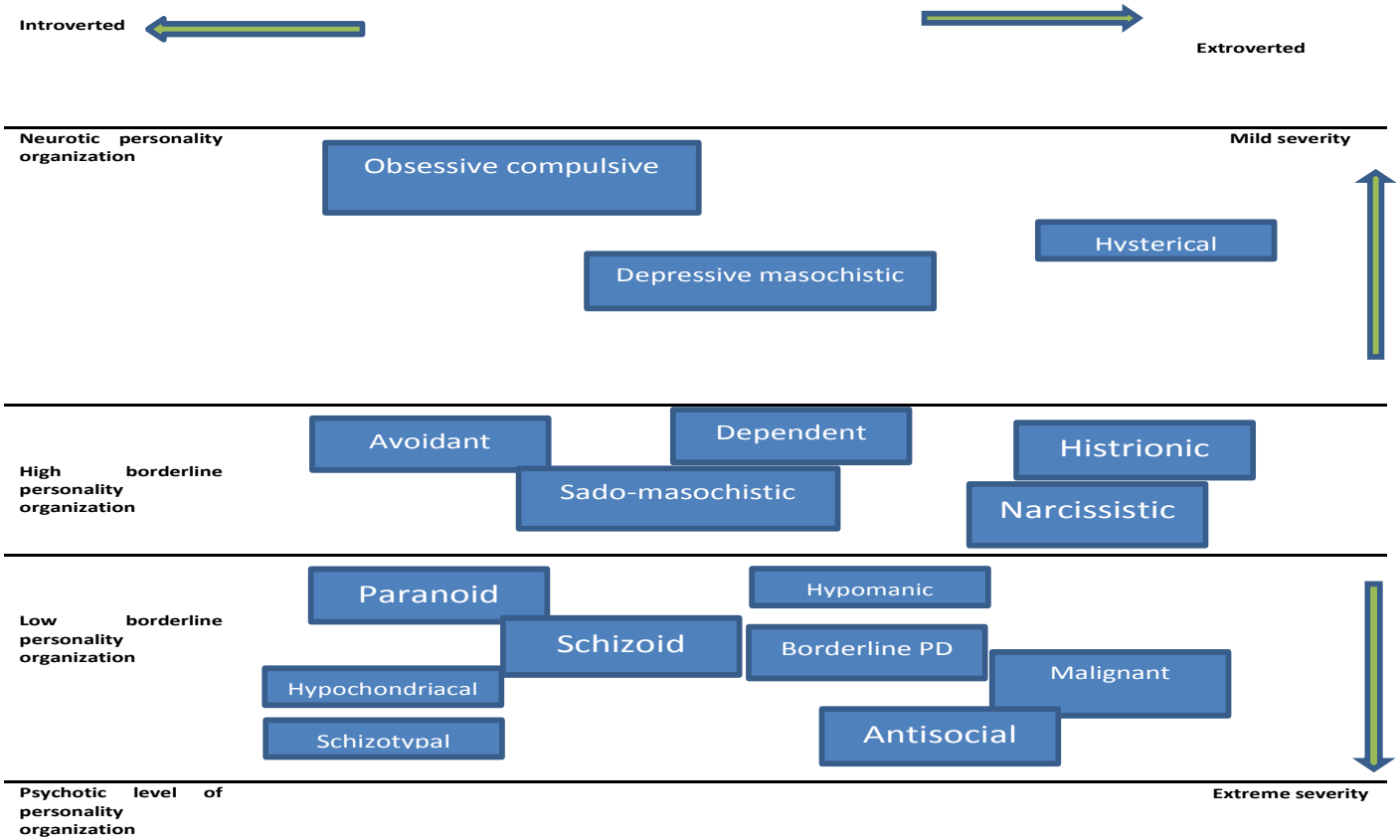
Kernberg also described character pathology along a continuum (Clarkin et al., 2007). This continuum extended from neurotic to psychotic personality organization. Alongside this continuum, the personality disorders ranged from mild to severe pathology. After neurotic characters, which were considered mildly severe, there was high borderline organization and then low borderline organization disorders on this continuum. At the most severe end of the continuum lay psychotic disorders (Figure 2). Kernberg put borderline, malignant narcissism, and antisocial personalities somewhere near the severe end of the spectrum (Clarkin et al., 2007). Kernberg is one of the writers in the psychoanalytic tradition who notably differentiated borderline phenomenology from other diagnoses (Golynkina & Ryle, 1999).

Thus, Kernberg and Millon believed that personality disorders can be differentiated in terms of degrees of severity or disorganization (Millon & Davis, 1996). Kernberg combined the categorical and dimensional models of personality disorders. He made clear

the distinction between the DSM borderline personality disorder and the borderline level of personality organization. In his theory, BPD is a specific personality disorder, diagnosed on the basis of a collection of descriptive criteria. Borderline personality organization (BPO) is a broader category based on structural features that involve pathology of identity formation. The BPO diagnosis subsumes the DSM BPD, as well as all of the personality disorders (Caligor, Kernberg, & Clarkin, 2007). Kernberg formulated the concept of borderline as representing a level of personality organization that may fall at any point along a continuous gradient. As illustrated in the Figure 3, the dimensional model is defined by where an individual falls on an introversion/extroversion spectrum and the relative degree of infusion of mental life with aggression. The categorical model is based on a range of PDs (Personality Disorders) described in DSM-5 and also the PDs excluded in the DSM classification. The specific personality disorders included in the spectrum of BPO ranges from less severe and extroverted personality disorders like avoidant, to more severe and extroverted personality like malignant narcissism and antisocial personality disorder (Clarkin et al., 2007).

Figure 3: Continuum of Character Pathology (Clarkin et al., 2007)

Figure 4: The relationship between personality types and structural diagnosis (Clarkin et al., 2007)



In the psychodynamic conceptualization of personality disorders, the apparent behaviours such as criteria noted in the DSM-5 represent problematic features of underlying mental structures. “In this context, the term structure refers to a stable, repetitively activated, and enduring pattern of psychological functions that organizes the individual’s behaviour, perceptions, and subjective experience” (Caligor et al., 2007, p. 5).

In Kernberg’s object relations theory, the two important drives described by Freud –libido and aggression- are always experienced in relation to a specific other which is called an object. The psychological structure is made of internal object relations that organize motivations and behaviours (Clarkin et al., 2007).

Affect plays an important role in Kernberg’s theory and was defined as building blocks of the drives. It was the affectively driven establishment of object relations, both real and fantasized interactions, which were laid down in memory as an inner world of object relations (Clarkin et al., 2007).

Children store qualities of a rewarding or aversive relationship in their memory when they are at the peak of an emotional experience (Clarkin et al., 2007). Object relation dyads consist of satisfying or negative experiences like an ideal image of an all-good, nurturing other and a content self, in contrast to a depriving image of an abusive other and a vulnerable self (Clarkin et al., 2007). Children who develop normally find the opportunity to gradually integrate varied good and bad representations of self and other. This integration results in more complex and realistic pictures of the self and others (Clarkin et al., 2007). This combination of multiple differing representations might acknowledge the reality that people are not black and white, and can be both satisfying and frustrating at different times. In children with emerging BPD, this integration process has not developed optimally, and idealized and persecutory images become divided

almost permanently (Clarkin et al., 2007). These images are not purely cognitive, and they become attached to intense primitive affects, such as hatred of the depriving object. The tendency to eliminate what is perceived as depriving is one definition of hatred (Clarkin et al., 2007). In order to protect the all-good image from hatred, a separation of the good and bad segments is crucial in this primitive psychological organization. This separation is a primitive defence mechanism –central to the pathology of borderline personality- that is called splitting (Clarkin et al., 2007).

Melanie Klein nominated the divided psychic structure as the paranoid-schizoid position (Clarkin et al., 2007; Klein, 1996). The paranoid position comes from the inclination to project the persecutory object onto others and therefore to live in fear of aggression (Klein, 1996). This projection increases the anxiety of the ego and ultimately leads the ego to develop some primary defences. Thus, the fear of persecutory and uncontrollable powers or objects strengthen the schizoid mechanisms (Klein, 1996). These schizoid mechanisms are characterized by splitting, heightened hostility and emotional withdrawal from object figures (Klein, 1996). As the child develops, the "depressive" position comes from the achievement of the first level of integration. It is called depressive because it is the result of mourning for the loss of the ideal provider image and guilt feelings in regards to aggressive acts toward others. A goal of treatment is to support the patient to advance from the paranoid-schizoid to the depressive position (Clarkin et al., 2007).

Infants need caregivers to help them avoid bad affects and experience good affect. If the caregiver knows how to read and respond to the infant's signals, the negative affect reduces; however, in the context of abnormal attachment in which the interactional system between infant and caregiver is distorted, overwhelming negative emotions can accumulate. In this way, the negative and positive affects can function independently and

the motivational system driving them becomes dissociated. A defence mechanism called projective identification is used to get rid of the intense negative affective experiences (Clarkin et al., 2007). The strong emotions felt by the infant are seen as coming from the outside of the infant. Projective identification is based on the predominance of splitting which consists of

1) The first person projects an impulse or something which he or she feels unpleasant in him/herself to another person.

2) Then the first person experiences the fear of the other person who is seen under the impact of the projected affect.

3) As a result of the fear, the first person needs to control the other person and 4) The second person to whom the affect has been projected experiences a strong unconscious arousal to act based on the projected contents (Clarkin et al., 2007).

The concept of projective identification was developed by Melanie Klein. She believed that this mechanism has two layers. In the upper layer, a person attributes an unwanted feeling to another person. However, this attribution is not the end of the story. In the deeper level, such a projection mobilizes the projected feeling in the second person, which is felt as an invasion (Weiss, 2014). In another defence mechanism called idealization, some relationships are idealized to protect the person from any danger of activation of negative affections and thoughts (Clarkin et al., 2007).

Kernberg further distinguished patients with normal, or consolidated identity from those with identity pathology on the basis of the nature of their dominant defensive operations and the stability of their reality testing (Clarkin et al., 2007). In sum, in the healthier group, personality development was evident in the setting of 1) normal identity, 2) the

predominance of higher level, repression-based defensive operations, and 3) intact reality testing. These features define the “neurotic level of personality organization” (NPO) in Kernberg’s classification system. As personality development is more severely distorted a maladaptive rigidity arises in the setting of 1) clinically significant identity pathology, 2) the predominance of lower level, splitting-based, defensive operations, and 3) variable reality testing in which ordinary reality testing is mostly intact but the subtler capacity to accurately perceive the inner states of others is impaired. These features define the “borderline level of personality organization” (BPO) (Caligor et al., 2007).

Individuals with BPO are characterized by uncertain identity, the use of primitive defences, mostly intact yet frail reality testing, problems in affect regulation and in sexual and aggressive demonstration, diffuse internalized values and a poorer quality of interpersonal relationships.

3.1.4.1 Identity diffusion

The problematic aspect of BPO is the lack of integration of the primitive positive and negative segments of early object relations that were formed in the course of early severe affective experiences (Clarkin et al., 2007). The lack of integration causes the identity diffusion, which is at the heart of BPO, and is characterized by the absence of an integrated concept of the self and significant others. Clinically, the lack of integration of these representations of self and others becomes evident in emotional lability, anger outbursts, interpersonal chaos, impulsive self-destructive actions, and mistakes in reality testing. A manifestation of this fragmented identity is the vacillation between helplessness and rageful aggression toward oneself or others (Clarkin et al., 2007).

3.1.4.2 Primitive Defences

The defence mechanisms negotiate conflicts between the affective states and drives, internalized rules against wishes, and external reality. Mature defences reduce the anxiety stemming from such conflicts and increase the ability to behave flexibly and to have more success in work and love. In the process of normal mental growth, people advance from the use of primitive defences to more mature defences such as rationalization, intellectualization, humour, and sublimation (Clarkin et al., 2007).

The primary strategy in BPO to support the self from the anxiety of colliding love and hate is the strict separation of these affects and also their objects (Clarkin et al., 2007). The radical separation of good and bad emotions and objects is a primitive defence called splitting. This defence protects an idealized segment of the individual's mind from an aggressive segment (Clarkin et al., 2007). This split is maintained at the expense of the integration of the mental images in the mind. As a result of implementation of this defence mechanism, things are black or white, idealized or devalued, and what is good and what is bad can change under quite minor tensions (Clarkin et al., 2007). The individual is unable to see the subtle shadings of a situation or tolerate ambiguity. As a result of the predomination of splitting in BPO, each part of the split has access to consciousness, although in a discontinuous and dissociated form (Clarkin et al., 2007). This is an image-distorting defence that make use of dissociation, or splitting, to avoid psychological conflict and emotional distress. The terms dissociation and splitting refer to a psychological process in which two aspects of experience that are in conflict are both allowed to emerge fully into consciousness, but either not at the same time, or not in conjunction with the same object relation. For example, a woman may be assertive and effective in her professional life, but excessively submissive and passive in her marriage

(Caligor et al., 2007). Splitting or primitive dissociation is further empowered by projective identification. This defence mechanism is characterized by an unconscious inclination both to induce in another person what is being projected and to attempt to control the other person. Primitive idealization, omnipotence, omnipotent control, and denial are other prominent primitive mechanisms that reinforce splitting and projective identification (Clarkin et al., 2007).

3.1.4.3 Relationship to Reality

In borderline individuals, reality testing is subject to fluctuations (Clarkin et al., 2007). For instance, under pressure, individuals with BPO can more easily become paranoid. In contrast, neurotic patients, do not have such oscillations in reality testing and possess a subtler sense of empathy, self-reflection and tactfulness (Clarkin et al., 2007).

3.1.4.4 Object Relations

In individuals with BPO, the primitive internal representations of self and other from early life are retained, which results in outlook perception of the world where loving objects and depriving objects alternate, with no middle ground (Clarkin et al., 2007). This will lead to a poorly evolved sense of self, with shifts from experiencing oneself as helpless to experiencing oneself as all-powerful. Problematic object relations are manifested in a lack of understanding of others. Others can be seen as overvalued or devalued. However, in normal development, such primitive states of the mind become integrated into the larger structures forming the mature psychic apparatus: the id, the ego, and the superego (Clarkin et al., 2007).

3.1.4.5 Moral Values

The super ego is a multi-layer structure and its layers emerge gradually as the child develops by internalized representations of the self and objects (Clarkin et al., 2007). The first developmental layer reflects the demanding and primitive morality experienced by the child as the parents make demands that forbid the expression of aggressive, sexual or dependent impulses (Clarkin et al., 2007). The second layer is formed by the idealised pictures of self and other. The third layer of the superego develops as the earliest persecutory level and the later idealizing level becomes integrated. In this way, internalization of more realistic parental standards and prohibitions become possible. The superego allows the individual to become less dependent on external confirmation and more capable of deeper commitment to the internal value system. In all personality disorders, examination for superego pathology is important. Antisocial behaviour represents the lack of superego moderating behaviour. (Clarkin et al., 2007).

3.1.4.6 Aggression in Borderline Personality Disorder

In comparison to the other approaches, an object relations approach to borderline psychopathology focuses more on the role of aggression in this pathology (Clarkin et al., 2007). Self-psychology and attachment-based psychotherapies consider aggression as a reaction to mistreatment without considering a role for inborn aggression. Kernberg considered aggression as a constitutional component of every human, which is a product of evolution embedded in our neurobiology. Evolutionarily, aggression makes its contribution in the protection of the younger generation, and the provision of food, and territoriality. In a more civilized environment, aggressive motivations can be channelled to creativity and leadership qualities. The patient should be helped to acknowledge,

understand, and integrate his or her rage in order to move on to a fuller growth of the capacity for love, which have been blocked by unintegrated and incompletely recognised aggression (Clarkin et al., 2007).

In normal development, the separated good and bad segments of the psyche become integrated (Clarkin et al., 2007). This integration leads to the development of mind having representations of the self and other that include both positive and negative features. This paves the way for a flexible mind capable of understanding the complexities of the real world (Clarkin et al., 2007).

For the person with a narcissistic disorder, anxiety is related to the self's awareness of its fragility and its propensity to fragmentation (Siegel, 1996). The central pathology resides in the developmental arrest of the self-regard configurations, which deprives the self of reliable, cohesive sources of self-regard and creates an inability to maintain and regulate self-esteem at normal levels (Siegel, 1996).

In conclusion, Kernberg believed that those recognized as borderline in their adulthood display a high level of destructive drive or genetic aggression. This aggression is accumulated in their early years of life through interactions with their parents, and would predispose them to depend upon splitting defence mechanisms. The splitting is an important defence in Kernberg's view, which underlies other defences like projective identifications, and principally defines this personality disorder (Howell, 2005).

3.1.5. Comparing Kohut and Kernbergs' theories about borderline

Kohut differentiated Narcissistic PDs from borderline conditions. He believed that borderline patients do not have a sufficient cohesiveness of the self, which makes them

inappropriate clients for psychoanalysis (Gabbard, 2014). In contrast, Kernberg saw the defensive system of narcissistic personality as strikingly similar to BPDs. He viewed narcissistic PD as one of several personality types that function at the borderline level of personality structure (Gabbard, 2014). Kernberg differentiated narcissism from borderline on the basis of the narcissist's better integrated but still pathological grandiose self (Gabbard, 2014). In order to deny their dependency on external objects, narcissists identify themselves with their idealized self-image. They still have the system of primitive defence mechanisms typical of borderline patients, including splitting, projective identification, omnipotence, idealization and denial. However; they have better functioning than seen in BPD because of a more integrated, yet still pathological, grandiose self (Gabbard, 2014). Therefore, patients with BPD suffer from more alternating self-representations, ego weaknesses, and problems with impulse control and anxiety intolerance than narcissistic patients. While Kernberg highlighted more envy and aggression in BPD patients, Kohut put more emphasis on their narcissistic injury and neediness (Gabbard, 1994). Now I turn to the theories of Margaret Mahler who made a worthwhile contribution to the psychoanalytic views of BPD.

3.1.6. Margaret Mahler

Margaret Mahler made her contribution to the object relation theories of BPD by further elaborating the concepts related to splitting and separation anxiety (Landesman, 2003). Mahler was an influential developmental theorist in 1970s, conducting psychoanalytic observational research of the first years of life (preverbal infant observations) (Stone, 1986). She defined the psychological birth of the human being in her discussions of the separation-individuation theory (Landesman, 2003). She described how infants grow from their first phase of development called normal-symbiotic phase (primary narcissism)

to a second phase called separation-individuation. Her theory moved from the classic psychoanalytic drive theory to one that put more emphasis on mother- child interactions and environmental factors.

3.1.6.1 Normal-autistic phase

Mahler had initially named the early weeks of infancy as the autistic phase in which the infant spends most of his/her time sleeping and has less interest in the outside world. Mahler later has made some changes to her theory regarding this first phase of development in light of new findings in infant observation. She preferred the name "awakening" instead of "autistic" (Talbott & Stern, 2012).

3.1.6.2 Normal-Symbiotic Phase:

In the phase that extends from 4 to 6 weeks until about 5 months of age, the infant senses its mother but lacks sufficient awareness of its own individuality. The infant perceives itself as one with its mother (Mahler, Pine, & Bergman, 1975).

3.1.6.3 Separation-Individuation Phase:

This next phase, which begins at about 5 months and progresses until about the 36th month of age, was described by Mahler as the process through which the infant breaks out of its autistic shell (Landesman, 2003). Mahler referred to the psychological birth of the individual as its separation-individuation process (Mahler et al., 1975). Separation refers to the differentiation happening in the infant's mind between the infant and the mother, while individuation refers to the evolution of the infant's ego, cognitions and sense of identity. Mahler (1972) subdivided the separation-individuation process into four

sub-phases: differentiation, practicing, rapprochement, and “on the way to object consistency”.

3.1.6.4 Differentiation

In this phase, the infant becomes aware of the presence of the mother, exhibited by the social non-specific smile that gradually becomes specific (Mahler, 1972). The attention becomes outwardly directed during the child’s periods of wakefulness. “For children for whom the symbiotic phase has been optimal and confident expectation has prevailed, curiosity and wonderment are the predominant elements of their inspection of strangers” (Mahler, 1972, p. 335). In contrast, among infants whose basic trust has been less than optimal, a change to stranger anxiety may appear (Mahler et al., 1975).

3.1.6.5 Practicing Period

The practicing sub-phase is recognized by the infant’s absorption in his own autonomous functioning to the near exclusion of the mother (Mahler et al., 1975). This takes place from around 7 up to 16 months of age (Mahler, 1972). Upright locomotion and walking seem to have important symbolic meaning for both mother and toddler, who has graduated into the world of independent human beings (Mahler, 1972). However, the child returns occasionally to the mother, seeming to need emotional refuelling from time to time. During this period, children do not like to lose sight of their mothers and most of them go through a brief period of separation anxiety (Mahler, 1972). The child narcissistically invests in his power and apparent magical mastery, and there is great imperviousness to frustrations and falls (Mahler et al., 1975).

3.1.6.6 Rapprochement Sub-phase and Rapprochement Crisis

This phase occurs between 16 to 25 months of age and, because of the child's more clearly perceived state of separateness from the mother, he is prompted to redirect his main attention back to the mother (Mahler et al., 1975). This awareness is a result of the growth of the ability to separate physically from his mother as well as his cognitive growth. Increased separation anxiety and active concern with the mother's whereabouts are characteristics of this sub-phase (Mahler et al., 1975). The child gradually loses his sense of omnipotence and illusion of exclusive union with the love object, and becomes more vulnerable to separation. This often leads to coercive fights with the mother. There are more signs of temper tantrums, rage, and helplessness. A wish for reunion and awareness of the fact that the mother is a separate individual, and that her world is not like his illusionary beliefs, culminate in a deliberate search for and yet, at other times, avoidance of intimate body contact. This ambitendency characterizes the rapprochement crisis of this phase of development (Mahler, 1972; Mahler et al., 1975). The child also experiences the two contrasting images of the mother as a good person and a bad person. Predictable emotional involvement on the part of the mother seems to facilitate the development of the toddler's thought processes, in order to integrate both bad and good as a component of a "self" and also "other" concepts. On the other hand, the mother's emotional willingness to let go of the toddler is enormously helpful and will lead to healthy individuation (Mahler et al., 1975). As Mahler and other psychoanalysts highlighted, the achievements and pathologies of this phase reverberate throughout the life cycle. She further contributed to understanding features of BPD, emphasizing the rapprochement sub-phase as influential in the development of borderline psychopathology. Failure at this stage to reconcile the rapprochement crisis might lead to continued striving for lost

symbiotic relationships and an increased need for closeness alongside separation anxiety. If their anxieties are not recognized and healed in their emotional environment, children fail to unite good and bad object representations and thus develop object inconsistency at this phase of development (Landesman, 2003). Westen (1990) asserted that if the mother's behaviour in this phase of development is insensitive or inconsistent, and non-attuned to the child's needs, then dysfunction occurs. The mother's failure to help the child to modulate his aggression or her retaliatory aggression toward the child can lead to overreliance on the splitting mechanism (Landesman, 2003). In Mahler's hypothesis, borderline patients internalized two mechanisms of coercion[20] and splitting of the object world that hinder their individuation process (Mahler et al., 1975).

3.1.6.7 Object Consistency Sub-Phase

In this final phase, the child attains its sense of individuality and a certain degree of object consistency (Mahler et al., 1975). Essential prior determinants are 1) trust acquired through a need-satisfying agency in the symbiotic phase and 2) the cognitive acquisition of the symbolic inner representation of the permanent object (in Piaget's sense: Object Permanence). Other aspects of ego maturation and successful resolution of the rapprochement phase occur through the emotional availability of the mother, who contributes to the slow transition from a primitive, ambivalent love relationship, which exists as long as it is need-satisfying, to more permanent and mature relationships. As this sub-phase proceeds (which is an open-ended process), the child becomes able to accept separation from the mother once again (Mahler et al., 1975).

[20] The splitting conflict that the child experienced is acted out by coercive behaviours directed toward the mother, designed to force her to function as the child's omnipotent extension or all-good mother (Mahler et al., 1975).

While Mahler's observations made a worthwhile contribution to our understanding of BPO, Daniel Stern's later observations of early infant socialisation and responsiveness to others corrected some of Mahler's hypotheses about symbiosis. Mahler's phases of individualisation and rapprochement foreshadowed later developments of attachment theory.

3.2. Daniel Stern's developmental theory in comparison to Mahler's Theory

Daniel Stern endeavored to bridge the gap between clinical psychoanalytic understanding and experimental research of the infant's development (Ryle, 1995). Stern's observations ended up in a developmental theory that contradicts some psychoanalytic and Mahlerian basic concepts.

Stern rejected Freud's notion of psychic energy that had fixation and regression to some early point in development. He also rejected the idea that there were stages that replace each other in the child development (Talbott & Stern, 2012). His alternative model of development is a layered model which suggests that no emerging domain disappears; each developmental layer remains and facilitates the emergence of the other layers and interacts dynamically with them. He proposed the term "domains of relatedness", rather than stages or phases (Stern, 1985). He highlighted the interpersonal world of the infant, contradicting Freud's ideas that highlighted the pleasure principle and psychosexual development (Stern, 1985). Stern believed that the important changes happen in the infant's social experience; the changes encompass the acquisition of new senses of self and capacities for relatedness. He described four senses of the self; each one included a different domain of social relatedness and self-experience (Stern, 1985). Subjective social

experience results from the sum and integration of experience in all domains (Stern, 1985, p. 34). They are 1) the sense of emergent self (that forms from birth to 2 months old); 2) the sense of a core self (between 2 and 6 months); 3) the sense of a subjective self (from 7 to 15 months); and 4) a sense of a verbal self that elaborates from 15 months of age. When each sense of self forms, it continues to grow and remains active throughout life (Stern, 1985). In this theory, each sense of self also remains vulnerable to injury across the lifespan, not only in the early phases of development. These ideas contradict psychoanalytic theories that consider a point of origin for later-emerging disorders (Weinberg, 1991). Like Klein and Mahler, Stern highlights the infant's experience of self and other; however, he avoids confusing the development of these senses of self with issues of the ego or id (Stern, 1985). He also adopts a normative approach, avoiding to construct his theory based on the ontogeny of pathological conditions. To him, the phases of development are not seen as later clinical issues, but rather in terms of adaptive tasks that come along because of maturation in the infant's mental and physical capacities (Stern, 1985). Winnicott, Mahler and many other theoretical approaches accepted an assumption that the infant is not able to differentiate self from other. Mahler had named one of the primary phases of development, the symbiotic phase. To her, dual unity with mother is the background condition from which a separate self and other progressively emerge. In contrast to these approaches, Stern believes that the young infant, approximately from birth, has a differentiated sense of self (Stern, 1985; Weinberg, 1991). He rejected the Mahlerian idea of normal autism, asserting that infants are deeply engaged and related to social stimuli from birth (Stern, 1985). Stern disagreed with Mahler's symbiosis phase that assigned a state of undifferentiation between self and other. Stern believed that the infant develops a sense of core self and other, separated physically from each other during the period Mahler considered as the symbiosis phase

(2-7 months). Instead of separation and individuation, Stern prefers to see attachment and togetherness as the essential states of human existence. To him, connectedness is a success of psychic functioning, not the result of a failure in differentiation (Stern, 1985). Unlike Mahler who saw language acquisition as a major step in the achievement of individuation, next to locomotion acquisition, Stern believed that the acquisition of language is potent in the service of togetherness and union (Stern, 1985). Based on Stern's emphasis on attachment as the essence of the development of a healthy sense of self, borderline identity diffusion might be related to the problematic attachments experienced in childhood. Having considered the development of the self from the perspective of Mahler and Stern, let me next introduce some recent conceptual developments from the psychoanalytic field.

3.3. Recent Psychoanalytic Approaches to BPD

3.3.1. Mentalization Model

Mentalization-based theory and its treatment models were originally developed to treat BPD (Bateman & Fonagy, 2012). In this theory, the main capacity that borderline patients lack is reflective function or mentalization. Mentalization is defined as the capacity to think about mental states in oneself and in others. In effect, it refers to making sense of each other and ourselves, implicitly and explicitly in terms of mental processes (Bateman & Fonagy, 2004). In object relation theory, it is believed that children internalize the roles or characteristics of their caregiver; in contrast, in this model, the children internalize the understanding the caregiver has of the mind of the child (Bateman et al., 2007). Children learn this understanding capacity from their caregivers to comprehend the mind of themselves and others. Fonagy theorized that a secure attachment relationship gives the

child an opportunity to explore the mind of the parent and, in this way, to learn about minds. This model is then used to describe some personality-disordered individuals, who were victims of childhood maltreatment. Fonagy suggested 1) that persons who have had early traumatic experiences may defensively inhibit their ability to mentalize in order to avoid having to remember and think about their parent's wish to harm them; and 2) that some features of severe BPD might have their roots in developmental pathology related with this inhibition (Fonagy, 2000).

Fonagy postulated a generational transition of personality disorder (Fonagy, 2000). There is evidence of an association between childhood abuse and specific personality disorders. As children, persons who were maltreated frequently had caretakers who were themselves within the so-called "borderline spectrum" of severe personality disorder (Fonagy, 2000). This social inheritance factor might be a significant point in understanding of the disorder. Studies showed that patients with BPD diagnoses had predominantly "preoccupied attachments" that are linked with unresolved experiences of trauma and a strong reduction in reflective function (Fonagy, 2000). Attachment theory is now receiving notable focus in psychoanalysis and is a model that has provoked a large body of research (Cassidy & Shaver, 1999). The original theory derives from the supposition that disturbed attachment to caretakers during childhood can shape psychopathology in adulthood. Applying this theory to BPD, Fonagy and his colleagues proposed that abnormal relationship patterns in childhood (insecure and disorganized attachments) are behind the problems that patients have with interpersonal relationships (Paris, 2008).

3.3.1.1 Mentalization and the differentiation of the self

The parents' ability to observe the child's mind increases the child's overall perception of his or her mind via the safe mirroring present with secure attachment (Fonagy, 2000).

The likelihood of the child's secure attachment is increased by having a reflective caregiver, and as a result, the child's capacity for mentalization will also increase. The child with secure attachment sees in the parent's reflective position a picture of herself as thinking and believing. She perceives that the parent represents her as an "intentional being", and this representation is internalized to form the self. "She thinks of me as thinking and therefore I exist as a thinker" may come closer to the truth of the birth of the self than "I think, therefore I am"(Fonagy, 2000, p. 1132).

3.3.1.2 Pre-mentalization forms of understanding the world

Two concepts refer to the ways children experience mental states before the achievement of the ability to mentalize (and under particular situations, individuals with BPD). The first is "psychic equivalence", the second "pretend mode" (Bateman & Fonagy, 2004). When mentalization performs inadequately, modes of representing psychological experience which antedated complete recognition of the nature of mental states dominate the patient's mind. In psychic equivalence, the individual equates the internal world with the external world. What exists in the subjective world or mind must exist in the real world, and what exists in the external world must entirely exist in the mind. "Psychic equivalence" may cause great distress as the projection of imagination to the external world is sensed to be real. For example, a child might fear a Batman costume as he thinks it is real (Bateman & Fonagy, 2004). The exclusive experience of the psychic equivalent mode is manifested by severe psychosis (Spitzer et al., 2006). In pretend mode, the child's mental state is separated from the real world, but the internal state is thought to have no connection to the outside world and the rest of the ego. For instance, a three-year-old child in pretend mode may consider a chair as an imaginary enemy and so he starts shooting at it. Neither of these modes is able to create a full account of reality: psychic

equivalence is too real, while pretend is too unreal. In normal development, those two modes are integrated in children's mind; in this way, they become equipped with mentalization or reflective capacity that enable them to experience thoughts and feelings as representations (Bateman & Fonagy, 2004). While in psychotic patients, the psychic equivalent mode predominates, in people with borderline personality organization and intense dissociation, the pretend mode is prevalent (Spitzer et al., 2006). In a sense in clinical work with BPD patients, words that refer to internal states usually have a real impact on the patient as he/she begins to reflect and thus learn to mentalize (Bateman & Fonagy, 2004).

3.3.1.3 Alien Self

There is great pressure on the child to create a description or mental representation of his/her own internal states (Bateman & Fonagy, 2004). The child searches for the environmental cues that correspond to his self-expressions. Winnicott noted that failing to find his current mental state understood and mirrored, the child is most likely to internalize the caregiver's mental state as part of his own self system. When encountered with a frightening or frightened caregiver, the infant takes in the mother's emotions of hatred, rage or fear, and her picture of him as "unmanageable" or "frightening" as part of himself. This painful state of self must then be externalized for the child to achieve a coherent self-structure and to obtain relief from its persecutory influence. Fonagy and others called the resulting incoherence within the self an "alien self" (Bateman & Fonagy, 2004).

3.3.1.4 Symptomatology of borderline personality disorder in mentalization-based theory

3.3.1.4.1 The unstable sense of self

The fluctuating sense of self of BPD patients is a result of the lack of reflective capacity. A stable sense of self is just unreal when the alien self is externalized onto the other. By enforcing others to react as if they were part of her/his internal representation, the potential of a "real" relationship is missed, and there will be a high probability of sensing abandonment (Fonagy, 2000).

3.3.1.4.2 Impulsivity

The impulsivity of BPD patients may be due to: 1) limited insight about their own affective states, linked with the lack of symbolic representations of them; and 2) the predominance of non-mentalizing physical acts, especially in threatening relationships. The behaviours of others are only seen through their observable results, not as being driven by desire, and thus responded to by immediate actions (Fonagy, 2000). Emotional inconsistency and irritability are related to the biased understanding of reality in borderline patients. The lack of mentalization diminishes the complexity of these perceptions; only one version of reality is viable and there can be no incorrect idea. The patient sees the consequence of an action, and this is seen as its explanation. A more in-depth comprehension would require identifying substitute underlying beliefs and motivations to account for the apparent behaviour (Fonagy, 2000).

3.3.1.4.3 Suicidality

Therapists are familiar with the strong fear of abandonment in BPD patients. This, more than any other feature, is related to the disorganized attachment of these patients. As BPD patients need another individual in order to obtain self-coherence, the unbearable alien

self-image is reinternalized, which is followed by self-destruction. Suicide symbolizes the imagined destruction of this alien other within the self (Fonagy, 2000).

3.3.1.4.4 Splitting

The incomplete representation of the other (or the self) is a common restraint to communication with these patients. Integrating assumed intentions in a coherent manner is a prerequisite for understanding the other in mental terms. The needed solution for the person, given the necessity to arrive at coherent representations, is to split the representation of the other into several subgroups of motivations, including an all-good and a persecutory identity. The person finds it impossible to use both images at the same time. Splitting gives the individual the opportunity to create mentalized but inaccurate and simplified images of people (Fonagy, 2000).

3.3.1.4.5 Emptiness

Emptiness is a result of the lack of secondary representations of self-states at the conscious level. Mental states make the link for the individual to feel the continuity between past and present. The relinquishment of mentalization generates a deep sense of isolation and shallowness of relationships (Fonagy, 2000).

Let me turn from this brief commentary on mentalization to the way in which Ryle brought together psychoanalytic concepts with cognitive theory.

3.3.2. Antony Ryle's Cognitive Analytic Theory (CAT)

CAT originates from the attempt to restate pivotal, psychoanalytic, object relations ideas in a cognitive language (Bateman et al., 2007). CAT is an integrative therapy and has its theoretical roots in object relations theory, Kelly's personal construct theory, and cognitive, behavioural and developmental science (Ryle, 1995). The rudimentary unit of

description in CAT is the reciprocal role procedure (RRP), a relational module involving generalized procedural memories (Howell, 2005). They are patterns that organize behaviours and involve repeated sequences of mental processes, behaviours and consequences (Ryle, 1997). These RRPs are built up in childhood through interactions with caregivers. They embody socially-derived values and meanings, which are transmitted through signs and language. A person can be characterized by describing their repertoire of reciprocal roles (Ryle, 1997). CAT emphasizes the embeddedness of the individual in the social matrix, and the significance of the internalization of reciprocal role relationships in the development of personality (Howell, 2005). RRPs represent a translation of object relations theories, in which a child's experience is seen as more important than hypothetical universal unconscious conflicts (Bateman et al., 2007). These RRPs are acquired in childhood and joined into sequences in the course of development, based on relationships with caretakers. They predict responses from the other. This reliance on the responses of others continues to characterize the self across all of life (Howell, 2005). The procedures are the outcomes of perceptions, appraisal, actions and evaluation that, in turn, shape actions. The common RRPs are mostly concerned with issues of dependency, care, control, and submission (Ryle, 2007).

The Kernberg and Kleinian models of BPD share an emphasis on intrapsychic forces and motivations like aggression (Golynkina & Ryle, 1999). Rather than favour the attribution of unconscious motivations and instinctual gratifications to explain patient behaviours, as occurs in classical psychoanalysis, Ryle described psychoanalytic defences like splitting in terms of contrasting polarized role patterns (Howell, 2005). Ryle mostly defined the unconscious mind based on the signs, words, language and relational patterns that infants acquire in their social and cultural contexts such as in mother/baby dyad (Ryle, 1995).

Ryle incorporates the work of Vygotsky on the social formation of the mind (Bateman et al., 2007). Vygotsky recognised that all human beings are born in a historically formed world. The experience of human ancestors is stored in language and in the sign system that carries or symbolizes our practical and social experiences. Ryle believed that we should consider mental phenomena that retain early interpersonal and social origins, and we should regard the person's relationship to the universe as a mediated relationship (Ryle, 1995). He redefined the unconscious mind based on culturally transmitted signs and relational patterns with self and others that are formed early in life. This view contradicted notions of the Freudian unconscious, which mostly consist of biologically driven motivations, conflicts, defences and behavioural accounts of human behaviour, and rejected symbolic mediation as an unnecessary complication (Ryle, 1995). In Ryle's understanding, we are not only impacted by social contexts and culture, but also created and maintained by them (Bateman & Fonagy, 2004).

Common psychological disorders can be attributed to a small range of problematic grouping of RRPs; the procedures generally represent the defensive alternatives to forbidden or feared behaviours and affects. BPD is characterized by a predominantly negative and narrow range of RRPs; this repertoire includes patterns of neglect and abuse resulting from deprived victimhood in almost all cases (Bateman & Fonagy, 2004). Moreover, traumatic experiences culminate in a stable pathological dissociation, establishing a range of self-states, with switches between states being often abrupt and unprovoked (Bateman & Fonagy, 2004).

3.3.2.1 The Dissociation and Multiple Self-States in CAT theory

The understanding of BPD proposed by CAT shares with psychoanalysis an attempt to make a developmental and structural account, but differs in the greater emphasis that is

placed on the influence of early environment. The resultant structure can be described in terms of dissociation rather than of intrapsychic conflict and defence. Dissociation is a response to unmanageable external threats in childhood and recurs in response to memories, reminders, or repetitions of the threat (Ryle, 1997).

The majority of our psychological theories and the psychoanalytic theory itself assume monadic mental processes (Howell, 2005, p. 122). In contrast, in Ryle's cognitive analytic model, the processes that form the self are described in terms of dialogue or relationships with internalized voices or characters (Howell, 2005). As Ryle and Kerr (2003, pp. 35-36) asserted, the ""I" is more a federation than a single nation".

Unlike the stable images of self and object depicted in the more famous currents of psychoanalytic and object relations theories, the RRPs defined by CAT are enacted. Implicit relational processes, rather than objects or object relationships, are internalized. In particular, Ryle's model of reciprocal role patterns defines dissociation as disconnections among systems of dyadic, procedural enactments, especially in families with hostile or helpless relational patterns. When dissociated, the self-states provide templates for static re-enactments of old experience (Howell, 2005). Ryle describes a state as a "state of being" as a distinct, contrasted facet of being, feeling and behaving. Examples of states include the victim state, the revengeful state, the dismissive contemptuous state and the caretaker state. The state represents one pole of a reciprocal role pattern and can then be understood in relation to its reciprocal. States can be identical to roles, which are described as "combining memory, affect, and action organized in relation to the search for the experience of reciprocation"(Ryle, Leighton, & Pollock, 1997, p. 27).

The multiple self-state model is one of trauma-induced structural dissociation, resulting in an unhealthy multiplicity of self-processes (Ryle, 2007). Although healthy development depends on the internalization of mature reciprocal role interactions, abusive and neglectful environments make a flexible, adaptive and integrated sense of self (identity) much more problematic. When a person develops internalizing ineffective role relationships, this can create vulnerability to dissociation in several ways. A child who is abused, neglected, or both, is likely to lack assistance and interpersonal context for labelling experiences and linking them together. In addition, trauma can cause disconnection of aspects of intolerable experience, fragmenting the self. Finally, in a dysfunctional family environment, there can be inadequate reflective thinking or repair of the fragmented self (Howell, 2005). Experiences of inconsistent or chaotic parenting fail to provide sufficient, consistent models of care that can be internalized. This, in addition to trauma-induced dissociation, reduces self-reflection (Ryle, 2007).

The multiple self-state model reformulates disturbances and disorders along a continuum of levels of dissociation between self-states, which include the role and its reciprocating role interaction (Howell, 2005). While healthy identity development is characterized by integrated configurations of RRPs, problematic development is characterized by contradictory and dissociated self-states, which dominate self-experience and interpersonal interactions (Howell, 2005). Ryle understands personality disorder in terms of dissociated and partially dissociated self-states. The partially and completely dissociated self-states alternate and exert control on others to react with the expected reciprocation, thereby perpetuating the same faulty beliefs and chaotic situations (Howell, 2005). This continuum of dissociation extends from normality through to severe personality disorders, such as BPD, with an endpoint of Dissociated Identity Disorder

(DID) (Howell, 2005). Borderline patients are prone to discomforting and abrupt shifts between largely contrasting states. Such switches are often accompanied by alterations in facial expression, posture and tone of voice and, at times, by derealisation-depersonalization experiences. These experiences and much of the variability seen in borderline patients, are understood in the CAT model to be the effect of switches between partially dissociated self-states. BPD patients can have a number of self-states each of which can be characterized by its pattern of RRPs and accompanying behaviours, feelings, and symptoms (Ryle, 1997). The multiplicity seen in borderline patients can be distinguished from what occurs in a normal person by the range of highly negative and extreme mental and behavioural patterns, the higher level of amnesia between states, and the frequency of inappropriate and sudden behavioural switches (Ryle, 2007).

In a study done by Ryle (2007, p. 335) on BPD patients, the victim and "rage" states were found to have high rates of dissociative and somatic symptoms. In the rage state, the frequency of self-harm was high and the frequency of recall of other self-states was low. Examples of other states which were frequent in BPD patients were described as "blanked off from emotions", "doing what people expect of you without any feelings" and "high states with feelings of ecstasy and being over the top". These findings support the understanding of BPD as the output of childhood neglect and abuse, culminating in the internalization of a negative role pattern. Patients re-enact versions of that pattern in the "rage", "revengeful", "bully" and "dismissive contempt" states. The experience of a threat of abuse, or neglect, or the fear of uncontrolled anger can lead to dissociation. The dissociation was helpful in childhood as it allowed an escape from feared, intensive and uncontrolled feelings of rage and abandonment. The dissociative process becomes established in the form of alteration between threatening states and states seeking to

escape. These substitute states may include denial of the sense of weakness, grandiose state, the suppression of emotion, or resentful submission with emotional flattening (Golynkina & Ryle, 1999; Ryle, 2007).

3.3.2.2 Hierarchical organization of the procedural systems

The multiple self-states model defines three levels of difficulty and damage in personality. The individual who has grown up with neglect, abuse or both is likely to experience problems in three primary areas. The developmental origin of BPD is considered with reference to damage affecting these three levels (Howell, 2005; Ryle, 1997).

The first level concerns the reciprocal role relationships organising self-management and relationships. For individuals who have experienced abuse, this involves the negative and restrictive RRPs that the person internalized. Instances are “abusing-abused” and “neglecting-neglected”. Growing up in a rejecting or abusive family environment colours the range and flexibility or rigidity of the repertoire of RRPs acquired by the survivor (Howell, 2005).

Level 2 involves higher-order meta-procedures that mobilise level 1 procedures, links them and attempts to organize smooth transitions between them. For example, a child at dinner might, by means of level 2 functions, link three level 1 procedures: (1) silent subordination to an angry father; (2) affectionate nurturance for a depressed mother; and (c) cheerful communication with a younger sister (Ryle, 1997). Linking options reduces rigidity and could allow choice of a better or more adaptive behaviour. Deficits in level 2, cause division of RRPs into a number of segregated self-states that are dissociated or partially dissociated from each other (Howell, 2005). The development of level 2 procedures can be disrupted by contradictory or incoherent parenting (Ryle, 1997).

With Level 3, a more reflective consciousness develops with a greater sense of self. Consciousness permits attention to be focused on what is new or dysfunctional in the world or in one's own behaviour. BPD patients seem only partially capable of self-reflection. This results from two factors: (1) self-reflection is a procedure to be learned in interpersonal interaction. Parents whose concern is obedience, appearance or performance rather than the child's subjective experience, or who do not have an interest or a range of vocabularies to picture emotions, do not equip the child with a basis for self-reflection. (2) Another factor is disruption of self-reflection by state shifts. BPD subjects may be aware of the feelings within themselves and others, but such awareness is discontinuous and is liable to interruption by state shifts (Ryle, 1997).

3.4. Attachment theory in relation to borderline disorder

Bowlby showed ethological and observational evidence that infant primates, including humans, are genetically hardwired for attachment in the service of survival. The goal of the attachment system is proximity to the attachment figure to increase the chances of survival (Howell, 2005). As Bowlby (1984, p. 11) postulated, attachment is vital to emotional security and the desire for it persists across the life cycle. "All of us, from the cradle to the grave, are happiest when life is organized as a series of excursions, long or short, from the secure base provided by our attachment figures" (Howell, 2005, p. 148). Bowlby used the term "internal working model" to picture internal mental representations that children develop for the world and important people within it, including the self. Internal working models are used to predict others' behaviours and plan one's own behaviour in social interactions (Rholes & Simpson, 2004). Initially, 3 patterns of attachment style were depicted, based on observations of one-year-olds in the Strange

Situation, a standard test devised by Mary Ainsworth that described infants' behaviours following separation from their mothers. These included "secure attachment", "anxious-ambivalent" and "anxious-resistant". The two later attachment styles were designated insecure. Insecure attachment was understood to represent consistent relational patterns, linked with unavailability or unresponsiveness on the part of the caregiver, but not gross insensitivity and maltreatment (Lyons-Ruth, 2001). A fourth, later described category, "disorganized attachment" is linked with gross insensitivity, unresponsiveness, and maltreatment on the part of the caretaker. Disorganized attachment (D-attachment) has been associated with adult psychopathology in a number of studies, including aggression, personality disorders and dissociative disorders (Howell, 2005). When children face a perplexing situation in which they need to seek safety from but also fear the caretaker, their attachment strategies are likely to become disorganized. As a result, multiple, segregated, incompatible working models of attachment may develop (Howell, 2005). Lyons-Ruth (2001) found that disorganized infants could be categorized into two groups that she organized behaviourally as "D-Approach and D-Avoid Resist", relating respectively to their mothers' two groups of behavioural profiles of "helpless" or "hostile". Disorganized children of helpless mothers approached them, while disorganized children of hostile mothers avoided them. As these disorganized children grew older, they reorganized their attachment behaviours in a way that they began to control their parents and others. These controlling behaviours were grouped into an overresponsive "caregiving" style and a hostile, "punishing" style. Similar to their mothers, they became hostile or helpless (Howell, 2005). Lyons-Ruth (2001, p. 45) concluded that:

> "*The developmental transition from disorganized behaviours to controlling forms of attachment behaviours over the preschool period supports the notion*

> *that one "grows into" a borderline or narcissistic stance through a complex series of alternative developmental acquisitions… The child in a disorganized attachment relationship appears to use emerging developmental capacities to construct increasingly polarized coercive or role-reversed "false-self" relations with the parent".*

In conclusion, similar to Kernberg's psychoanalytic understanding that saw borderline disorder and narcissism on the same pathological line of structural and defensive dysfunction, Lyons-Ruth also postulates that both of these conditions have the same root stemming from childhood experiences of these patients. She saw disorganized attachment in the early years of life as the main cause of both conditions.

Thus far, I have reviewed both historical and more recent psychotherapeutic models that have informed understanding of BPD. Now I turn to clinical work which culminated in the recognition of diagnostic criteria for BPD.

3.5. Grinker's Definition of BPD

Three psychiatrists (Kernberg, Grinker, and Gunderson) were responsible for consolidating and promoting the concept of BPD. Kernberg (1970), and his theory was discussed in detail earlier. However, there were two drawbacks with his concept of "borderline personality organization". First, it was completely psychoanalytical in that it was described on the basis of theories about mental mechanisms, rather than on observable behaviours. Second, BPO is a very broad concept that encompasses many personality disorders. The second pioneer was Grinker (1900-1993) who utilized ego-psychology as a theoretical framework for describing borderline patients (Paris, 2008; Stone, 1986). He published the first empirical research study of borderline personality

patients, which gave more credit to clinical observation than to psychodynamic theoretical suppositions. His team described, classified and quantified the various ego-functions as they were expressed in behaviours. They concluded that the borderline state is a specific syndrome with a considerable degree of internal consistency and stability. They recognized that the borderline syndrome is a perplexing combination of psychotic, neurotic and character disturbances, with some healthy or normal elements. Although the symptoms are unstable, the syndrome itself as a process is stable, giving rise to the strange term "stable instability" (Stone, 1986, p. 347). Grinker, Werble, and Drye (1968) defined common characteristics of all BPD patients:

- Anger as the basic or only affect.
- Defect in emotional (interpersonal) relations.
- The absence of stable self-identity.
- Depression as characteristic of life

They also categorized different subtypes of borderlines into 4 categories. In general, subtype 1 is closest to the psychotic border; subtype 4 is closest to the neurotic border; subtype 2 represents the core process of the borderline and subtype 3 is the more adaptive, compliant but still lacking in identity (Stone, 1986).

Table 5: Borderline subtypes defined by Grinker's team in 1968 (Linehan, 1993, p. 7).

Subtype 1: The psychotic border • Behaviour inappropriate, non-adaptive; • Self-identity and reality sense deficient; • Negative behaviour and anger expressed; • Depression.
Subtype 2: The core borderline syndrome • Vacillating involvement with others; • Anger acted out; • Depression; • Self-identity not consistent.
Subtype 3: The more adaptive but affectless, and defended, "as if[21]" • Behaviour adaptive, appropriate; • Complementary relationships; • Little affect; spontaneity lacking; • Defences of withdrawal and intellectualization.

[21] Detach (2007, p. 326) coined the term "as if" personality for BPD patients and characterized the significant feature of BPD patients' interpersonal relationship as superficial and shallow. There is a great contradiction between their highly expressed superficial relatedness and their real and internally felt emotions towards relationships.

Subtype 4: The border with the neuroses

- Anaclitic22 depression;
- Anxiety;
- Resemblance to neurotic, narcissistic character.

3.6. Gunderson's First Definition of BPD

The third most influential researcher in the field of borderline, was John Gunderson. Gunderson and Singer (1975) published an article which was a turning point for acceptance of BPD. It was shown that BPD could be operationalized with behavioural criteria. The studies of these pioneers impacted the definition of BPD adopted by the Diagnostic Statistical Manual of Mental Disorders (third edition [DSM-III]; American Psychiatric Association, 1980) after 5 years (Paris, 2008).

Gunderson and Singer (1975) performed a selective review of the borderline literature embracing three main descriptive conceptualizations of the borderline: first, the literature on behaviours and symptoms; second, the psychological test literature; and third, the psychoanalytic history in regards to ego functioning (Gunderson & Singer, 1975).

Following an intensive literature search and taking methodological issues into account, Gunderson and his associates identified a number of criteria that most of the authors believed to reasonably characterize most borderline individuals:

[22] A depression based on profound feelings of loss or loneliness (Blatt, 2004)

3.6.1. Intense affect

It is usually of a vicious, hostile or depressed nature. There are also varying degrees of anxiety and anhedonia. Patients inclined to experience strong and variable affects, although this does not seem to encompass the experience of pleasure (Gunderson & Singer, 1975).

3.6.2. Impulsive behaviour

This may take many forms, including both occasional behaviours (e.g., overdose of drugs, self-harm) and more chronic action patterns (e.g., promiscuity, addiction). Often the consequences of these behaviours are self-destructive (Gunderson & Singer, 1975).

3.6.3. Social adaptiveness

Conforming to social norms superficially but not showing appropriate manners and appearance over time. This may reflect a disturbed identity, masked by some level of superficial identifications with others (Gunderson & Singer, 1975).

3.6.4. Brief psychotic experiences

There is a potential for psychotic experiences, even in the absence of such experiences. Unstructured situations and relationships might be the trigger for activation of psychotic behaviours. Some authors have underlined the frequent occurrence of disturbed states of consciousness. These altered ego states have been categorized as depersonalization, derealisation or dissociation (Gunderson & Singer, 1975).

3.6.5. Psychological testing performance

Borderline persons give bizarre or primitive responses on unstructured or projective tests such as the Rorschach, but not on more structured tests such as Wechsler Adult Intelligence Scale (WAIS). (Gunderson & Singer, 1975).

3.6.6. Interpersonal relationship

There is an oscillation between transient, shallow relationships, and intense clinging relationships. Devaluation, manipulation, and demandingness are usually seen in these patients (Gunderson & Singer, 1975).

The literature reviewed up to now was devoted to the development and evolution of the definitions and concepts of BPD from different theoretical backgrounds. The theories highlight the underlying pathological processes of the disorder. Meanwhile DSM is mostly a diagnostic tool aiming to provide consensus among trained clinicians and researchers (American Psychiatric Association, 2013). Since the introduction of BPD in DSM-III, a more empirically based definition of BPD was introduced. In the following section, I will discuss the BPD definition from the DSM point of view.

3.7. DSM-IV's definition of BPD

The Diagnostic and Statistical Manual of Mental Disorders (DSM) is a classification guideline that systematically described and grouped mental disorders with their associated criteria. After Gunderson's attempts to legitimize BPD in 1975, eight diagnostic criteria for BPD were introduced in DSM-III on 1980, and were not changed in DSM-IV (American Psychiatric Association, 1994), but a ninth criterion was added in DSM-IV to describe cognitive symptoms. The DSM-IV approach to personality disorder consists of three elements: First, general definition of personality disorder; Second, specific criteria sets for a number of significant personality disorders, and third, a "not otherwise specified" category, under which could be placed PDs that do not fall under any of the particular classifications (Wakefield, 2013). DSM-IV General Diagnostic Criteria for Personality Disorder:

Table 6: DSM-IV general diagnostic criteria for personality disorders (Wakefield, 2013, p. 169)

A: An enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual's culture. This pattern is manifested in two (or more) of the following areas: 1- Cognition (i.e., ways of perceiving and interpreting self, other people, and events). 2- Affectivity (i.e., the range, intensity, lability, and appropriateness of emotional response). 3- Interpersonal functioning. 4- Impulse control.
B: The enduring pattern is inflexible and pervasive across a broad range of personal and social situations.
C: The enduring pattern leads to clinically significant distress or impairment in social, occupational, or other important areas of functioning.
D: The pattern is stable and of long duration, and its onset can be traced back at least to adolescence or early adulthood.
E: The enduring pattern is not better accounted for as a manifestation or consequence of another mental disorder.
F: The enduring pattern is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., head trauma).

In sum, based on the definition of DSM-IV, which has been retained in the section-II of the DSM-5 as well, a personality disorder is a persistent pattern of subjective experience and behaviour that deviates significantly from the norms of the person's culture, is pervasive and rigid, has an onset in adolescence or early adulthood, is consistent over time and ends up in distress or impairment. (American Psychiatric Association, 1994, 2013)

Diagnosis in DSM-IV was based on a multiaxial assessment (American Psychiatric Association, 1994). This form of assessment includes an evaluation on different axes, each of which relates to a different module of information that might guide the therapist to organize treatment and anticipate outcome. There were five axes included in the DSM-IV multiaxial classification. Axis-I was for reporting the clinical disorders; axis II was

for personality disorders and mental retardation; axis-III was for general medical problems; axis-IV was for psychosocial and environmental problems; and axis-V was for global assessment of functioning. The benefit of the introduction of the multiaxial system was that this system facilitated comprehensive assessment in different areas of functioning (American Psychiatric Association, 1994).

3.8. The definition of Borderline Personality Disorder in DSM-IV and DSM-5

Based on the definition of BPD in DSM-IV and section-II of DSM-5, the essential features of borderline personality disorder are "a pervasive pattern of instability of interpersonal relationship, self-image and affects and marked impulsivity that begins in adolescence and is established by early adulthood and is present in a variety of contexts" (American Psychiatric Association, 2013, p. 663). Individuals with borderline personality disorder make dramatic efforts to avoid real or fantasized abandonment. These abandonment fears are associated with an intolerance of being alone and losing support (American Psychiatric Association, 2013, p. 663). Borderline Personality Disorder is diagnosed when at least 5 out of 9 following criteria are met. The diagnostic criteria for BPD in DSM-IV which is again repeated in section-II of DSM-5 have been presented in Table 1 of the first chapter.

3.9. DSM-5 Specific Criteria for Personality Disorders

During the generation of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), different recommended refinements were made that would

have markedly transformed the way by which persons with these disorders are diagnosed. Based on ideas received from a multilevel assessment of recommended revisions, the American Psychiatric Association Board finally decided to uphold the DSM-IV categorical approach with the same 10 personality disorders. (American Psychiatric Association, 2013).

In Section II of DSM-5, the criteria for personality disorders were altered from those in DSM-IV, and again personality disorders were categorized into three clusters based on descriptive similarities (American Psychiatric Association, 2013).

However, DSM-5 changed the multi-axial system and substituted a new form of assessment that eliminated the boundaries between personality disorders and other psychological disorders (American Psychiatric Association, 2013). DSM-5 has thus moved to a non-axial diagnosis (previously Axes I, II, and III), with distinct notations for significant psychosocial and environmental factors (formerly Axis IV) and disability (formerly Axis V). The DSM V system thus integrates the first three axes provided in previous editions of DSM into one axis with all mental and other medical diagnoses (American Psychiatric Association, 2013). This revision is in line with the DSM-IV guidelines that state, the multiaxial distinction among different axes does not imply that there are basic differences in their definition or that mental disorders are unrelated to physical, biological or medical conditions (American Psychiatric Association, 2013). In addition, axis II disorders in previous DSM classifications tended either to be missed utterly or not to be taken seriously (Zimmerman, Rothschild, & Chelminski, 2005).

The APA's alternative dimensional-categorical model for diagnosing personality disorder is included in section III for further study. Although four DSM-IV personality disorders were omitted in this section, the new DSM-5 model retained six personality disorder types

(Borderline, Obsessive-compulsive, Avoidant, Schizo-typal, Antisocial, and Narcissistic PDs).

In the new dimensional model of DSM-5 (Section-III) for personality disorders (for further study), personality disorders are described by impairments in personality functioning and pathological personality traits. The essential features of a personality disorder are described in Table 7:

Table 7: Suggested Diagnostic Criteria for Personality Disorders (adapted from American Psychiatric Association, 2013, pp. 766-767)

A. Moderate or greater impairments in self and interpersonal functioning.
B. The presence of one or more pathological personality traits.
C. The impairments in personality functioning and the individual's personality traits are relatively inflexible and pervasive across a broad range of personal and social situations.
D. The impairments in personality functioning and the individual's personality traits are relatively stable across time, with onsets that can be traced back to at least adolescence or early adulthood.
E. The impairments in personality functioning and the individual's personality traits are not better explained by another mental disorder. F. The impairments in personality functioning and the individual's personality traits are not entirely attributable to the physiological effects of a substance or another mental condition.
G. The impairments in personality functioning and the individual's personality traits are not better understood as normal for an individual's developmental stage or sociocultural environment

The main feature that distinguishes this proposed definition is that there must be moderate or significant issues in self "identity or self-direction" and interpersonal "empathy or intimacy" functioning (American Psychiatric Association, 2013, p. 770). A scale (The Level of Personality Functioning Scale- LPFS) has been provided in DSM-5 for evaluating the level of personality functioning. This scale differentiates "five levels of

impairment from little or no impairment (i.e., healthy, adaptive functioning; Level 0) to some (Level 1), moderate (Level 2), severe (Level 3), and extreme (Level 4) impairment" (American Psychiatric Association, 2013, pp. 775-778).

Another important distinguishing factor in the new model is the assignment of one or more pathological personality traits. Pathological personality traits are organized into five broad domains: "Negative Affectivity" (vs. Emotional Stability), "Detachment" (vs. Extraversion), "Antagonism" (vs. Agreeableness), "Disinhibition" (vs. Conscientiousness), and "Psychoticism" (vs. Lucidity) (American Psychiatric Association, 2013, p. 773). Within the five broad trait domains are 25 specific trait facets that were developed from the examination of current trait models and also through research with samples of clients who sought mental health services. To better understand their source, "These five domains are maladaptive variants of the five domains of the replicated personality model" identified as the "Big Five" or "Five Factor Model" of personality (FFM) (American Psychiatric Association, 2013, p. 773).

Both impairments in personality functioning and pathological traits are assessed dimensionally in different related domains or categories.

The new model of DSM-5 has assigned a diagnostic category for borderline personality disorder. Characteristic difficulties in personality functioning are apparent in identity, self-direction, empathy, and/or intimacy. Specific maladaptive traits are also evident in the domain of Negative Affectivity, and also Antagonism and/or Disinhibition. The inclusion of BPD in the new model of DSM indicates that BPD is still a valid and significant personality disorder in clinical practice.

Table 8: Proposed Diagnostic Criteria for DSM-5 (Section-III) for Borderline Personality Disorder (adapted from American Psychiatric Association, 2013, pp. 767-768)

A- Moderate or greater impairment in personality functioning, manifested by characteristic difficulties in two or more of the following four areas:

1. Identity: Markedly impoverished, poorly developed, or unstable self-image, often associated with excessive self-criticism; chronic feelings of emptiness; dissociative states under stress.
2. Self-direction: instability in goals, aspirations, values, or career plans.
3. Empathy: Compromised ability to recognize the feelings and needs of others associated with interpersonal hypersensitivity (i.e., prone to feel slighted or insulted); perceptions of others selectively biased toward negative attributes or vulnerabilities.
4. Intimacy: Intense, unstable, and conflicted close relationships, marked by mistrust, neediness, and anxious preoccupation with real or imagined abandonment; close relationships often viewed in extremes of idealization and devaluation, and alternating between over involvement and withdrawal.

B- Four or more of the following seven pathological personality traits, at least one of which must be (5) Impulsivity, (6) Risk taking, or (7) Hostility:

Emotional lability (an aspect of Negative Affectivity): Unstable emotional experiences and frequent mood changes; emotions that are easily aroused, intense, and/or out of proportion to events and circumstances.

Anxiousness (an aspect of Negative affectivity): Intense feelings of nervousness, or panic, often in reaction to interpersonal stresses; worry about the negative effects of past unpleasant experiences and future negative possibilities; feeling fearful, apprehensive, or threatened by uncertainty; fears of falling apart or losing control.

Separation insecurity (an aspect of negative affectivity): Fears of rejection by and/or separation from significant others, associated with fears of excessive dependency and complete loss of autonomy.

Depressivity (an aspect of Negative Affectivity): Frequent feelings of being down, miserable, and/or hopeless; difficulty recovering from such moods; pessimism about the future; pervasive shame; feelings of inferior self-worth; thoughts of suicide behaviour.

Impulsivity (an aspect of Disinhibition): Acting on the spur of the moment in response to immediate stimuli; acting on a momentary basis without a plan or consideration of outcomes; difficulty establishing or following plans; a sense of urgency and self-harming behaviour under emotional distress.

Risk taking (an aspect of Disinhibition): Engagement in dangerous, risky, and potentially self-damaging activities, unnecessarily and without regard to consequences; lack of concern for one's limitations and denial of the reality of personal danger.

Hostility (an aspect of Antagonism): Persistent or frequent angry feelings; anger or irritability in response to minor slights and insults.

Before I describe the cognitive theories of BPD, I discuss new neurobiological findings and theories about BPD in order to cover different aspects of the BPD phenomenon.

3.10. Neurobiology of BPD

The patterns of behaving and feeling that are prevalent in BPD are thought to stem from the interaction between developmental experiences and biological processes. Exploring the neurobiology of BPD provides a window into one significant determinant of the disorder (Koenigsberg & Siever, 2009). Two distinct personality traits are found - affective instability and impulsive aggression - which appear to have strong biological correlates and co-occur in BPD patients (Koenigsberg & Siever, 2009).

3.10.1. The Neurobiology of Impulsive Aggression in BPD

Impulsive aggression is a central feature of a number of the “cluster B” personality disorders, specially borderline and antisocial personality disorders (Skodol et al., 2002). As demonstrated by twin and adoption studies, impulsive aggression is heritable (Coccaro, Bergeman, & McClearn, 1993). There is evidence resulting from studies that suggest reduced serotonergic activity in the brain might be linked with impulsive aggression in personality disordered people. Primary studies of impulsive suicide attempters found lower levels of the serotonin metabolite, 5-HIAA, in cerebrospinal fluid (Åsberg, Träskman, & Thorén, 1976). Neuroendocrine reactions to agents that increase serotonergic activity, such as fenfluramine, have been shown rather consistently to be blunted in patients with a history of impulsive aggression (Koenigsberg & Siever, 2009; Skodol et al., 2002). The neuroendocrine studies assess the function of serotonin systems in the hypothalamus. Functional magnetic resonance imaging studies (F-MRI) and

positron emission tomography (PET) studies provide a window to measure serotonin system activity in regions of the brain which are more involved in behavioural responses (Koenigsberg & Siever, 2009). Based on the results of these studies, prefrontal metabolic activity especially in the orbital, medial prefrontal cortex and the cingulate cortex, has been reported to be diminished in association with impulsive aggression in people with antisocial and borderline personality disorders (Brown, 1982; Goyer et al., 1994). These areas of the brain are cortical inhibitory areas that may reduce the limbic release of aggression (Skodol et al., 2002).

3.10.1.1 Genetic contributions

Although twin studies, including studies comparing concordance rates of BPD among dizygotic and monozygotic twins, indicate that genetic factors are involved in BPD, understanding the genetic polymorphisms related to personality disorders is a complicated task as there may be several distinct genetic pathways resulting in the same personality disturbance (Koenigsberg & Siever, 2009). Studies pointing to the role of serotonergic activity in BPD have led to studies on candidate genes known to code for proteins involved in serotonin neurotransmission (Koenigsberg & Siever, 2009). In genetic studies in humans and animals, products of the following genes have been found to be associated with aggression: Tryptophan hydroxylase (TPH), the serotonin transporter, the 5-HT1b receptor, and the 5-HT2a receptor. The TPH “L” allele and serotonin transporter “S” allele have been linked with neuroticism and impulsivity, and the 5-HT1b receptor gene has been associated with suicide attempts (Koenigsberg & Siever, 2009; Skodol et al., 2002).

3.10.1.2 Environmental contributions

Clinical data also demonstrate that environmental experiences play a significant role in the development of BPD. For instance, trauma is a common antecedent of BPD. In personality disordered people, the trauma is mostly physical or sexual abuse (Koenigsberg & Siever, 2009). Abuse can reorganize the "stress systems" such as the Hypothalamo-Pituitary-Adreno (HPA) axis, and their relationship to serotonergic activity (Heim, Newport, Bonsall, Miller, & Nemeroff, 2001).

3.10.2. The Neurobiology of Affective Instability in BPD

Another significant dimension underlying borderline personality disorder is affective instability, that is, intense emotional reactivity to environmental events, particularly events such as losses and frustrations. This trait is associated with anger, identity disturbances, and suicidality of BPD patients (Koenigsberg & Siever, 2009). There is a large body of work implicating the cholinergic and noradrenergic systems in mood regulation (Silk, 1994). Increased responsiveness to the cholinergic system or to the central neurotransmitter acetylcholine is reported in major depression (Janowsky, Risch, Judd, Huey, & Parker, 1985). When arecholine (an agonist at cholinergic receptors) is administered to patients with depression, it induces higher levels of depression, anger and, hostility. The administration of physostigmine (an agent which increases cholinergic activity by inhibiting the cholinesterase enzyme) has been found to induce depression in depressed, manic bipolar and BPD patients (Koenigsberg & Siever, 2009). Administration of procaine (a cholinergic agonist which activates limbic structures including the amygdala, has been shown to generate a high level of dysphoria in BPD subjects (Koenigsberg & Siever, 2009). Borderline patients also show decreased and

more variable REM latency, and enhancement of this REM latency with muscarinic agonists has been shown in early studies with BPD patients (McNamara, 1984). These findings suggest that an increased sensitivity to cholinergic activity might be associated with affective instability (Koenigsberg & Siever, 2009).

The noradrenergic system may also play an important role in modulating arousal level and vigilance of the environment and also may make a contribution to the affective instability seen in BPD patients (Skodol et al., 2002).

The heightened noradrenergic activity could interpret the increased reactivity to external stimuli in BPD. Dextroamphetamine, which is a reuptake inhibitor and releaser of norepinephrine and dopamine, induces a high level of dysphoria in healthy subjects. Gamma-aminobutyric acid (GABA) is an inhibitory neurotransmitter in the central nervous system. A large number of GABA receptors exist in amygdala, which play a significant role in the evaluation and expression of emotion. The hypothesis that low levels of GABA activity might be associated with affective instability in BPD patients receives additional support from the evidence that three mood stabilizers named lithium, valproate and carbamazepine, which can diminish affective instability in BPD, appear to heighten GABA activity (Koenigsberg & Siever, 2009).

3.10.3. Amygdala

The amygdala has a central role in measuring the emotional importance of stimuli and in facilitating the emotional response to those stimuli. The connections between amygdala and hippocampus enable memories to activate emotional reactions. Some structural imaging studies of borderline patients have found decreased volumes for the amygdala and hippocampus (Koenigsberg & Siever, 2009). Another study found the signs of

amygdala dysregulation such as greater activation in BPDs than in comparison to healthy controls (Donegan et al., 2003). Therefore, the amygdala and hippocampus are two brain structures that may be implicated in the affective instability found in BPD (Koenigsberg & Siever, 2009).

Having taken note of this neurobiology, I want to discuss cognitive approaches to BPD.

3.11. Cognitive Approaches to Borderline Personality Disorder

Psychotherapy is regarded as the primary treatment for patients with borderline personality disorder (BPD) (American Psychiatric Association, 2004; Gunderson, 2011; Zanarini, 2009). Currently, there are four comprehensive psychosocial treatments for BPD. Two of these treatments are considered psychodynamic in nature: mentalization-based treatment and transference-focused psychotherapy. The other two are classified as cognitive-behavioural in nature: dialectical behavioural therapy and schema-focused therapy (Zanarini, 2009). I discussed the two psychodynamic approaches to BPD in the previous section; in this section, I discuss the cognitive-behavioural approaches to BPD.

3.11.1. Dialectical Behavioural Therapy (DBT)

Linehan, who was the founder of DBT, believes that most of the therapeutic approaches to BPD have been predominantly psychological, whether psychodynamic or cognitive-behavioural; or they have been highly influenced by biological psychiatry. She recommended a bridge between these two disciplines. She founded DBT based on the biosocial theory of personality functioning (Linehan, 1993). This theory indicates that

BPD is primarily a pervasive disorder of the emotion regulation system. This principle guides all interventions which are applied as a psychoeducational framework for clients and therapists. From this outlook, BPD symptoms and behaviours function to regulate emotions (e.g., self-mutilation) and the resultant psychopathology results from failed emotion regulation (e.g., dissociative or psychotic symptoms) (Dimeff & Koerner, 2007). Based on DBT hypotheses, emotion dysregulation is developed and maintained by both biological and environmental elements. Biological factors include differences in the central nervous system (e.g., due to limbic system reactivity, attention control, genetics, and extraordinary life-events occurring in early childhood or in the period of foetal development) (Dimeff & Koerner, 2007). Environmental factors include mainly invalidating family and societal circumstances that act insensitively and inappropriately on the person's vulnerable state. BPD patients are regarded as deficient in emotion modulation skills, and these troubles have their roots in biological predispositions which are aggravated by specific environmental experiences such as an invalidating environment. (Linehan, 1993). The notion of "an invalidating environment" includes non-recognition of the actual state of the person by criticism, punishment or being inattentive to his/her needs. Within an invalidating environment, intense emotional reactions are often required to provoke a helpful response from others. Thus the environment strengthens the harsh reactions. In such an environment, the person's emotional expression is not empathically validated; their reaction is not mirrored and put into words to increase understanding of the reality, and the child does not learn how to modulate her/his emotions. The environment also fails to teach the child when to trust her own cognitive and emotional responses as reliable reflections of true interpretations of events. Thus, they tend to invalidate their own understanding and feelings (Linehan, 1993).

Although DBT has some elements in common with psychoanalytic and client-centred approaches to therapy, it is the application of behavioural therapy, mindfulness, and dialectical philosophy that are its fundamental elements (Dimeff & Koerner, 2007).

3.11.1.1 Behaviour therapy in DBT

A major part of DBT is devoted to teaching skills that increase interpersonal effectiveness, to modulate extreme emotions and to validate and trust one's own thoughts and emotions (Linehan, 1993).

3.11.1.2 Dialectical philosophy in DBT

The dialectical idea is that all propositions have within them their own contradictions. The truth is paradoxical and the oppositional, interconnected nature of reality culminates in a wholeness continually in the process of change. It is the interaction between the thesis and antithesis potencies within each system that produces change. Dialectical change is an important principle in DBT. The opposites could be good and bad, positive and negative, nature and genes, person and environment or acceptance and change. The central dialectical notion that DBT applies is the idea of maintaining a balance between validating and accepting the current emotions and behaviours of the patient and encouraging him/her to change. Change can only occur in the context of acceptance and the therapist is required to balance acceptance and change in each interaction (Linehan, 1993). Dialectical thinking requires the ability to see reality as multifaceted, to transcend polarities, to address contradictory thoughts and to integrate them (Linehan, 1993). The overall objective of DBT is not to guide patients to see only black and white, but to obtain a synthesis of the two that does not deny the reality of either (Linehan, 1993). This emphasis on dialectical thinking in DBT is in line with the emphasis on integrating

contradictions in psychoanalytic approaches and addressing dichotomous thinking in cognitive therapy.

3.11.1.3 Application of mindfulness techniques in DBT

Mindfulness is considered “the core skill” in DBT as it is hidden in the nature of other skills applied in this approach (Wagner, Rathus, & Miller, 2006, p. 218). Mindfulness was derived from Buddhist practice and can be defined as a quality of awareness that involves maintaining one’s consciousness alive to the reality happening in the current situation. This form of awareness involves paying non-judgmental and intentional attention to the present moment. Hypothesized mechanisms of change for mindfulness are thought to occur through exposure to previously avoided emotions, sensations, and thoughts. Nonjudgmental consideration of distressing emotions without avoidance constitutes the exposure that does not reinforce the stimulus (Wagner et al., 2006). Mindfulness techniques are also used in teaching emotion regulation skills, by changing the emotion-linked response and promoting actions which at first seemed incompatible with the anxiety-generating idea (Wagner et al., 2006).

3.11.2. Schema Therapy

Schema therapy in another key cognitive approach to the treatment of BPD. This new psychological treatment integrates knowledge from different approaches into a coherent systematic therapy (Edwards & Arntz, 2012). Schema therapy was originally developed as an adapted version of cognitive therapy, well-suited to individuals with chronic psychological disorders, with greater emphasis on childhood experiences and early schemas. Schema therapy also incorporates relational and experiential therapeutic approaches (Edwards & Arntz, 2012). The concepts of attachment and internal working

model, describing how early experiences shape the underlying cognitive structures, influenced the schema therapy theory. Thus, one of the main tenets of schema therapy, in contrast to cognitive therapy, is its developmental perspective and emphasis on childhood needs. This emphasis on the past and parenting styles stems from psychodynamic therapies (Kernberg's transactional analysis) and attachment-oriented therapies, and encouraged schema therapists to introduce limited re-parenting techniques. Schema therapy greatly directs classic cognitive therapy to apply imaginary techniques and experimental works borrowed from gestalt therapists (Edwards & Arntz, 2012). Schema therapists believe that experimental works in therapy lead to deeper emotional confrontations and change. The concept of schema mode in schema therapy represents a state of mind with a degree of dissociation from other states of mind. The intense dissociation between states of the mind is considered as an important psychopathology leading to personality disorders. Conceptualizing dissociation in schema therapy is very similar to dissociated self-states in cognitive analytic therapy.

Schema therapy has been discussed in Chapter 1 (pp. 22-53) of the thesis.

3.12. Dissociation and Borderline Personality Disorder – Historical Background

Dissociation can be defined as a failure of integration of information, thoughts, affects and experience (Putnam, 1997). Curiously, dissociation has also been remarkably the subject of psychodynamic discussion (Kennedy et al., 2004). Dissociation can be understood as existing across a spectrum that includes all people, varying in degrees from healthy to maladaptive forms (Putnam, 1997). Janet (1859-1947) is the first theorist to

explain dissociation. Janet made a link between hysteria and unassimilated traumatic memories. His work predicted the current definition of PTSD[23]. He observed that when people are scared or overwhelmed by extreme emotion, they are unable to process the experience into existing mental frameworks, and are thus unable to connect the event with the rest of the personal memory (Howell, 2005). The thoughts and emotions related to traumatic experience operate below the level of consciousness, a level that was called by Janet the "subconscious" (Howell, 2005). These thoughts install themselves in the mind like a parasite. They are not known to the beholder and their power depends on their isolation; however, they continue to intrude and impact upon perceptions and behaviours (Howell, 2005; Janet, Paul, & Paul, 1925). As a result, in Janet's understanding, trauma overwhelms the mind's capacity to integrate multiple memories and perceptions. Dissociation occurs when the individual is incapable of synthesising the memory. Janet defined hysteria as a mental depression that narrows the field of consciousness and is characterised by a tendency to the dissociation of the system of thought and personality (Howell, 2005). He asserted that posttraumatic dissociation can reduce an individual's sense of will.

Freud assimilated some of Janet's concepts into his theory. Also, Freud did not write about dissociation as directly as Janet; he pursued different forms of dissociation including splits between conscious and unconscious thoughts, and the split between the ego and the superego. Freud substituted the concept of dissociation with repression (Howell, 2005). Thus, his version of dissociation has its roots in psychic defence. Part of the experience, either memory or wish, is taken out of consciousness and kept in an unconscious space by a defence mechanism called repression. Unlike Freud, Fairbairn

[23] Post-Traumatic Stress Disorder

did not define the splits in the mind based on the clash between "id" energies and other parts of the mental structure. He believed the "ego" is object seeking in nature and internalization of the contrasting parts of the object is the cause of the split in the ego. He asserted that when the child encounters a frustrating object, he/she internalizes the "bad" characteristics of that object. As the child is in need of the same object to feel safe and cared for, he/she splits the object in his mind, which helps him to see that object as "good" as well. The ego identifies with these parts of the object, but keeps them separate. Fairbairn also added another part of the ego, which he called the central ego, that represses the bad from consciousness, and the bad ego pushes the central ego to also repress the good as well. These situations cause the child to use a divide-and-conquer technique to subdue both libidinal need and aggression. In Fairbairn's view, these ego structures, which are internalized objects, have their own agency and dynamism (Fairbairn, 1952). In conclusion, the pioneers of psychodynamic thinking, including Janet, Freud, and Fairbairn, all described a structural process of dissociation for the personality.

Sullivan is another theorist who developed an interpersonally based theory of trauma and dissociation (Howell, 2005). Sullivan emphasized the centrality of the phenomenon of dissociation as the most fundamental ability of the mind to maintain its own stability (Bromberg, 1998). He believed that, as the self has the goal of sustaining security and preventing anxiety, it can strongly limit consciousness of experiences in the world and in oneself. This can end up in the dissociation of motivations and behaviours that have not been approved by significant others or culture. In this way, these experiences would be excluded from an individual's awareness (Howell, 2005).

Another significant theorist in the field of dissociation is Bromberg, who articulated a model of multiple, dissociated self-states (Howell, 2005). In his theory, dissociation

maintains the sense of illusionary unity when the forces of traumatic stress are excessive. In the face of trauma, the automatic hyperarousal and the intensity of emotions make it impossible for the mind to process and encode the information into verbal memory (Bromberg, 1996). The traumatized personality structure is watchful for trauma. This vigilance has a protective function; however, it consumes a high amount of energy. Isolating and dissociating the thoughts and feelings of the traumatic experience would lead to continuous reassertion and re-enactment of the scenarios, as they are not yet assimilated and recognized in the individual's memory. Thus the dissociative cure would be repeated to reduce the fear and anxiety the person experiences in an attempt to remedy the past injuries (Bromberg, 2003; Howell, 2005).

Bromberg believed that dissociation is the underlying process contributing to all personality disorders. Independent of type, PDs can be understood to result from defensive responses to the potential repetition of childhood trauma or neglect. If the child who was exposed to a traumatic situation could not maintain the normal illusion of self-unity and process the trauma in a symbolic way, a configuration of "on-call" self-states can be imperceptibly and gradually constructed (Bromberg, 1995). Bromberg believed that different self-states have incompatible intentions and emotions. Therapy for personality development includes an interpersonal process in which the transformation from dissociation to recognisable intrapsychic conflict is able to take place (Howell, 2005). Health in Bromberg's view is the "ability to stand in the spaces between realities without losing any of them…….the capacity to feel like one self while being many" (Bromberg, 1993, p. 166). One of the important ways that the unrecognized and un-symbolized "not-me" parts of the self can be communicated to the therapist and identified by the client is through enactment (The reactivation of dissociated systems of self and

object representations (Davis & Frawley, 1994)). These states must be seen by both client and therapist and to become thinkable about and the communicated by words and concepts (Bromberg, 1994). Bromberg believed that dissociated self-states come back in strange and horrific forms, including enactment experiences, to haunt individuals until they can become a part of narrative memory (Howell, 2005).

Another theorist who provided a different definition of dissociation is Donnel Stern (Howell, 2005). Unlike Freud's view of repression, in which some effort is required to repress a thought or put it out of awareness, Stern believed that consciousness or awareness is an effortful action (bringing unconscious contents of the mind into consciousness requires endeavour) (Howell, 2005). We must take actions to formulate experiences and tolerate the potential risk of the anxiety that such awareness might provoke (Howell, 2005). Stern asserted that we unconsciously avoid processing specific aspects of experience into meaningful concepts, as doing so might lead to attaining threatening knowledge (Howell, 2005). He defined dissociation as an unformulated experience, which results from an unconscious decision to not reflect on certain experiences. Stern expanded Sullivan's key concept of "selective inattention" (Sullivan, 1940, p. 185) that an individual may simply avoid any focus on the frightening information. The self-system is then structured around these dissociated gaps or selectively unattended contents. These excluded experiences are deprived of potential linkage to other areas of the mind. Stern, like Sullivan, believed that dissociated and unformulated experience could become known when there was a one-to-one correspondence between the dissociated experience and the language that could spell this out (Howell, 2005). Highlighting the constitutive power of language, Stern believed that

verbal-reflective meaning needed to be created and spelled out in order to build consciousness (Stern, 1997).

According to another dissociation theory introduced by Van der Hart (2000), the most fundamental structural division of the personality is between the "normal part of the personality" (ANP) and the "emotional part of the personality" (EP) (Howell, 2005, p. 130). The former is devoted to non-defensive daily action systems such as sociability and play, while the latter is devoted to the survival of the individual in conditions of threat (Howell, 2005). The EP organizes hypervigilance, fight, flight and submission. Under the influence of trauma, these two action systems become segregated from each other. The ANP is interfered with by the traumatic memories of the EP in dreams, nightmares, somatoform symptoms and PTSD flash backs (Howell, 2005). As a result, the ANP is vigilantly avoidant, so that it ends up in supressing actively the traumatic topics, resulting in avoidance of intimacy and emotion (Howell, 2005). In general, EP links to the intrusive positive symptoms (including re-experiencing of the trauma) found in posttraumatic disturbances of PTSD; ANP corresponds to negative symptoms including inhibition and loss (Van Der Hart, Nijenhuis, Steele, & Brown, 2004).

Another theoretician who introduced the neodissociation theory is Ernest Hilgard (Howell, 2005). He asserted that the unity of consciousness is an illusion. He believed that planning and action usually take place outside consciousness; therefore, dissociation does exist and is endemic (Howell, 2005). Another assumption of his theory is that there are subordinate cognitive systems, each with its own unity and autonomous functions. Also, although there are interactions between these systems, they can become isolated from each other. This idea explained shifts in consciousness, and is supported by Donald Hebb, who articulated this sentence: "neurons that fire together, wire together" (quoted in Howell,

2005, p. 140). Hilgard also believed that there is a central ego and a hierarchical control that manages the interaction between its subsystems. These subsystems are numerous and might be latent or actuated in the mind (Hilgard, 1992).

Nijenhuis, Vanderlinden, and Spinhoven (1998) have examined traumatic experience from the perspective of animal reactions to trauma, which may have counterparts in human response. They argue that the symptoms of dissociative disorders are in many ways similar to animal defensive reactions to severe threat, including passive reactions like freezing and total submission, as well as active defences such as fight or flight (Ryle, 2007).

Dissociation has been described in attachment theory by the concepts of "segregated internal working models" and "disorganized attachment" (Howell, 2005, p. 147). As Bowlby (1980) stated, if the child's attachment and proximity strategies become chronically activated but not settled, as when continued separation, rejection, or punishment occur, then the defensive exclusion of attachment bonds becomes evident (Blizard, 2003). To react against cognitive, affective and behavioural collapse, the child may form segregated systems that separate attachment related information from awareness. As a result, the child might construct multiple representations of self and other, which are paradoxical and hard to integrate (Blizard, 2003). Solomon and George (1999) believed that although Bowlby considered such defensive exclusion as repression, it might be better defined as dissociation.

Disorganized attachment results when the caregiver frightens the child (Liotti, 2002). Seeking proximity to the caregiver, as the infant's haven of safety, which is the natural consequence of normal anxiety, and then experiencing fearful emotions toward the same caregiver places the child in the position of overwhelming paradox (Liotti, 2002). Hesse

and Main (1999, p. 484) named this paradox “fright without solution”. These conflicting motivations may cause the child to freeze, or make his/her alternate between approaching and avoiding the caregiver (Blizard, 2003). “Fright without solution” describes the dilemma of the child who is evolving into the disorganized attachment. Disorganized attachment often develops in reaction to overt maltreatment, neglect or frightening behaviours and contradictory caregiving strategies (Blizard, 2003). Liotti (1999) has hypothesized that disorganized attachment predisposes to dissociative disorders. Both trauma and D-attachment are associated with restriction of playfulness, reduced reflectiveness, and inability to make use of metaphors and symbolization. Both trauma and D-attachment are associated with the higher release of cortisol in the body, which can damage the hypothalamus, leading to emotional dysregulation (Fonagy, 2001). Fonagy (2010) postulated that disorganized attachment interferes with the ability to think about thoughts of self and others that he has called mentalization. Children need the understanding and reflections of their parents on their inner experience to develop a viable self.

The psychological self evolves through the perception of oneself in another person’s mind as thinking and feeling (Fonagy, 2001). In contrast to the traditional object relation theories which postulated that the child internalizes the caregiver’s image, Fonagy hypothesized that the child internalizes the caregiver’s image of “the intentional infant” (Howell, 2005, p. 156). The children who have traumatic experiences in their relationship with their caregivers turn away from them to protect themselves against caregivers’ hostile intentions. In this way, the disruption of attachment bond leads to the diminution of self-reflectiveness (Howell, 2005). Whereas Fonagy’s proposal about the effect of trauma on mentalization is that it stunts the evolution of metacognitive processes, some

other theoreticians in the field of attachment theory including Lyons-Ruth emphasize the development of segregated internal working models. These working models as described above, reflect unconscious models of relationships. When these working models cannot be linked with each other, as for instance when different relationship patterns between caregiver and child are extremely contradictory and the resultant paradoxical emerging sense of purposes or wishes have not been assessed or resolved, these patterns can develop into segregated systems of attachment. These inconsistent and unlinked internal working models can be understood as dissociated self-states. When the collaborative and soothing relationships that provide the process of understanding the relationships, verbalizing and articulating are not available, the integration of conflicting working models may become hard to achieve.

The implications of the insight provided by attachment and dissociation theories are significant for psychotherapy. Blizard (2003) concludes that it might be more fruitful for treatment goals to acknowledge the internal working model of each self-state and try to identify what relationship it is based on, rather than to characterize the individual as a whole as having a specific attachment style (Howell, 2005).

Exploring Ferenczi's (1949) concept of identification with the aggressor, it is believed that trauma-related identifications can impoverish an individual's identity as the child feels physically and morally helpless. The overpowering authority of the abusive adult can rob the child, who is weak and vulnerable, out of his/her senses and compel him/her to subordinate themselves like automata to the will of the powerful person (Ferenczi, 1988). Identification with the aggressor's goals and behaviours overtake and replace the child's agency and initiative. Similar to Kernberg's suggestion about the reason for splitting to develop, the child tries to keep feelings of tenderness by dissociating these

from the memories of aggression. As a result, at least two strongly incompatible self-states, those of abuser and victim, appear in the mind. These states also reflect the tacit latent model of relationships that evolve from the confluence of trauma and attachment. In the real life situation, the number of these self-states might be more than two (Howell, 2005). The disconnection between states defends against extreme anxiety and fear, while efforts at integration would demand substantial and distressing mourning, which could be overwhelming to experience all at once. Boundaries between these inner working models of the mind become impermeable due to continual activation of distress. While these segregations and disconnections could be effective in childhood, in the long run, this defence evolves into a damaging compulsive avoidance – which is a cure that disrupts an individual's life and relationships.

As Bromberg (1994, p. 538) described, the rudimentary problem for a person with a traumatic experience which causes a personality disorder becomes their own "self-cure"[24]. Splitting and projective identification can now be understood as the interpersonal language of dissociated self-states. In projective identification, the person attempts to disown a split-off or dissociated part of him/herself by putting it into another person in order to be rid of or evict it. The dissociated emotion is contained in an unwelcome and split-off self-state that is better handled if it can be pushed across into another person. In this way, projective identification may be understood as an "interpersonal manifestation of intrapsychic dissociation." Howell (2005, p. 185). Projective identification includes the other person's reciprocation with affect which the first person narrowly and indirectly expected (Ryle, 1994).

[24] The agreement of their inner world with their primitive defences.

Another way to conceptualize dissociation is through consideration of the division between procedural and declarative knowledge. Procedural processes contain implicit knowledge, which is not accessible to ordinary verbal consciousness, and it is believed that the procedural is dissociated from the declarative. Schore (2003) asserted that dissociation involves an avoidant strategy, which is the consequence of trauma and maintains the memory of trauma in implicit procedural memory in the right brain, which is not accessible to the conscious and verbal mind.

The specific victim and aggressor states of mind may have biological substrates that are similar to animal states in conditions of predation, including fight, flight, freeze and total submission. Perry (2000) outlined that exposure to trauma changes the neurodevelopmental processes by two forms of reaction: hyperarousal and hypo-arousal. The hyperarousal state of mind corresponds to an animal state which includes fight or flight. The related symptoms involve vigilance, behavioural irritability, and heightened body movement. Hypo-arousal corresponds to when an animal totally submits and includes dissociative symptoms such as numbing, analgesia, fainting, derealisation and depersonalization. The hypo-arousal state is also analogous to learned helplessness or immobilization that is adaptive to inescapable threat or pain.

Having discussed some of the historical theories and observations about dissociation, let me turn to a more detailed account of the cognitive behavioural model of dissociation.

3.12.1. Cognitive behavioural account of dissociation

Beck (1996) asserted that a number of psychological problems were not adequately addressed by the general schema model. Beck expanded his schema model to a more complex set of systems he named “modes”. He believed that a more complex organization

of schemas is involved in some intense psychological reactions. These arrangements of schemas produce a systematic vulnerability or reaction. Beck has introduced two main additions to the schematic processing theory. First, he defined the concept of "mode" as a sub-organization of personality that incorporates a network of cognitive, affective, motivational and behavioural systems. Each of these systems has structures called "schemas". Thus schema modes consist of cognitive, affective, motivational and behavioural schemas. Beck also includes the physiological system as an important component of the schema mode. Each system of a mode has a particular individual function; however, they operate in synchrony to conduct a coordinated, goal-oriented strategy. Each mode has evolved to deal with particular problems and consists of a set of schemas responsible for encoding different information. These modes are known to operate automatically, without conscious control. Beck highlighted the importance of "primal" modes, which are derivative of prehistoric survival reactions and organizations that evolved in ancient times. They are oriented towards crucial objectives such as survival, security and safety. Beck believed that exaggerated forms of these primal modes are manifested in psychiatric disorders, for example, defence from predators. Secondly, the concept of charges or cathexes was also introduced in Beck's new model, which explained the transition from an almost quiescent state to a strongly active state. A specific mode is commonly silent or not apparent at first; however, as a result of consecutive related experiences, this mode will acquire accumulating charges or energies until it reaches to the level or threshold for complete activation. (Salkovskis, 1996).

In Beck's revised theory, there is a difference between simple schematic processing and modal processing. When a primal mode gets active, all of the systems involved, including cognitive, affective, behavioural and physiological remain energized for a period of time

after the activating circumstance first arose. Some major dysfunctional modes like depression remain operative for a long time after the stimulating event has disappeared (Salkovskis, 1996). In contrast, schematic processing includes brief interpretive reactions, which do not necessarily end up in sustained mobilization and action.

Diverse psychiatric disorders can be conceptualized in terms of primal modes. There are, for instance, depressive, anxious, panic, suicidal, particular phobic modes, and obsessive-compulsive modes corresponding to each of the clinical problems. The personality disorders can also be understood in terms of modes. When individuals with avoidant, histrionic, dependent or narcissistic personality disorders experience distress, they may switch into a hostile, anxious, depressive, or another mode. Personality disorders may also be distinguished in terms of their prevalent or habitual modes that play a continuing role in the individual's daily life. Therefore, avoidant, narcissistic and paranoid personality disorders are characterized by chronic avoidant, narcissistic and paranoid modes. In personality disorders, the modes are dominant in most of the situations and do not require a strong stimulus to operate them (Salkovskis, 1996). The concept of mode provides a foundation for an integrated theory of psychopathology and personality. Modes are defined as operational and structural units of personality that act to adapt the person to a changing environment. Each of the psychological disorders could be described in terms of a particular mode with idiosyncratic cognitive, affective, motivational and behavioural patterns (Salkovskis, 1996).

From a functional point of view, the person saves more energy by having quick access to a sub-organization corresponding to relevant cognitive, emotional and motivational schema modes than to rely on single schemas and cognitions triggering affect and motivations. In addition, availability of the clusters of cognitions and memories facilitates

parallel processing in a way that the person is able to respond immediately to many relevant environmental stimuli (Salkovskis, 1996).

A further addition to the theory is the "orienting schema" concept (Salkovskis, 1996, p. 20). An orienting schema is an organized set of steps or a template that sets the required conditions for activating the mode. Therefore, a glimpse at a potentially threatening person can initiate a concomitant appraisal of the personal relevance, dangers, circumstances, coping procedures, and anticipation of the result of a given strategy. At the same time, the organism becomes ready to set the required conditions for operating the mode. When the mode is activated, the coordinated schemas come into play. As the cognitive schemas assign meaning to the situation, the corresponding affective, motivational and behavioural schemas are energized (Salkovskis, 1996). The cognitive schemas contain beliefs, rules and memories that form the flow of variables into the cognitive products: "interpretations, predictions, and images" (Salkovskis, 1996, p. 21). The preliminary cognitive process is generally unconscious; however, the products proceed into consciousness.

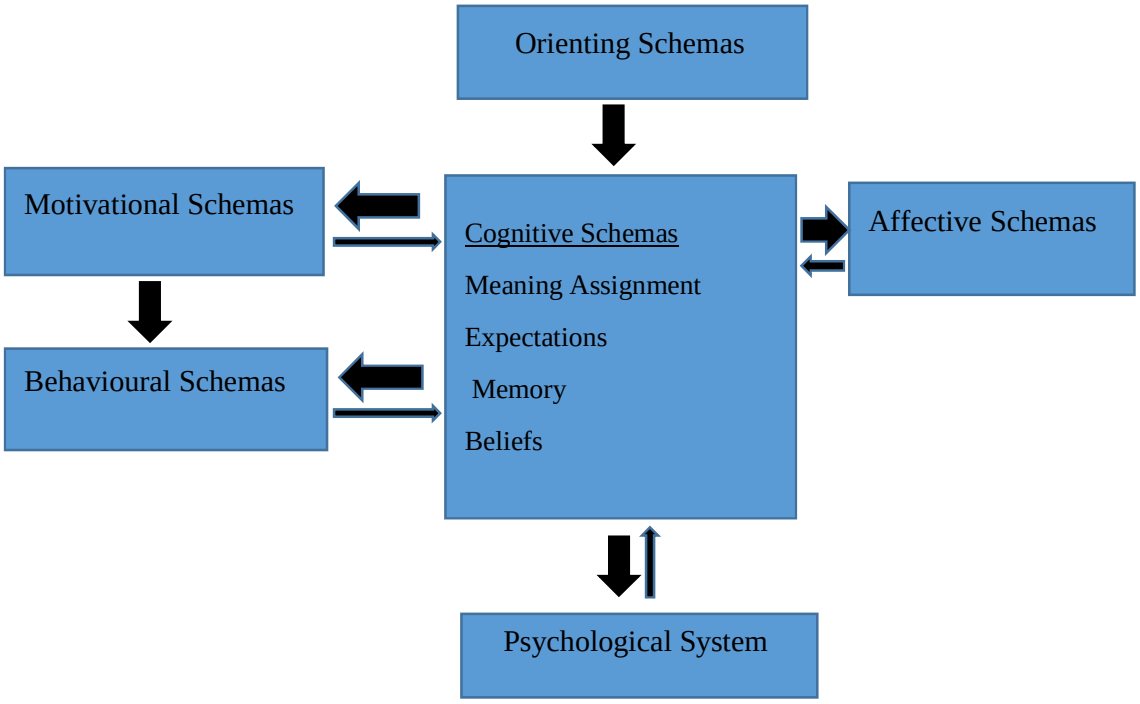


Figure 5: Activation of the mode addapted from Salkovskis (1996, p. 7)

Naturally, there is information exchange between schemas throughout the system, both within and across modes, so that switching between modes is smooth and appropriate. An important proposition of Beck's model is that dissociation can happen at different stages of information processing. Kennedy et al. (2004) suggested that dissociation or inhibitory decoupling of mental processes usually occurs at three stages: 1- At the primary automatic processing phase; 2- Within modes; and 3- Between modes.

3.12.1.1 Stage 1, automatic dissociation:

This form of dissociation is seen when the decoupling of information occurs at the level of orienting schemas. At this level, very early information processing categorizes the material as threatening and activates a mechanism that inhibits the process of associating

the facts related to the event. During traumatic circumstances, this form of dissociation occurs unconsciously at an early stage to prevent adequate processing of the event into the mind, which might lead to the abnormal storage of memory in a fragmented rather than incorporated form. This form of dissociation usually continues after the traumatic experience to prevent further anxiety and pain. In this way, the traumatic contents are not elaborated into the meaningful autobiographical memories.

3.12.1.2 Stage 2, within mode dissociation:

This form of dissociation is the result of decoupling of the links between affective, cognitive, behavioural and physiological schemas within the mode. Flat affect following trauma might be related to the decoupling of an affective schema from the rest of the schematic systems in a mode. Ritualistic behaviours, behavioural re-enactment, and superstitious behaviours might reflect the separation of the behavioural schemas from other schemas. Conversion symptoms (e.g. loss of function) can be explained as the detachment of the physiological schemas.

3.12.1.3 Stage 3, between mode dissociation:

This form of dissociation happens when different modes decouple partially or totally. This type of dissociation is usually associated with more severe clinical presentations. For instance, dissociative identity disorder involves high between-mode dissociation, whereas the state-changes of BPD may indicate less intensive between-mode dissociation. Impulsive actions might be the consequence of state-switch from a mode in which different schemas are integrated, into a mode in which they are fragmented. Derealisation and depersonalization, amnesia, fugue states, and lack of awareness of dissociated sub-personalities might be linked to the individual's feelings or subjective experience when

the state switches occur. Different stages of the dissociation from primary and less severe stages to the more severe stage are illustrated in the Figure 6.

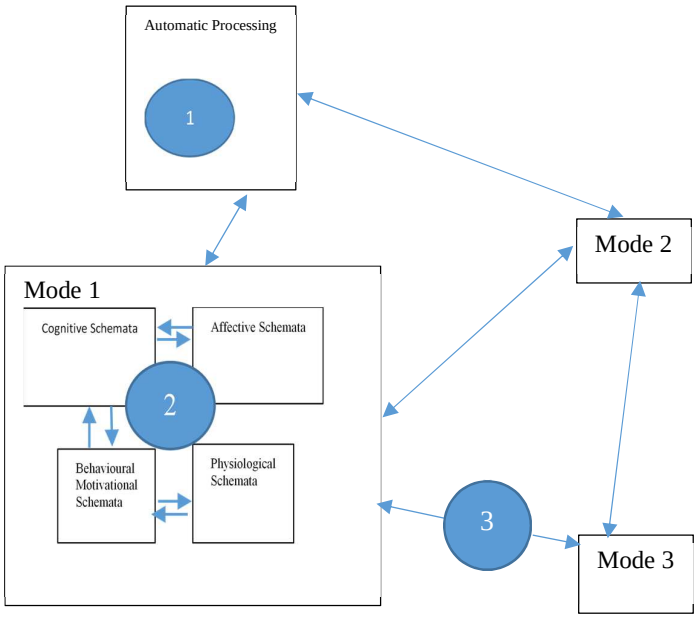


Figure 6: Personality Structure and sequential stages (1, 2, and 3) of dissociation adapted from Kennedy et al. (2004, p. 29) to show the potential to switch between modes.

Jeffery Young continued to apply the Beck's schema mode concept in his treatment of borderline patients. As dramatic shifts of states in BPD patients were not sufficiently explained by simple schema theory, Young and his colleagues highlighted the role of schema modes in understanding BPD. Another reason that led them to move away from the schema model of BPD was the result of their empirical schema assessment of BPD patients; they found that patients with BPD have most of the 18 early maladaptive schemas introduced by Young. This fact suggested that the schema model was ineffective to provide a comprehensive formulation guiding an efficient treatment. There was a need

for a more workable unit of analysis. Young therefore applied the schema mode concept to the formulation and treatment of borderline personality disorder and grouped schema modes into four broad categories; child modes, coping modes, parent modes and healthy adult mode (Young et al., 2003).

Young argued that the schema mode introduced by schema therapy is different from the definition suggested by Beck. Beck emphasized the mode concept to refer to the evolutionary goals behind the activation of a set of schemas. Beck's latest revision was directly derived from the previous schema theory without much contrast with it. Young defined his mode concept as a way to differentiate between trait and state forms of schema modes. Young argued that the combination of schemas and coping strategies, which are defined as schema modes in his theory, could be seen as states (changing patterns of activation and deactivation) and also could be understood as traits (long-term enduring patterns). He argued that conceptualizing the state forms of schema modes proved useful for understanding the state switches and dissociation in normal and abnormal personality structures. Beck had not incorporated the role of coping strategies for perpetuating schemas. Young defined three forms of coping style and integrated the schemas and coping strategies into his schema mode concept (Young et al., 2003).

Young also postulated that the schema modes could be dissociated from each other (Young et al., 2003). According to this schema therapy perspective, schema modes can be identified by the degree to which a particular schema-driven state has become separated, or dissociated from a person's other modes. A maladaptive schema mode, therefore, is a part of the self that is partially or highly cut off from other aspects of the self. Young et al. (2003) believed that a pathological schema mode can be described in terms of the point on a continuum of dissociation at which the specific mode lies. As

highly dissociated modes are not integrated with other modes, the individual might experience them suddenly and severely; however, less dissociated modes might enable an individual to experience different modes simultaneously and smooth out or have fewer mode shifts. Extreme forms of mode shift are seen in dissociated states of dissociated identity disorder (Young et al., 2003).

Kennedy et al. (2004) suggested that in addition to the proposed dissociation between modes in Young's theory, the construct of a coping schema mode of avoidance, as suggested by Young et al. (2003), is analogous to dissociation in cognitive science. In this point of view, dissociation is understood as a coping strategy that helps the individual to preserve a detached relating style, or a blank state of mind that blocks thoughts and images, and thus avoids any internal and external stimuli that could trigger the activation of the schemas. This is linked to the assumption that intolerable emotions are associated with a pathological schema. The person makes robust, conscious or unconscious, cognitive or behavioural efforts to refrain from intolerable emotions. For example, avoiding meeting new people if she/he has a "defectiveness/shame" schema. These processes have been shown to involve both forms of conditioning: classical and operant (Kennedy et al., 2004). This avoidance ultimately culminates in perpetuating and maintaining the contents and mechanisms of maladaptive schemas.

In general, dissociation is assumed to operate over the whole information-processing system, including at the level of overall personality structure. The "failure to integrate what is normally integrated" includes the reduction of associations between modes of functioning. This fragmented structure might be functional in the early years of development; however, they usually become problematic in adulthood. The by-product of such between-mode dissociation is the switching or state-changing, lack of sense of

self, and mood instability in BPD, along with intense emotional responses to subordinate interpersonal problems. The operation of a mode of functioning adopted in childhood appears unmodulated by other modes present in the person (Kennedy et al., 2004).

3.13. Integrative Summary

Based on the review of both traditional and recent theories that have been proposed to explain BPD, the following notions stand out. While the psychoanalytic perspectives highlight the influence of defences, including, splitting projective identification and hostile object relations in BPD psychopathology, more recent psychoanalytic perspectives do not use drive/defence terminology and highlight the influence of reciprocal role patterns and the lack of mentalization capabilities in BPD patients. Meanwhile, both old and new psychoanalytic approaches emphasize the fragmentation of thought and behaviour in of those with BPD, which result from the dissociation of mental states. New endeavours to define BPD, based on the observable criteria, also highlight the inconsistency or instability of personality functions in BPD patients. Neuroscientific approaches to BPD reveal two important often co-occurring traits of BPD patients - impulsivity and affect instability- with their biological correlates. A review of the history of the theoretical thinking regarding dissociation, showed that most of the pioneers of psychodynamic thinking including Janet and Freud suggested some forms of structural dissociation for the personality. More recent cognitive-behavioural accounts of dissociation also posited a structural theory of dissociation. Schema therapy has incorporated the concept of dissociation in relation to the concept of schema mode. In the light of this theory, a deeper understanding of the intense shifts in the behavioural pattern of BPD patients is achieved.

Chapter 4. Methodology

The overall aim of this research project is to study the prominent schema modes and their relationship with dissociation in borderline patients. The population being studied in this research is adolescents and young adults. Mental health professionals often believe that the DSM-IV diagnostic system does not enable them to diagnose PDs in people younger than 18 years. This is not a correct assumption. As mentioned in Chapter 1, DSM-IV and DSM-5 allow for the diagnosis of PDs in adolescents when the symptoms have been present for at least one year (American Psychiatric Association, 1994, 2013). However, the essential focus of this study is on psychological constructs (i.e. the borderline personality structure) rather than psychiatric diagnosis. The objective of this study is to study the borderline structure in those showing higher criteria for BPD, without positing claim to the exclusivity or specificity of the results of this study to those with BPD diagnosis. Thus, I did not specifically or exclusively consider only the accepted criteria applied to the diagnosis of BPD. Hence, I considered people who have sought mental health services and present with more than four BPD criteria. The fact of the stability of PD in the transition from adolescence to adulthood which was discussed in the first chapter raises the question regarding when it is feasible to detect and treat a PD. The findings suggest that the clinicians should not wait until a PD is stable, by which time people's lives might be irreversibly damaged (Chanen et al., 2004). Understanding the cognitive emotive constructs of the BPD phenomenon in adolescents would help clinicians to develop preventative and effective interventions for BPD patients when they are younger. In order to study the cognitive emotive constructs (schema modes) of borderline patients in comparison with those of non-patients, and to study the relationship

between these constructs and dissociation, a research method is established which will be discussed in this chapter. Therefore in this chapter, first the questions of the study are described, then the methodology, procedures, measurements related to the data collection and, statistical analyses are discussed.

4.1. Questions of the Study

1. Which schema modes better characterize adolescent-youth borderline patients in comparison to non-patient subjects?
2. Are there significant associations between schema modes and dissociation in adolescent-youth BPD patients?
3. Which schema modes significantly predict the dissociation score in adolescent-youth BPD group?
4. Which Axis I and Axis II disorders are associated with BPD?

4.2. Hypotheses of the Study

1. Adolescent-youth BPD patients will score lower than the non-patient group on the healthy modes and the higher on the vulnerable child, angry child, the enraged child, the impulsive child, punitive parent, the demanding parent, detached protector, detached self-soother, and the compliant surrender schema modes.
2. The level of dissociation will be significantly higher in the adolescent-youth BPD group than the non-patient group and the presence of maladaptive schema modes will be associated with higher dissociation in borderline patients.
3. The child schema modes will significantly predict the dissociation scores.

4.3. Procedures and Measures

In order to examine the questions of this study, a quantitative, cross-sectional research design was developed. An adolescent borderline patient group and a non-patient group were recruited to explore the question.

4.3.1. Patient group

The patient group consisted of 42 adolescents, aged 14-24 years, who met at least 4 BPD criteria of 9 DSM-5 criteria for borderline personality disorders (section II). Four diagnostic criteria have been found to provide similar sensitivity, specificity, predictive value and diagnostic efficiency to five criteria in distinguishing BPD patients (Lawrence et al., 2011; Nurnberg, Hurt, Feldman, & Suh, 1988). Before administration of the diagnostic interview, the diagnosis of BPD trait/disorder was discussed in clinical review sessions with the treating adolescent psychiatrist. The patients who were considered highly probable to receive the BPD diagnosis were invited to participate in the study. A psychiatrist, a social worker, and three psychologists were the regular members of the clinical review sessions.

4.3.1.1 Eligibility criteria

Participants were required to write and speak English. Any proposed participants with a DSM-5 diagnosis of Intellectual Disability (ID) were excluded from the study. The diagnosis of ID was determined from the patient's medical records. There were no other exclusion criteria.

4.3.2. Ethics Approval

Ethics approval was obtained from:

- *Monash Health Human Research Ethics Committee*

The Monash Health HREC reviewed the application at its meeting held on 20 February 2014. The HREC was satisfied that the responses to their correspondence queries of 26 February 2014 had been sufficiently addressed. The HREC approved the above application on 25 March 2014, on the basis of the information provided in the application form, protocol and supporting documentation.

The reviewing HREC is accredited by the Consultative Council for Human Research Ethics under the single ethical review system.

4.3.3. Non- Patient Group

42 adolescent participants aged 14-24 were recruited as the non-patient group. The non-patient group was recruited via flyers posted or handed out at train stations, shopping centres, libraries, sporting facilities across Melbourne as well as social internet websites. Age, gender, birth place, religion, marital status, employment status and education were monitored in an effort to achieve reasonable matches on demographic variables between two groups.

4.3.4. Sites of Recruitment of the Patients

Although all parts of Monash Health, these sites were used:

1- Child & Adolescent Mental Health Service in Dandenong in collaboration with the Intensive Mobile Outreach Support (IMOS) team, Monash Health.
2- Youth Mental Health Unit of Dandenong Hospital, Monash Health.
3- Child Psychiatry Unit of Monash Medical Centre at Clayton, Monash Health.

4.4. Recruitment

Adolescents aged 14 to 24 with a possible diagnosis of borderline personality disorder were recruited from the three sites mentioned. Eligible patients were introduced to the researcher by the team of therapists. These teams made the decision about who would be potential participants in the study at their weekly clinical review sessions (in the IMOS clinic) and daily handover sessions (in the two hospital units). The potential participants were informed about the project by their treating team and then they were introduced to the main investigator by their treating clinicians. Those who were willing to participate in the study met the main investigator at the Child & Adolescent Mental Health Service in Dandenong or Monash Medical Centre; the main investigator gave the participants information regarding the project and also a copy of the consent form. For participants under age 18 years, it was a requirement that the Participant Information and Consent Form (PICF) was signed by both the patient and a parent or guardian. The parent consent forms were signed in a session provided by the patients' case manager and the investigator. The patients who were willing to come alone to the session were asked to bring the signed parent consent form, which had been sent to them before the session. The same process was done for non-patient participants as well. In this way, both parents and participants were informed regarding the project and the adolescents were offered the opportunity to participate.

The key elements of the consent form included: an explanation of the research status of the study; the prospect of psychological risk and the provisions for it; the lack of benefit of participation; the confidentiality of responses to study questionnaires; the voluntary nature of the study; the lack of consequence to medical care of the decision to consent or refuse to participate; and the freedom to withdraw from the study or to refuse to answer

specific questions at any time. The investigator read through the information with the participant and answered any questions the participant had regarding the purpose, methods, demands, risks, inconveniences, discomforts, and possible outcomes of the research. Participants were provided with a copy of the participant information form and a signed copy of the consent form to keep for their records.

All participants were given a Coles Gift Card of $ 40 as an incentive to complete the questionnaires and participate in the study.

4.5. Safety and Adverse events

There were no physical risks or side effects involved in taking part in this observational research. However, there was the potential for emotional risk associated with this research. Participants might feel distressed or upset by certain questions in the questionnaires, and therefore the investigator monitored participants' psychological distress throughout their participation.

An adverse experience was defined as any unintended or abnormal clinical observation that is not of benefit to the participant. The psychological health and welfare of participants were monitored by the investigator. Based on the protocol for the study, instances of distress or responses to questions that indicate suicidal ideation were reported to the participant's usual care team and site Principal Investigator, Dr Michael Gordon - adolescent psychiatrist and Unit Head for the Child and Adolescent Stream of Early in Life Mental Health Service (ELMHS) - for follow-up and referral as appropriate. Any adverse events would also be reported to the Human Research Ethics Committee, including anything that might warrant the review of the research, such as serious or unexpected adverse effects involving participants, complaints, or other unforeseen events

that might affect continued ethical acceptability of the project. No adverse events were reported by the participants of this study.

4.6. Refusal

As the participants voluntarily accepted participation in the study before the session, there were just two refusals in the patient group. These participants informed the investigator that they were not interested in continuing the interview and they were respectfully thanked for informing the investigator of that. The reasons given by the two withdrawals during the interview were: 1) The participant got tired, 2) The participant could not concentrate.

4.7. The procedure

After filling the required consent forms, the participants were asked to be interviewed for 15 minutes and then to complete the questionnaires. The interviews were audio taped in order to store the important information for diagnosis. It generally took 60 to 70 minutes for both the interview and the questionnaires to get done. If a patient became tired in the course of completing the questionnaires, they were allowed to have a break for coffee or tea or could complete the rest of the questionnaires in another session during the same week. For the non-patient group, the whole process usually took about 60 minutes, as most of the participants answered “no” to the majority of questions on the BPD screening questionnaire, leading to fewer follow-up questions being asked.

4.8. Data management

A great level of care was taken to maintain and protect the confidentiality of each participant’s information. The information collected was de-identified. Each participant

was given a unique numeric identifier, and a list matching participant names and code numbers was maintained separately on a password protected computer.

Hardcopies of signed consent forms were stored in a locked filing cabinet, separate to hardcopies of research data. The research data were labelled only with the individual's unique identifier and all other identifying details were removed.

In any publication or presentation, information was provided in such a way that participants could not be identified. Results will be published or presented at a group level and any information obtained in connection with this research project that can identify participants will remain confidential.

4.9. Sample Size

4.9.1. Power Calculations for Differences between Two Independent Means

Based on the Appendix Power (Howell, 2002) for power 0.80 and $\alpha = 0.01$, δ[25] must equal 3.40. Thus, having δ let us solve for n:

$$n = 2\left(\frac{\delta}{d}\right)^2$$

Equation 1 (Howell, 2002)

In this equation, "n" is the sample size, "d" is the effect size: ($d= \frac{\mu 1-\mu 2}{\sigma}$), α is the significance level and δ is the function of sample size: $\delta = d\sqrt{\frac{n}{2}}$.

[25] Howell (2002, p. 229) decided to split the sample size from the effect size to make it easier to deal with n separately. He needed a method of combining the effect size with the sample size. He used the statistic δ (delta) = d [f(n)] to represent this combination, where the particular function of n will be defined differently for each individual test.

Based on a study done by Lobbestael et al. (2010), the Cohen's d of Axis-II patients versus non-patients for all 14 Schema Mode Subscales were from 0.44 for Self-Aggrandizer to -2.5 for Happy Child. We measured the ideal sample size for each subscale using the above equation. For example, for the Vulnerable Child Mode, the Cohen's d for Axis-II patients versus non-patients is 2.27 and the n is calculated:

$N=2\ (\frac{3.40}{2.27})^2= 4.48$

Because the effect size of the Vulnerable Child Scale was large, a small sample was going to be satisfactory; I decided to consider the sample size needed for the hypothesized highlighted Schema modes in borderline patients based on past studies. The maximum sample size was calculated for Demanding Parent Mode which was 31. So in this study we decided to have more than 31 participants to allow for drop outs close to 25%, a sample of 40 was considered adequate.

4.10. Measures

4.10.1. Borderline Personality Disorder Diagnosis

In order to ensure that participants have traits of BPD meeting the required clinical threshold, the Structured Clinical Interview DSM-IV Axis-II personality disorders (SCID-II) (Michael B First, 1997b) was used to assess the presence of DSM-IV Axis-II diagnosis or traits. SCID-II is a semi-structured diagnostic interview for evaluating the ten DSM-IV personality disorders (American Psychiatric Association, 1994). The SCID is considered to be a gold standard interview-based instrument for assessing PDs (Lobbestael, Leurgans, & Arntz, 2011).

The SCID-II could be applied to provide a PD diagnosis either categorically or dimensionally. In this study, the categorical approach was used in order to identify the

patients who have BPD traits or diagnosis. Only the BPD section was used in the current study. The interview was done following the screening questionnaire consisting of 15 questions. This is in order to ensure that participants had traits of BPD meeting clinical threshold as diagnosed by their psychiatrist. The interviews were audio taped in order to avoid data loss. Participants were included in the patient group if they had sub-syndromal BPD (4 out of 9 DSM-IV BPD criteria) or full syndrome BPD (5 or more out of 9 DSM-IV BPD criteria). The inter-rater reliability of SCID-II has been reported as moderate to excellent (Lobbestael et al., 2011; Maffei et al., 1997). Malow, West, Williams, and Sutker (1989) reported the test-retest reliability of the SCID-II section for BPD as a kappa of .87. Applying different forms of joint-reliability design, Renneberg, Chambless, Dowdall, Fauerbach, and Gracely (1992) and Arntz et al. (1992) reported an average kappa of .80 and .75. O'Boyle and Self (1990) assessed the concurrent validity of SCID-II interview in terms of the diagnostic agreement between SCID-II and another instrument. The Kappa coefficient reported in their study was 0.62 for BPD, which is consistent with an acceptable level of diagnostic agreement. Skodol, Rosnick, Kellman, Oldham, and Hyler (1988) showed that the SCID interview distinguished specific PDs better than other interviews. Jacobsberg, Perry, and Frances (1995) found that the false-negative rate was low for every PD diagnosis and confirmed that the SCID-II approach of following up on positive answers was a valid method.

In addition to the administration of SCID-II assessment, more information on symptoms experienced by the patients was sought from collateral sources including clinical review and handover sessions for each patient, medical records, consultation with the patient's therapist, psychologist, case worker and a self-report questionnaire for assessment of PD symptoms (DIP-Q). These information increased the validity of the diagnosis.

4.10.1.1 The procedure for administrating the SCID-II interview

After administration of SCID-II BPD questionnaire, each question with "yes" answers was followed up in the interview. Ratings of "1", "2" or "3" are assigned to the answer given to the questions about each specific criterion (First, 1997). A rating of "3" is chosen when the patient has provided a credible explanation, or if there is obvious evidence from observable behaviour during the interview, or from other sources mentioned above including the history of the patients provided in the medical records or in the reports or assessments of his/her therapist in the clinical review session. There were also specific guidelines for making a "3" for each criterion in the user's guidelines for the clinical interview. Also, the general DSM diagnostic criteria for personality disorders were considered when giving a specific criterion a rating of "3". These general PD criteria include the three "P"s; a score of "3" requires that the elaboration given in the item be *pathological* (i.e., beyond the range of normal disturbances), *persistent* (i.e., often present during the last 5 years with early onset), and *pervasive* (i.e., the characteristic is apparent in different contexts, such as at work and home environments, or, in several various relationships) (First, 1997). When there was clinical evidence to suspect that a questionnaire item answered "no" is true, they were included in the follow-up interview. The criteria rated "3" were considered as the diagnosed criteria for the patient.

4.10.2. DSM-IV Axis-I disorders (Psychiatric Diagnostic Screening Questionnaire- PDSQ)

The latest version of the PDSQ includes 126 questions measuring the symptoms of 13 disorders defined in DSM-IV in five psychopathological areas: eating disorders (bulimia/binge-eating disorder); mood disorders, major depressive disorder (MDD); anxiety disorders (panic disorder, agoraphobia, post-traumatic stress disorder (PTSD), obsessive-compulsive disorder (OCD), generalized anxiety disorder (GAD) and social

phobia); substance use disorders (alcohol abuse/dependence, drug abuse/dependence); and somatoform disorders (somatization disorder, hypochondriasis). Additionally, this questionnaire contains a six-item psychosis screen. This questionnaire was developed in order to screen for the most prevalent axis-I disorders in the 4th edition of DSM (Zimmerman & Mattia, 2001). The disorders covered in this questionnaire were chosen because they are the most common disorders reported in outpatient and inpatient clinical settings (Zimmerman & Chelminski, 2006). In a sample of 994 out-patients, all the 13 subscales of PDSQ showed good to excellent degrees of internal consistency [26] (Zimmerman & Mattia, 2001 b). Cronbach's alpha was more than 0.80 for 11 out of 13 PDSQ sub-scales and the mean score for the alpha coefficients was around 0.86. Test-retest reliability was studied on a sample of 185 who filled the PDSQ for the second time after one week. The mean of the test-retest correlations was 0.83. (Zimmerman & Chelminski, 2006). The levels of convergent, concurrent and discriminant validity scored from good to excellent levels in regards to each subscale of the PDSQ when compared with the SCID and other psychiatric measures (Zimmerman & Mattia, 2001 a). The findings of two studies assessing 900 patients confirmed that the PDSQ items are comprehensible. The outputs of two other projects consisting of a sample of 1700 psychiatric outpatients showed the feasibility of performing the questionnaire in clinical practice and the reliability and validity of the questionnaire (Zimmerman & Mattia, 2001 a).

The PDSQ subscale scores are the sum of the number of symptoms that the patient has reported for each of the 13 psychiatric disorders assessed on the PDSQ. A set of cut-off

[26] The degree to which the items comprising the scale are all assessing the same underlying construct or attribute (Pallant, 2013).

scores has been established for PDSQ clinical screening, which was used in this study in order to determine the specific screened subscales for each patient.

4.10.3. Co-morbid Personality Disorders (DIP-Q)

The DSM-IV and ICD-10 Personality Questionnaire known as DIP-Q (Ottosson, Rodlund, Ekselius, & von Knorring, 1995) is a 140-item self-report measure, generated to assess all ten DSM-IV and all eight ICD-10 personality disorders. Items were developed to correspond as much as possible to the diagnostic criteria in DSM-IV and ICD-10; however, the questions and the choice of words were made less complicated and shortened to improve understandability. Each item consisted of a statement representing a major aspect of the related PD criterion. The statements were answered in a true/false manner (Ottosson et al., 1998). A five-item impairment scale and self-report version of Global Assessment of Functioning (GAF) were also included in the questionnaire, which reflects the general criteria of mental distress and functional impairment (Thimm, 2010). GAF consists of 0-100 point scale. For each PD to be diagnosed, a cut-off score and, at least two or more criteria out of 5 on the impairment scale or GAF<70 should be met (Ottosson et al., 1998). A validation study was done in a sample of 138 patients to assess the agreement between DIP-Q diagnoses and interview-based diagnoses using Cohen's Kappa. The agreement for any PD measured by Cohen's Kappa was 0.62. Sensitivity for any DSM-IV PD was 0.84 and specificity was 0.77 (Ottosson et al., 1998). Cronbach's α for the DIP-Q DSM-IV Personality Disorder Scales showed a median α of 0.63, ranging from 0.44 (obsessive-compulsive) to 0.85 (avoidant) (Thimm, 2011). Administration of this questionnaire takes approximately 20 minutes (Ottosson et al., 1998). Out of the 140 self-report items in the questionnaire, 135 items are related to the diagnostic criteria of the DSM-IV and ICD-10 personality disorders. Five items constitute the

impairment/distress scale (ID scale), that is based on the scale introduced in the Personality Diagnostic Questionnaire (Hyler et al., 1988). In this study both categorical and dimensional diagnoses were considered, as mentioned above. A categorical diagnosis needed firstly that the number of criteria for the particular personality disorder reached the cut-off score specified by the DSM-IV and ICD-10 manuals, and secondly a score of two or more on the ID-scale. Dimensional scores were assessed as the number of positive criteria for each personality disorder diagnosis, without consideration of the general impairment scale (Ottosson et al., 1998, p.248).

4.10.4. Schema Mode Inventory (SMI)

This short version of the SMI was constructed out of the long original version of SMI (Young et al., 2007). The factor structure of the 270 item SMI was determined by applying Confirmatory Factor Analyses and Structural Equation Modelling. Finally, the short version of the SMI ended up with 14 subscales or schema modes, containing 118 items which are scored on a six-point Likert scale ranging from "never or almost never" to "always". A total score is computed by dividing the scale sum score by the number of items in that scale. The higher subscale scores indicate the more prevalent presentations or the intensity of the modes.

The short version comprises four domains (Child, Maladaptive Coping[27], Maladaptive Parent, and Healthy Adult). The internal consistencies of the subscales of the short SMI were good (ranging from Cronbach's $\alpha = 0.79$ to $\alpha = 0.96$, mean = 0.87). The mean of

[27] Three maladaptive coping modes of 1) surrendering to the schemas (compliant surrender mode); 2) avoiding the schemas (detached protector mode and detached self-soother mode); and, 3) over compensating to disprove the schemas (self-aggrandiser mode and bully/attack mode). All of these coping modes ultimately perpetuate schemas (Young et al., 2003).

item loadings was 0.68. Test-retest reliability over a 4-week period was assessed in a sample of fifty non-patients and the results indicated sufficient reliabilities for all schema modes, varying from 0.65 to 0.92, $p<0.001$, with a mean of 0.84. The SMI has good discriminate validity and moderate convergent validity. The findings affirmed that the dysfunctional modes escalate considerably from non-clinical populations to Axis-I samples to Axis-II samples. The pattern was the same but in the opposite direction for healthy modes. The number of items per mode ranges from 4 to 10, with an average of 8.4 items. The variance of specific modes was explained by a combination of both Axis I and II disorders, whereas other modes were mostly predicted by Axis-II psychopathology. Administering the SMI takes approximately 20 minutes. (Lobbestael et al., 2010).

4.10.5. Dissociation (Wessex Dissociation Scale -WDS)

The Wessex Dissociation Scale (WDS) (Kennedy et al., 2004) is a 40-item self-report questionnaire, which provides a measure of dissociation based on Kennedy et al.'s (2004) cognitive model of dissociation. Based on an information processing approach, the WDS assesses dissociative symptoms assumed to result from the breakdown of the flow and exchange of information between the cognitive structures that compromise the personality. In this manner, this questionnaire measures many of those symptoms believed to be representations of structural dissociation. Items are scored on a 6 point scale from 0 (never) to 5 (all of the time) (Johnston et al., 2009). The WDS has shown adequate internal consistency, good convergent validity with another measure of dissociation for both patient and non-patient groups. WDS also had moderate concurrent validity to other scales of psychological disorders. Measures of dissociation showed higher association with more severe psychopathology; however, the WDS was associated with a broader range of the less severe symptoms (Kennedy et al., 2004). An attempt was

made to establish three clusters of WDS items related to the three stages of dissociation of information processing, based on the cognitive theory of dissociation (Kennedy et al., 2004). However, factor analytic techniques failed to confirm distinct clusters of symptoms. As a result, only the WDS's overall score for dissociation was used in this study, which is the item mean for the whole scale. Generally, it is believed that WDS provides a sensitive measure of dissociation (Kennedy et al., 2004).

4.11. Statistical Analyses

A group of parametric and non-parametric statistical analyses was used to test the hypotheses of this project. In this study, the type of data was interval-scaled. For assessment of the normality of the distribution of each variable, the Kolmogorov-Smirnov test or z-test for skewness and kurtosis were used. Another approach for checking the normality assumption was using the histogram charts for each variable.

"Normal" is applied to depict a "symmetrical, bell-shaped curve" which has the highest frequency of the scores in the middle with lower frequencies towards the extremes (Pallant, 2013, p. 61). When the distribution of scores was normal, the parametric versions of the tests were used (Pallant, 2013).

4.11.1. First Hypothesis

The first hypothesis was in relation to comparing the BPD group with the non-patient group in terms of schema modes. Due to the fact that the distribution of some of the schema modes in the non-patient group was not normal, the non-parametric substitute of T-test - Mann-Whitney U test - was applied (Pallant, 2013). In contrast to the T-test which compares means of two groups, Mann-Whitney U test compares medians. It changes the scores on the continuous variable to ranks in two groups so the actual

distribution of scores does not matter (Pallant, 2013). For comparing the patient group and non-patient group in terms of demographic characteristics including age, gender, place of birth, religion, marital status, employment, and education, either T-test or Chi-square test were applied.

4.11.2. Second Hypothesis

The second hypothesis involved examination of the strength of the relationship between schema modes and dissociation. As both dissociation and schema modes were represented by continuous variables, again parametric tests for assessment of the correlation between two variables were used. These methods include correlation and multiple regression. Correlation coefficients provide an outline of the direction and the strength of the linear relationship between two variables. Multiple regression is a more advanced and sophisticated extension of correlation and is applicable when there is a need to explore the predictive function of a set of independent variables on one continuous dependent variable (Pallant, 2013). Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Scatterplot of the correlation between detached protector mode and dissociation is shown as an example of the relationship between schema modes and dissociation in Error! Reference source not found.**.** This plot shows a positive and roughly linear relationship between two variables and the even shape of the cluster from one end to the other indicates no violation of homoscedasticity (Pallant, 2013). Considering the 14 correlations, Bonferroni adjustments were applied to control for type I error. A conservative value of 0.05/14 = 0.003 was required for significance to be meaningful. In order to assess the normality of the distribution of scores for dissociation, schema modes and general BPD criteria in BPD population, the “Explore” option of the “Descriptive Statistics” menu was applied.

Table 9: Tests of normality of some variables related to BPD group

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
Vulnerable Child Mode	.119	42	.149
Angry Child Mode	.084	42	.200*
Enraged Child Mode	.093	42	.200*
Impulsive Child Mode	.111	42	.200*
Undisciplined Child Mode	.095	42	.200*
Happy Child Mode	.104	42	.200*
Compliant Surrender Mode	.094	42	.200*
Detached Protector Mode	.102	42	.200*
Detached Self-Soother Mode	.117	42	.164
Self-Aggrandiser Mode	.120	42	.137
Bully and Attack Mode	.139	42	.039
Punitive Parent Mode	.103	42	.200*
Demanding Parent Mode	.103	42	.200*
Healthy Adult Mode	.124	42	.108
Dissociation	.114	42	.194

*. This is a lower bound of the true significance.

The Kolmogorov-Smirnov statistics assessed the normality of the distribution of all variables. A non-significant result indicates normality (Sig. value of more than .05) (Pallant, 2013). As it is shown in Table 9, except one variable highlighted (the Bully and Attack Mode), the distribution pattern of other variables are normal.

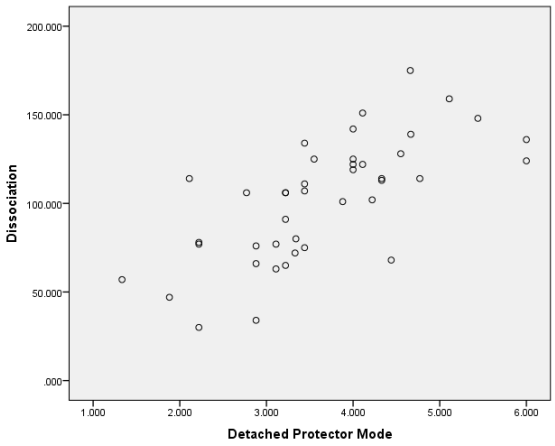


Figure 7: The scatter plot of correlation between detached protector mode and dissociation

4.11.3. Third Hypothesis

The third hypothesis was tested by applying a step-wise regression analysis. , in which modes that were found to be significantly statistically correlated with dissociation were further tested in step-wise regression to discover which modes best predicted dissociation.

4.11.4. Forth Study Question

In order to answer the forth question of this project and explore the relationship between BPD criteria diagnosed by SCID-II interview (ordinal variable) and Axis-I and Axis-II disorders measured by questionnaires (continuous variables) , nonparametric correlations - Spearman Rank Order Correlation (rho) - were applied.

The results of the statistical analyses will be described in the next chapter.

Chapter 5. Results

5.1. Examination of the First hypothesis

As mentioned in chapter four, in order to examine the first hypothesis and compare the patient group and non-patient group in terms of the schema modes, first the demographic information of both groups are provided, and two groups are compared in terms of age, gender, place of birth, marital status, religion, education and employment status.

5.1.1. Demographic Information

An overall cohort of 84 subjects participated in this study. The sample was comprised of 42 patients and 42 participants recruited from the normative community as a control sample which hereafter I will call the **non-patient group**. The age range of adolescent-youth participants of this study was from 14 to 24 years. The mean age of the patient group was 17.2 (SD:2.5) years and the mean age of the non-patient group was 17.6 (SD:3.1) years. The number of females in the patient group was 38 (90%) in comparison to 34 (81%) in the non-patient group. The number of people who were born in Australia was 39 (93%) in the patient group and 32 (76%) in the non-patient group. Use of religion was found in 52 (n=22) percent of the participants in the non-patient group and 43 (n=18) percent of participants in the patient group. Single status was found in 95 (n=40) percent of the patient group and 92 (n=38) percent of the non-patient group. Almost 70 (n=29) percent of the patients and 50 (n=20) percent of the non-patients were unemployed.

Most of the participants were high school students. Around 90 percent of the patients and 70 percent of the non-patients were continuing their secondary education.

The range of BPD criteria met by patients was from 4 to 9. In the patient group, there was just one participant who had 4 BPD criteria. So, 41 (almost 98 percent) patients had

5 or more BPD criteria and met the DSM threshold for diagnosis of BPD. The mean of BPD criteria met in the patient group is 7.55. Demographic information of the sample is presented in Table 10 and Table 11.

Table 10: Demographic Information on Age, Gender, Nationality and Religion to assess the adequacy of matching patients with non-patients

	Patient group n = 42	Non-patient group n = 42	Testing the significance of difference	P value
Age	Mean: 17.1 (SD: 2.5)	Mean: 17.6 (SD: 3.1)	T-test	P = 0.5
Gender	Females: n=38 (90%) Males: n=4 (10%)	Females: n=34 (81%) Males: n=8 (19%)	Chi-square	P = 0.13
Born in Australia versus born in other countries	Born in Australia n=39 (93%)	Born in Australia n=32 (76%)	Chi-square	p = 0.07
Religion	Non-religious: n=24 (57%)	Non-religious: n=20 (47%)	Chi-square	p = 0.5

Table 11: Demographic Information comparing Marital Status, Employment and Education for patients versus non-patients

	Patient group n = 42	Non-patient group n = 42	Testing the significance of difference	P value
Marital status	Single: n=40 (95%)	Single: n=38 (92%)	Chi-square	p = 0.3
Employment	Unemployed: n=29 (69%) Employed: n=13 (31%)	Unemployed: n=20 (47.6%) Employed: n=22 (52.4%)	Chi-square	p = 0.7
Education	Secondary Education: n=37 (88%) Tertiary Education: n=5 (12%)	Secondary Education: n=29 (69%) Tertiary Education: n=13 (31%)	Chi-square	p = 0.06

5.1.2. Age

An independent samples t-test was done to compare the age of patients and non-patients. There was no significant difference in age for patients (M = 17.19, SD = 2.46) and non-patients (M =17.60, SD = 3.15; t (84) = -.65, P = .51, two-tailed). The magnitude of difference in the means (mean difference = -.4, 95% CI: -1.6 to .82) was very small (eta squared = 0.005). The results of t-tests are presented in Table 12: Independent samples t-test to compare age in two groups Table 12. Frequency tables of age in patient and non-patient groups are presented in Appendix 8.6.2. .

Table 12: Independent samples t-test to compare age in two groups

	Patients		Non-patients						95% Confidence Interval of the Difference	
	M	SD	M	SD	t	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Age	17.19	2.46	17.60	3.15	-.65	.51	-.40	.61	-1.63	.82

5.1.3. Gender

A Chi-square test for independence (with Yates Continuity Correction) indicated that the proportion of males in the non-patient group and the patient group does not differ significantly: χ^2 (1, n=84) = .87, p = .35, phi = .13. The effect size score (phi score) shows a small association between the two variables. The results of the Chi-Square test for gender is presented in Table 13.

Table 13: Chi-Square test for comparing gender proportions in two groups

Chi-Square test for Gender	Patients		Non-patients				
	Female	Male	Female	Male	χ^2	*P*	*Phi*[28]
	n=38 (90.5%)	n=4 (9.5%)	n=34 (81%)	n=8 (19%)	.87	.35	.13

5.1.4. Place of Birth

Table 14: Frequency table of place of birth of patients and non-patients

Country	Patients	Non-patients
Australia	n=39 (92.9%)	n=32 (76.2%)
India	n=1 (2.4%)	n=0 (0.0%)
Iran	n=0 (0.0%)	n=2 (4.8%)
Italy	n=0 (0.0%)	n=1 (2.4%)
Japan	n=0 (0.0%)	n=1 (2.4%)
Malaysia	n=0 (0.0%)	n=1 (2.4%)
Sri Lanka	n=0 (0.0%)	n=1 (2.4%)
Taiwan	n=0 (0.0%)	n=1 (2.4%)
Thailand	n=0 (0.0%)	n=1 (2.4%)
Vietnam	n=0 (0.0%)	n=1 (2.4%)
Hong Kong	n=1 (2.4%)	n=0 (0.0%)
Oman	n=1 (2.4%)	n=0 (0.0%)
Total	n=42(100%)	n=42(100%)

A Chi-square test for independence (with Yates Continuity Correction) indicated that the proportion of participants born in Australia does not differ significantly between the two

[28] Phi: Effect size of Chi-Square test

groups: χ^2 (1, n=84) =3.27, p = .07, phi = .23. The effect size score (phi score) shows a small association between the two variables. The information on the birth place of the sample is presented in Table 14. The results of the Chi-Square test for place of birth is presented in Table 15.

Table 15: Chi-Square test of Australian versus non-Australian participants

Chi-Square test for place of birth	Patients		Non-patients				
	Born in Australia	Born in other countries	Born in Australia	Born in other countries	χ^2	*P*	*Phi*
	n=39 (93%)	n=3 (7%)	n=32 (76%)	n=10 (24%)	3.27	.07	.23

5.1.5. Religion

Table 16: Frequency table of religion in patient and non-patient groups

Religion	Patients	Non-patients
No religion	n=24 (57.1%)	n=20 (47.6%)
Christianity	n=14 (33.3%)	n=13 (31%)
Hinduism	n=0 (0.0%)	n=2 (4.8%)
Buddhism	n=0 (0.0%)	n=3 (7.1%)
Islam	n=0 (0.0%)	n=3 (7.1%)
Other	n=4 (9.5%)	n=1 (2.4%)
Total	n=42 (100%)	n=42 (100%)

As it is shown in the table, 57 percent of the patient group and around 48 percent of the non-patient group indicated that they follow no religion.

A Chi-square test for independence (with Yates Continuity Correction) indicated that there is no significant difference in the proportion of participants adhering to a religion in the patient and non-patient groups: χ^2 (2, n= 84) =.43, p = .51, phi = .09. The effect size score (phi score) shows a small association between the two variables. The information on the religious adherence of the sample is presented in Table 16. The results of the Chi-Square tests for religion is presented in Table 17.

Table 17: Chi-Square test for comparison of religious versus non-religious participants in two groups

Chi-Square test for religion	Patients		Non-patients				
	Religious	Non-religious	Religious	Non-religious	χ^2	*P*	*Phi*
	n=18 (43%)	n=24 (57%)	n=22 (52%)	n=20 (48%)	.43	.51	.09

5.1.6. Marital Status

Table 18: Frequency table of marital status of patients and non-patients

Marital Status	Patients	Non-patients
Single	n=40 (95.2%)	n=38 (90.5%)
Married	n=0 (0.0%)	n=1 (2.4%)
De facto	n=1 (2.4%)	n=3 (7.1%)
Widow/Widower	n=1 (2.4%)	n=0 (0.0%)
Total	n=42 (100%)	n=42 (100%)

As it is shown in the tables, 98 percent of the patient group (41 participants out of 42) and around 90 percent of the non-patient group were single. The frequencies of different marital statuses are presented in Table 18.

A Chi-square test for independence (with Yates Continuity Correction) indicated that there is no significant difference in the marital status of participants in the patient group and non-patient group: χ^2 (2, n= 84) =0.85, p =.35, phi = .15. The effect size score (phi score) shows a small association between the two variables. The results of the Chi-Square test of marital status are presented in Table 19.

Table 19: Chi-Square test of single/married participants in two groups

Chi-Square test for marital status	Patients		Non-patients				
	Single	Married or de-facto	Single	Married or de-facto	χ^2	*P*	*Phi*
	n=41 (98%)	n=1 (2%)	n=38 (90%)	n=4 (10%)	.85	.35	.15

5.1.7. Employment

As it is shown in the tables below, around 70 percent of the patients and 50 percent of the non-patients were unemployed.

A Chi-square test for independence (with Yates Continuity Correction) was done to compare the proportion of employed and unemployed people in two groups. The test indicated that there is no significant difference in the occupational position of participants in the patient group and non-patient group: χ^2 (2, n=84) =3.13, p = .07, phi = .21. The effect size score (phi score) shows a small association between the two variables. The frequency tables of the employment status of the sample and the results of the Chi-Square test of employment are presented in Table 20.

Table 20: Chi-Square test of the employment status of participants

	Patients		Non-patients				
Chi-Square test for Employment	Employed	Unemployed	Employed	Unemployed	χ^2	*P*	*Phi*
	n=13 (31%)	n=29 (69%)	n=22 (52%)	n=20 (48%)	3.13	.07	-.21

5.1.8. Education

A Chi-square test for independence (with Yates Continuity Correction) indicated that the difference in the educational level of participants in the patient group and non-patient group does not differ significantly: χ^2 (2, n=84) = 3.4, p = .06, phi = .23. The effect size score (phi score) shows a small association between the two variables. The educational status of the sample and the results of the Chi-Square test are presented in Table 21.

Table 21: Chi-Square test of the educational status of the participants

	Patients		Non-patients				
Chi-Square test for Educational level	Secondary	Tertiary	Secondary	Tertiary	χ^2	*P*	*Phi*
	n=37 (88%)	n=5 (12%)	n=29 (69%)	n=13 (31%)	3.4	.06	.23

In general, the patient group and non-patient group did not differ significantly in terms of age, gender, place of birth, religion, marital status, employment and educational status. The two groups are reasonably matched on sociodemographic characteristics. It is not necessary to control for any sociodemographic variables in subsequent analyses.

5.1.9. General DSM BPD criteria diagnosed in patient group

As it is evident in Table 22, the mean score for the number of BPD diagnostic criteria met by 42 BPD patients is 7.55, ranging from 4 to 9 criteria. The standard deviation is 1.4.

Table 22: Descriptive statistics for general BPD criteria diagnosed in the patients

	Mean	95% confidence interval for mean	Median	Minimum	Maximum
General BPD Criteria for patients	7.55	Lower bond = 7.1 Upper Bond = 7.9	8	4	9
General BPD Criteria for non-patients	1	Lower bond = 0.5 Upper Bond = 1.4	0	0	7

5.1.10. Comparing the dissociation scores in patients and non-patients

Table 23: The descriptive statistics of dissociation scores in patients and non-patients (the range of dissociation scores is between “0” to “5”)

	Mean	95% confidence interval for mean	Median	Minimum	Maximum
Dissociation score for patients	2.55	Lower bond = 2.29 Upper bond = 2.82	2.66	0.75	4.37
Dissociation score for non-patients	1.13	Lower bond = 0.95 Upper bond = 1.32	1.02	0.07	2.62

As it is shown in Table 23, the dissociation score ranges from 0 to 5. Analyses of the skewness and kurtosis of dissociation scores [z-test was applied for normality (Kim, 2013)] in two groups showed no violation of normality. As shown in the t-test (Table 24), there was a significant difference in the dissociation scores for patients (M = 2.55, SD = .84) and for non-patients (M = 1.13, SD = .69; t (82) = 8.4, p = 0.000, two-tailed). The magnitude of the difference in the means (mean difference = 1.4, 95% *Cl: 1.08 to 1.75*) was large (eta squared = 0.47). The results of independent samples T-test for comparing the dissociation scores in two groups was also confirmed by applying a Mann-Whitney U Test. There was a significant difference in the dissociation scores of patients (Md = 2.6, n = 42) and non-patients (Md = .97, n = 42), U = 174, z = -6.33, p = .000, r = -.69 (Pallant, 2013).

Table 24: T-test for comparison of dissociation scores in patients and non-patients

	Patients		Non-patients						95% Confidence Interval of the Difference	
	M	SD	M	SD	t	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Dissociation (equal variance assumed)	2.55	.84	1.13	.69	8.4	.000	1.41	.16	1.08	1.75

5.1.11. Comparing the difference between schema modes in patient and non-patient groups applying Mann-Whitney U test for independent groups

The t-test's non-parametric alternative called Mann-Whitney U test was conducted to compare the schema mode scores for patient and non-patient groups (Table 25). As shown in Table 25 below, a Mann-Whitney U Test revealed that there were significant differences between patient and non-patient groups for all schema modes except two modes (p = 0.001). Bully and Attack mode of patients (Md = 1.94, n = 42) and non-

patients (Md = 1.88, n = 42) did not differ significantly, U = 843, z = -.349, p = .72, r = .06. No difference was also found in the Self-aggrandiser mode of patients (Md =2.4, n = 42) and non-patients (Md = 2.5, n = 42), U = 876.5, z = 0.049, p = .961, r = 0.005.

A Bonferroni correction was used for the number of Mann-Whitney U tests. The "α" obtained was 0.003 for 14 tests for the schema mode scale.

Effect size statistics help to indicate the magnitude of the differences between groups (Pallant, 2013). IBM SPSS does not provide an effect size statistic, however, the value of z which is provided in the output can be used to calculate a value of r (Pallant, 2013).

r = z/square root of N, where N = total number of cases (Pallant, 2013, p. 238).

The guidelines for interpretation of effect size using Cohen (1988) criteria are as follows (Pallant, 2013, p. 238):

0.1 = small effect

0.3 = moderate effect

0.5 = large effect

Effect size was measured for the 12 significant between-group differences and were all medium to large in size ranging from 0.3 to .8. The effect sizes are manifested in the "r" column of Table 25.

Table 25: Mann-Whitney U test for comparing schema modes of the patients and non-patients

	Group	N	Median	Mean Rank	U	P	z	r
Vulnerable Child Mode	Patient Group	42	4.5	60.5	122.5	.000	-6.8	.7
	Control Group	42	1.9	24.4				
Angry Child Mode	Patient Group	42	3.8	58	230.5	.000	-5.8	.6
	Control Group	42	2.1	26.9				
Enraged Child Mode	Patient Group	42	2.9	57.68	244.5	.000	-5.7	.6
	Control Group	42	1.2	27.32				
Impulsive Child Mode	Patient Group	42	3.9	58.87	194.5	.000	-6.1	.7
	Control Group	42	2	26.13				
Undisciplined Child Mode	Patient Group	42	4.1	54.26	388	.000	-4.4	.5
	Control Group	42	3	30.74				
Happy Child Mode	Patient Group	42	2.5	22.83	56	.000	-7.3	.8
	Control Group	42	4.4	62.17				
Compliant Surrender Mode	Patient Group	42	3.8	55.74	326	.000	-4.9	.5
	Control Group	42	2.6	29.26				
Detached Protector Mode	Patient Group	42	3.4	58.92	192.5	.000	-6.1	.6
	Control Group	42	1.7	26.08				
Detached Self-Soother Mode	Patient Group	42	3.5	51.15	518.5	.001	-3.2	.3
	Control Group	42	2.5	33.85				
Self-Aggrandiser Mode	Patient Group	42	2.4	42.37	876.5	.961	-.04	…..
	Control Group	42	2.5	42.63				
Bully and Attack Mode	Patient Group	42	1.9	43.43	843.5	.727	-.34	…..
	Control Group	42	1.8	41.57				
Punitive Parent Mode	Patient Group	42	4.2	61.89	67.5	.000	-7.2	.8
	Control Group	42	1.6	23.11				
Demanding Parent Mode	Patient Group	42	3.7	51.02	524	.001	-3.2	.3
	Control Group	42	3.2	33.98				
Healthy Adult Mode	Patient Group	42	3.1	25.52	169	.000	-6.3	.7
	Control Group	42	4.6	59.48				

5.2. Examination of the second hypothesis: Relationship between schema modes and dissociation in borderline patients

There were some strong positive correlations between schema modes and dissociation, with high levels of schema modes associated with higher levels of dissociation. The result of correlations are as follows (Table 26 and Table 27):

Table 26: Highest Pearson correlations between schema modes and dissociation

Schema Modes	Detached Protector	Angry Child	Impulsive Child	Demanding Parent	Punitive Parent	Vulnerable Child
Dissociation	.70***	.63***	.61***	.49**	.45**	.39**

***Correlation is significant at the 0.000 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

5.2.1. Correlations

Table 27: Correlation between dissociation and schema modes in borderline patients

		Dissociation	Vulnerable Child Mode	Angry Child Mode	Enraged Child Mode	Impulsive Child Mode	Undisciplined Child Mode	Happy Child Mode	Compliant Surrender Mode	Detached Protector Mode	Detached Self-Soother Mode	Self-Aggrandiser Mode	Bully and Attack Mode	Punitive Parent Mode	Demanding Parent Mode	Healthy Adult Mode
Dissociation (N=42)	Pearson Correlation	1	.395**	.630***	.381*	.610***	.317*	-.255	.342*	.700***	.202	.370*	.330*	.447**	.495**	-.060
	Sig. (2-tailed)		.010	.000	.013	.000	.041	.103	.027	.000	.198	.016	.033	.003	.001	.707

* Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

*** Correlation is significant at the 0.000 level (2-tailed)

5.2.2. Regression analysis for predicting dissociation by schema modes in patient group

As Kellogg and Young (2006) stated, borderline patients had been previously characterized by five modes or aspects of self that interact in destructive ways. They named these modes as the abandoned/abused child mode, the angry and impulsive child mode, the detached protector mode, the punitive parent mode and the healthy adult mode. The SMI questionnaire measures 14 schema modes. Based on the theory recommended by Young, I chose 6 pathological modes related to the borderline condition for entering into regression analyses. The angry child mode and enraged child mode were highly correlated within the whole sample (0.72). Considering this association and the fact that both of them measure anger, I selected the angry child mode as an independent variable because it had a higher R^2 (predictability) in linear regression analysis. Thus the final independent variables that were entered into the stepwise regression were 6 schema modes: vulnerable child mode, angry child mode, impulsive child mode, detached protector mode, punitive parent mode and demanding parent mode.

Stepwise regression was used to assess the contributions of schema modes to dissociation scores.

5.2.2.1 Checking the assumptions of regression (Outlier, normality, linearity, multicollinearity)

Normality: One of the ways that the key assumptions mentioned above can be checked is by inspecting the "Normal Probability Plot" (P-P) and the "Scatter plot". In the Normal Probability Plot (Figure 9), the points lie in a reasonably straight line from bottom left to top right. This showed no major deviations from normality. In the Scatter-plot (Figure 10)

of the standardised residuals, the residuals are distributed roughly like a rectangle with most of the scores concentrated in the centre, which means there was no systematic pattern to the residuals. (Pallant, 2013). The histogram should also be an almost normal distribution of standardized residuals (Figure 8).

Homoscedasticity: The variance around the regression line (Figure 9) was roughly the same for all the values of independent variables.

Multicollinearity: Multicollinearity exists when the independent variables are highly correlated (r=.9 and above) (Pallant, 2013). As it is indicated in Table 32, the multicollinearity assumption was not violated. Despite the fact that some of the correlations between independent variables were high (Appendix8.6.1.), the Tolerance and VIF[29] were checked, indicating no concern for the presence of multicollinearity. There was no tolerance value of less than 0.1 and no VIF value above 10.

Outliers: The scatter plot also showed that there was no outlier (a standardised residual more than 3.3 or less than -3.3). Outliers were also checked by inspecting the Mahalnobis distances and Cook's distance.

[29] Variance inflation factor

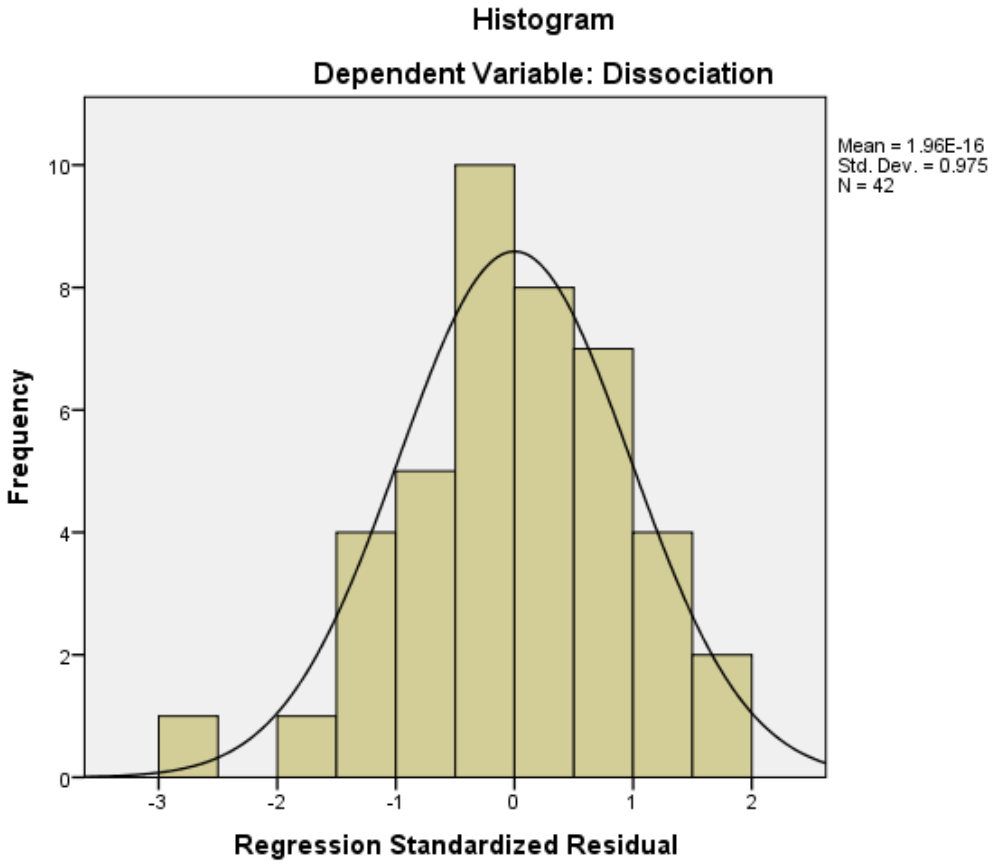


Figure 8: Histogram of standardised residuals of dissociation

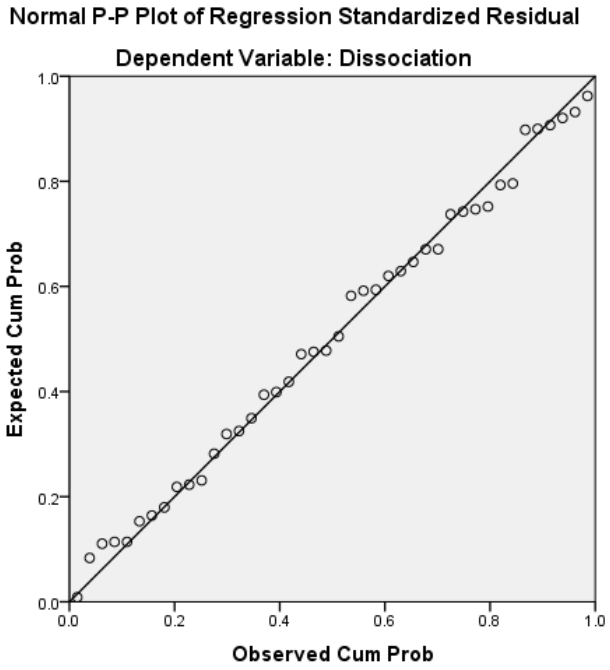


Figure 9: Normal P-P plot of standardized residual of dissociation

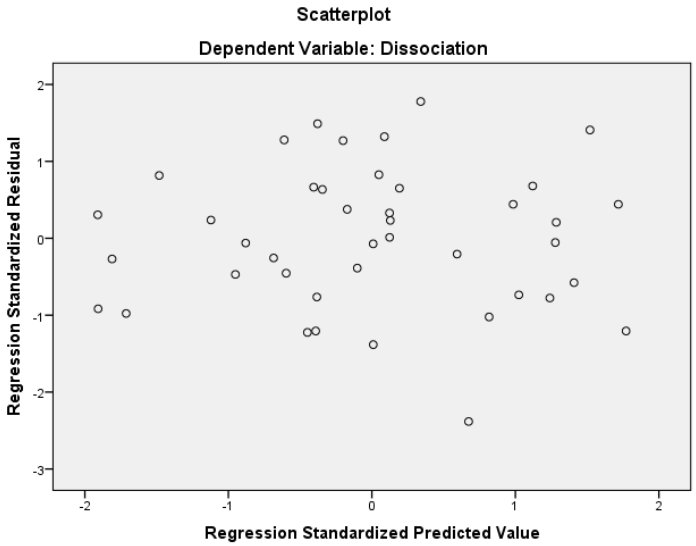


Figure 10: Scatterplot of standardized residual of dissociation

Table 28: Two final variables entered to the stepwise regression and ANOVA results of regression analysis

			Anova results	
Model	Variables Entered[a]	Method	F	Sig
1	Detached protector mode	Stepwise	38.39	. 000[b]
2	Impulsive child mode	Stepwise	26.95	.000[c]

a. Dependent Variable: Dissociation
b. Predictors: (Constant), Detached Protector Mode
c. Predictors: (Constant), Detached Protector Mode, Impulsive Child Mode

Table 29: Excluded Variables in the Models 1 and 2.

	Model	Beta In	t	Sig.	Partial Correlation
1	Vulnerable Child Mode	-.21[b]	-1.34	.186	-.21
	Angry Child Mode	.27[b]	1.80	.079	.27
	Impulsive Child Mode	.34[b]	2.89	.006	.42
	Punitive Parent Mode	.01[b]	.08	.932	.01
	Demanding Parent Mode	.20[b]	1.64	.108	.25
2	Vulnerable Child Mode	-.18[c]	-1.21	.231	-.19
	Angry Child Mode	.10[c]	.60	.550	.09
	Punitive Parent Mode	-.02[c]	-.18	.857	-.02
	Demanding Parent Mode	.22[c]	1.93	.061	.29

a. Dependent Variable: Dissociation

b. Predictors in the Model: (Constant), Detached Protector Mode

c. Predictors in the Model: (Constant), Detached Protector Mode, Impulsive Child Mode

Table 30: Model summary of the stepwise regression analysis

				Change Statistics				
Model	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.490	.477	24.5	.490	38.394	1	40	.000
2	.580	.559	22.5	.090	8.402	1	39	.006

In this model summary box (Table 30), there are two models listed. Model 1 refers to the first variable (Detached protector mode) that was selected in stepwise regression as a

variable that explained most of the variance in dissociation. In model 2, the second variable (Impulsive child mode) - which had the second highest ability to explain the dissociation variance – was selected and entered into the model. The first model explained 47 percent (0.47×100) of the variance. After another schema mode was also included in the model 2, the Adjusted R Square became 0.56. This means the model as a whole explains 56 percent of the variance in dissociation. The output presented in the column labelled R Square change, on the line marked model 2, is 0.09. This means that the impulsive child mode explained an additional 9 percent (0.09×100) of the variance in dissociation. This is a statistically significant contribution, as indicated by Sig. F change value for the second line (0.006). The ANOVA table (Table 28) indicates that the model as a whole reaches statistical significance: ($F(2, 40) = 26.95$, $p < .000$[30]). To wrap up, the schema modes which had statistically significant contributions to the prediction of dissociation scores in BPD patients as shown in Table 31 were Detached Protector Mode ($\beta = 0.527$, $t = 4.399$, $p < 0.05$) and Impulsive Child Mode ($\beta = 0.347$, $t = 2.899$, $p < 0.05$) (Pallant, 2013).

Table 31: Coefficient table of regression analysis

		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	Constant	19.38	13.91		1.39	.17	-8.73	47.51
	Detached Protector Mode	22.763	3.67	.70	6.19	.000	15.33	30.18
2	Constant	-1.75	14.71		-.11	.90	-31.52	28.01
	Detached Protector Mode	17.13	3.89	.52	4.39	.000	9.25	25.00
	Impulsive Child Mode	11.23	3.87	.34	2.89	.006	3.39	19.07

[30] 0.000 means $p < 0.0005$

Table 32: Correlations and collinearity statistics in regression analysis

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Detached Protector Mode	.70	.70	.70	1.00	1.00
2	(Constant)					
	Detached Protector Mode	.70	.57	.45	.75	1.33
	Impulsive Child Mode	.61	.42	.30	.75	1.33

In the table of correlations and collinearity statistics (Table 32), a useful piece of information is “Part” correlation coefficient (Pallant, 2013). Partial correlations are also provided for excluded variables as well (Table 29). By squaring this value, we get an indication of how much of the total variance in the dissociation is uniquely explained by that variable. After calculating the part correlation, it became evident that the detached protector mode uniquely explained 49 percent of the variance in dissociation and the impulsive child mode uniquely explained 17 percent of the dependent variable.

As depression and anxiety might have some influences on the ability of schema modes to predict dissociation, hierarchical step wise regression was used to examine the impact of depression and anxiety on the relationship between schema modes and dissociation.

5.3. Assessing the impact of depression and anxiety on the results of regression

Table 33: Model summary of hierarchical step-wise regression to assess the ability of schema modes to predict dissociation after controlling for MDD and GAD

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.382[a]	.146	.102	32.148	.146	3.32	2	39	.046
2	.803[b]	.646	.560	22.512	.500	7.75	6	33	.000

a. Predictors: (Constant), GAD, MDD

b. Predictors: (Constant), GAD, MDD, Impulsive Child Mode, Demanding Parent Mode, Vulnerable Child Mode, Punitive Parent Mode, Angry Child Mode, Detached Protector Mode

Dependent Variable: Dissociation

Table 34: ANOVA table for hierarchical regression

Model		df	Mean Square	F	Sig.
1	Regression	2	3440.866	3.329	.046[b]
	Residual	39	1033.536		
	Total	41			
2	Regression	8	3808.089	7.514	.000[c]
	Residual	33	506.816		
	Total	41			

a. Dependent Variable: Dissociation

b. Predictors: (Constant), Generalized Anxiety Disorder, Major Depressive Disorder

c. Predictors: (Constant), Generalized Anxiety Disorder, Major Depressive Disorder, Impulsive Child Mode, Demanding Parent Mode, Vulnerable Child Mode, Punitive Parent Mode, Angry Child Mode, Detached Protector Mode

Table 35: Coefficients table for hierarchical step-wise regression

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	36.53	26.24		1.39	.17	-16.55	89.61
	MDD	3.14	1.56	.32	2.01	.05	-.01	6.30
	GAD	1.68	2.34	.11	.72	.47	-3.04	6.42
2	(Constant)	-5.70	22.40		-.25	.80	-51.29	39.88
	MDD	.60	1.27	.06	.47	.63	-1.98	3.20
	GAD	.21	1.77	.01	.12	.90	-3.40	3.83
	Detached Protector Mode	16.48	6.11	.50	2.69	.01	4.05	28.92
	Angry Child Mode	3.98	5.20	.13	.76	.45	-6.60	14.57
	Impulsive Child Mode	9.56	4.64	.29	2.06	.04	.12	19.01
	Demanding Parent Mode	7.26	4.29	.22	1.69	.10	-1.46	15.99
	Punitive Parent Mode	-1.90	5.92	-.05	-.32	.74	-13.96	10.14
	Vulnerable Child Mode	-8.03	6.80	-.22	-1.18	.24	-21.88	5.81

Hierarchical regression was used to assess the ability of schema modes to predict levels of dissociation, after controlling for the influence of depression and anxiety variables (MDD and GAD). Preliminary analyses were done to ensure no violation of the assumption of normality, linearity, multicollinearity and homoscedasticity. MDD and GAD were entered at Step 1 (Table 33), explaining 14 percent of the variance in dissociation. After entry of schema modes at Step 2, the total variance explained by the model as a whole was 64%, $F (8, 42) = 7.51$, $p < .000$ (Table 34). The schema modes explained an additional 50% of the variance in dissociation, after controlling for MDD and GAD, R squared change = .50, F change $(2, 42) = 7.75$, $p < .000$. In the final model (Table 35), only the two schema modes of “detached protector” and “impulsive child” were statistically significant, with the detached protector mode recording a higher beta

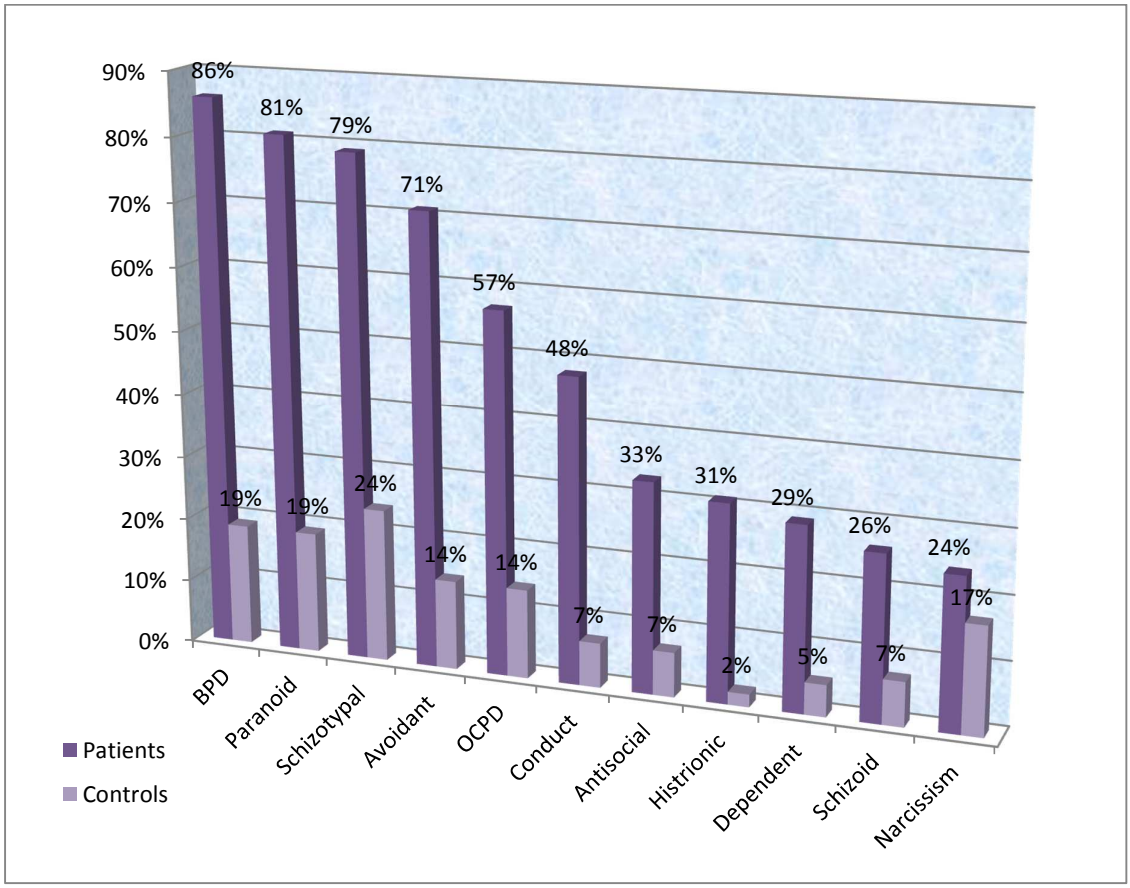
value (beta = .50, P < .01) than the impulsive child mode (beta = .29, p < 0.04) (Pallant, 2013).

I was also interested in which axis-I and axis-II disorders were associated with BPD diagnoses. Now I turn to the next section and explore the last question of this project.

5.4. Exploring the secondary hypotheses of the study

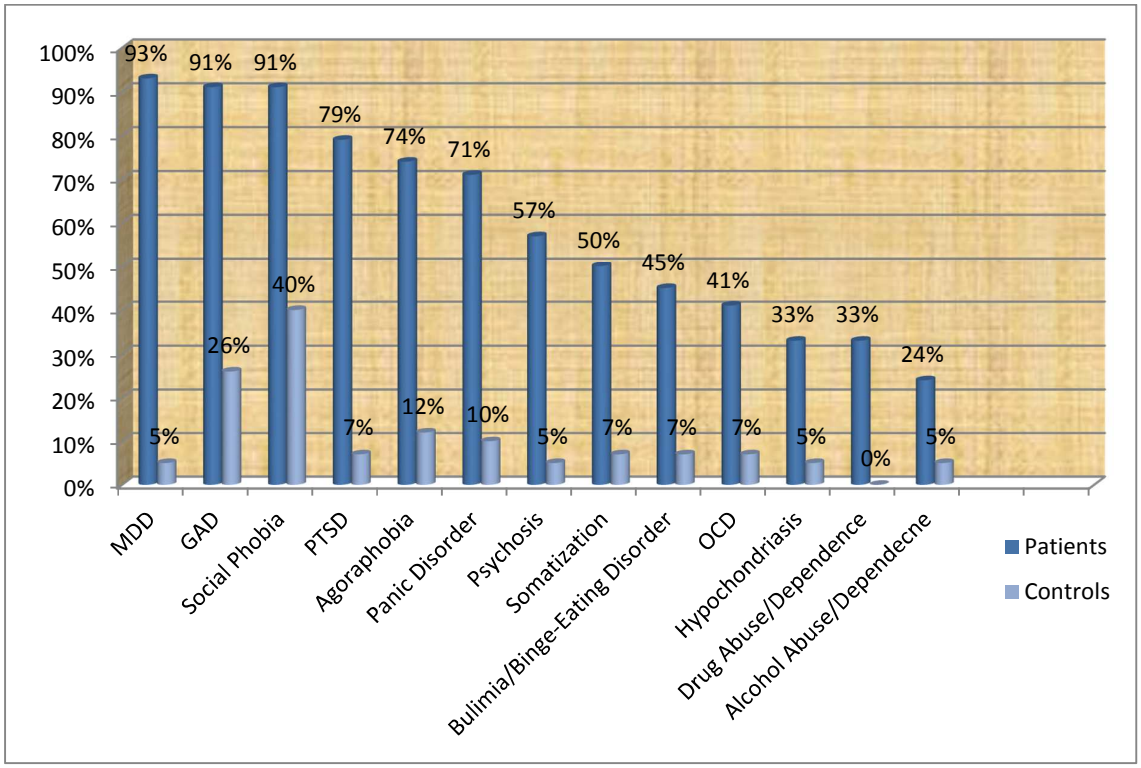
The secondary hypotheses were in regard to the relationship between Axis I and II psychopathology and BPD diagnosis. The histograms below show the prevalence of those BPD patients whose Axis-I and Axis-II DSM-4 psychopathology scores were beyond the screening cut-off score of the questionnaires.

Figure 11: Comparison of personality disorders in patient and non-patient groups as defined by DIP-Q questionnaire



As shown in Figure 11, there was a high comorbidity between BPD and paranoid, schizotypal and avoidant personality disorders measured by DIP-Q personality questionnaire. Around 80 percent of the patients showed paranoid and schizotypal traits and 70 percent of the patients screened for having avoidant traits.

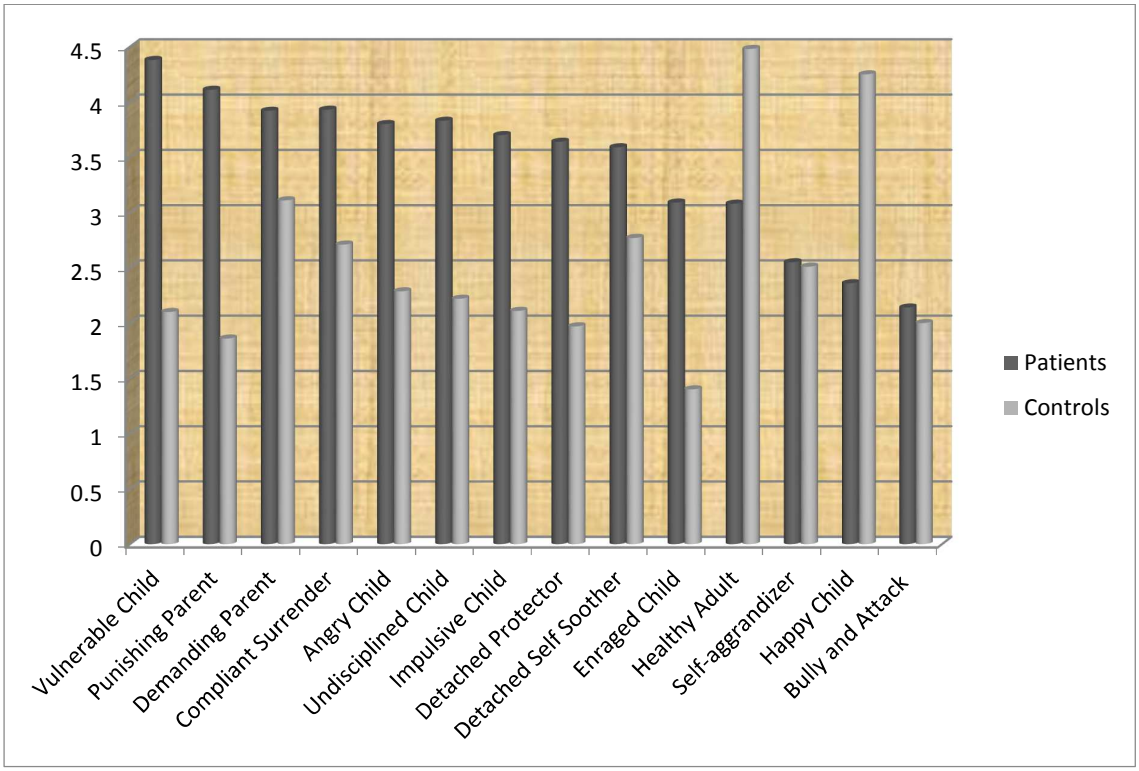
Figure 12: Comparison of potential axis I disorders in patient and non-patient groups using the Psychiatric Diagnostic Screening Questionnaire-PDSQ



The PDSQ had been employed as a screening tool for axis-I disorders (DSM-IV). As a screening tool, where a formal diagnosis has not been confirmed, I have designated the results of PDSQ as potential diagnoses. As illustrated in Figure 12, 90 percent of the patients showed the symptoms of MDD, GAD, and social phobia and were screened for these disorders. Also, 70 to 80 percent of the patients screened positively for PTSD, agoraphobia, and panic disorders. These percentages suggested a high comorbidity of mood and anxiety disorders in patients in comparison to non-patients. Almost one-third of BPD patients were positive screens for drug abuse and 24% were positive screens for alcohol abuse. Around 40 to 60 percent of the BPD patients were positive for eating disorder, somatization, and psychosis.

Schema mode scores of patients and non-patients are illustrated in Figure 13.

Figure 13: Comparison of schema modes between patients and non-patients



As indicated in Figure 13, healthy modes (happy child mode and healthy adult mode) were higher in non-patients in comparison to patients. The intensity of schema modes of vulnerable child, enraged child, angry child, impulsive child, undisciplined child, punishing parent and detached protector mode were almost double in the patient group.

Spearman correlations were employed to examine the association between BPD criteria and both axis-I DSM-IV categories and axis-II DSM-IV personality disorder categories. The results of the correlations are shown in Table 36 and Table 37.

Table 36: Correlation between general BPD criteria and potential axis-I disorders in patients as defined by the PDSQ screening tool

Correlations																
			Gen BPD	MDD	PTSD	Eating	OCD	Panic	Psychosis	Agora Phobia	Social Phobia	Alcohol Abuse	Drug Abuse	GAD	Somatization	Hypochondriasis
Spearman's rho	General BPD criteria	Correlation Coefficient	1.000	.324*	.334*	.141	.335*	.194	.247	.277	.215	.181	.356*	.332*	.101	-.220
N=42		Sig. (2-tailed)	.	.036	.031	.373	.030	.218	.115	.076	.171	.253	.021	.032	.526	.161

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Table 37: Correlation between general BPD criteria and axis-II disorders in patients as defined by the DIP-Q personality disorder categories

Correlations														
			Gen BPD	Avoidant PD	Dependent PD	OCPD	Paranoid PD	Schizoid PD	Schizotypal PD	Antisocial PD	Borderline PD	Histrionic PD	Narcissistic PD	Conduct Disorder
Spearman's rho	General BPD criteria	Correlation Coefficient	1.000	.295	.079	.272	.406**	.171	.512**	.473**	.675**	.494**	.524**	.259
N= 42		Sig. (2-tailed)	.	.058	.617	.081	.008	.278	.001	.002	.000	.001	.000	.097

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

The results of the correlations in Table 36 show that five potential Axis-I disorders, were associated with BPD general criteria (assessed by SCID-II interview) including Major Depressive Disorder, PTSD, Obsessive Compulsive Disorder, General Anxiety Disorder and Drug Abuse (*r: .33 to .35, p < .05*). Although not confirmed diagnoses, evidence was generated for the recognised comorbidity between axis-I disorders and BPD.

The Axis II PDs (assessed by DIP-Q; see Table 37) which have the highest correlations with BPD criteria were: Narcissistic: (r: .52, P<0.01), Schizotypal (r: .51, P<0.01), Histrionic: (r: .49, P<0.01), Antisocial (r: .47, P<0.01), and Paranoid (r: .40, P<0.01).

The General BPD criteria were assessed by SCID-II structured interview and also by DIP-Q questionnaire. The association between these two measurements was high (Spearman's rho =.89, P < 000) in the whole sample.

Chapter 6. Discussion

6.1. The difference between schema modes in the patient and non-patient groups

The overall aim of this research project was to study schema modes in borderline patients in comparison to those of non-patients, and to investigate the relationship between schema modes and BPD in borderline patients. This chapter integrates the themes emerging from the research literature and the results of this study. First, the findings of the study, especially in relation to the main research questions, are discussed. Then, the clinical implications and the limitations of the study are presented.

The results of this study indicate that there were significant differences between patient and non-patient groups in 12 out of 14 SMI schema modes. BPD patients showed significantly higher scores in child modes including the vulnerable, angry, enraged, and undisciplined child modes, and also higher scores in maladaptive coping modes and parent modes, including detached protector, detached self-soother, and compliant surrender coping modes and the demanding and punitive parent modes. They showed significantly lower scores on healthy modes, including the happy child mode and healthy adult mode. The only modes that did not differ significantly between the two groups were the bully and attack, and self-aggrandiser coping modes.

Consistent with the results of this study, Arntz et al. (2005) found that adult BPD patients scored significantly higher on 5 maladaptive modes [abandoned/abused (vulnerable) child mode, angry child mode, punitive parent and detached protector and compliant surrender coping modes] and lower on the healthy adult mode in comparison to non-patient controls. Lobbestael et al. (2005) had completed a comparable study and compared adult BPD patients with non-patient controls; however, they used the

bully/attack subscale of the schema questionnaire instead of the over-compensator and compliant surrender. They also found similar results that BPD patients scored significantly higher on maladaptive modes. Arntz et al. (2005) and Lobbestael et al. (2005) both concluded that BPD is characterized by the abandoned/abused child, angry child, detached protector and punitive parent modes, in comparison to patients with cluster C PD, antisocial PD and non-patients. One limitation of these studies was that only 7 and 6 schema modes of the schema questionnaire were assessed in these studies. Research conducted later assessed 7 other modes as well. In the study done by Lobbestael et al. (2008), the relationship between 14 schema modes and BPD were assessed on a group of 489 participants consisting of axis I and axis II patients and non-patients. They found significant relationships between 11 out of 14 schema modes and BPD ($p<0.001$). The only modes which were not significantly related to BPD were self-aggrandiser, bully and attack and demanding parent. Lobbestael and Arntz (2012) also found that BPD patients scored significantly differently on 12 out of 14 schema modes compared to non-patients. The only modes in which their difference between BPD patients and non-patients failed to reach significance in that study were bully and attack and self-aggrandiser modes. The results of my study were consistent with the results of the latter two studies in that the self-aggrandiser and bully and attack modes were not related to BPD patients. This shows that the schema modes of BPD adolescents are comparable to those of BPD adults. This is also in accordance with the findings reported by Durrett and Westen (2005) and Westen and Chang (2000) that BPD in adolescence has a similar structure and phenomenology to adult BPD.

Based on the results of Lobbestael et al. (2008), the bully and attack mode and self-aggrandiser modes were connected with narcissistic personality disorder. The self-

aggrandiser mode was also related to obsessive-compulsive PD in the same study as well. The self-aggrandiser mode is a form of an over compensating coping strategy that includes perfectionism and being critical or a controller. In another study done by Arntz et al. (2005), the over-compensator mode seemed to be more characteristic of cluster-C patients than BPD patients. The results of this study in terms of the low occurrence of self-aggrandising modes in BPD is in accordance with Kernberg's proposition that differentiates between narcissistic and borderline defence mechanisms. Narcissistic individuals usually have more integrated but still unhealthy grandiose selves, while persons with BPD suffer from more fragmentation in their personality structure (Gabbard, 2014). Kernberg and Yeomans (2013) believed that in contrast to borderline patients who manifest fluctuations from time to time, narcissistic patients hide the fragmentation of their identity under a fragile grandiose inflated self. Furthermore, narcissistic individuals have inclinations to antisocial behaviour. The most extreme form of narcissistic PD was called "malignant narcissism" by Kernberg and was characterized by "ego-syntonic aggression", paranoia, exploitative and antisocial behaviours (Kernberg & Yeomans, 2013, p. 15). The presence of the self-aggrandising and bully and attack modes in the clinical picture of patients might be important differential diagnostic criteria that help distinguish narcissism or malignant narcissism from borderline conditions. Let me turn now to the discussion of the association between dissociation and schema modes.

6.2. The relationship between dissociation and schema modes

The results of my correlations show that the strongest relationships were found between dissociation and the detached protector, angry child, impulsive child, punitive parent, demanding parent and vulnerable child modes. Based on Young's theory and in

accordance with the results of two experimental studies, these modes - except the demanding parent mode - have been shown to be the modes which most typically characterize borderline personality disorder (Arntz et al., 2005; Lobbestael et al., 2005; Young et al., 2003). Kellogg and Young (2006) hypothesized that, as a result of the interaction between genetic factors and unsafe, unstable, depriving, rejecting and punitive family environments of borderline patients, their inner world is characterized by vulnerable, angry and impulsive child modes and two adult modes of punitive parent and detached protector. The findings of my study imply that a high degree of disintegration of knowledge and chaos is associated with the prominent schema modes of BPD patients.

The results of my stepwise regression analysis indicated that schema modes explained 58 percent of the variance in dissociation. After controlling for the effect of anxiety and depression, again schema modes explained 50 percent of the variance in dissociation. While depression and anxiety explained 14 percent of dissociation score, after entering the schema modes as independent variables into the model, the contribution of depression and anxiety became insignificant. This shows that the effect of depression and anxiety reduced when their overlapping effects with schema modes were considered and statistically removed from the regression model.

This study supports the hypothesis that maladaptive schema modes in BPD actually predict levels of dissociation. This is consistent with the hypothesis of Young et al. (2003) which stated that in borderline personality disorder, four dysfunctional schema modes (angry and impulsive child, abandoned and abused child, punitive parent and detached protector coping modes) represent different aspects of the self that become highly dysfunctional as they become highly dissociated. In agreement with this proposal, schema modes explained a remarkable amount of variance in dissociation scores. The results

support the idea that disintegrated maladaptive schema modes represent divisions in personality structure. The more pronounced the existence of dysfunctional schema modes, the more these are associated with greater dissociative experiences (Johnston et al., 2009). In both regression analyses done in my study, the only schema modes that significantly predicted dissociation were the detached protector and impulsive child. These results imply that activation of the detached protector and impulsive child modes in BPD patients is associated with an increase in the dissociation of mind and lack of information integration. This low integration affects the mediation of the other modes, especially the healthy adult mode. Kellogg and Young (2006) elaborated that while BPD patients are well known for their dramatic manifestations of emotional expression, they often function in a so-called "detached protector mode", in which they adopt a style of detachment from emotional involvement, social isolation, and behavioural avoidance. In this coping mode, they experience the feeling of being numb or empty inside. They may adopt a pessimistic attitude toward emotional investment in relationships or activities. Another complication here is that, although the detached protector mode has been helpful in patients' survival, it interferes with psychotherapeutic progress and maintains the abandoned and abused child, blocked off from a therapeutic relationship and connection (Kellogg & Young, 2006).

Lobbestael et al. (2007, p. 76) described the impulsive child mode as one in which the individual takes actions based on immediate desires or impulses, which operate in a self-centred or uncontrollable manner to get his or her own way, with no consideration of the probable repercussions for self or others. They often have problems in postponing short-term gratifications and may look like they are "spoiled". Impulsivity is described in DSM-5 as "acting on the spur of the moment in response to immediate stimuli; acting on a

momentary basis without a plan or consideration of outcomes; difficulty establishing and following plans; a sense of urgency and self-harming behaviour under emotional distress" (American Psychiatric Association, 2013, p. 780). This mode is the second mode which puts the BPD patient at risk of a dissociated state, which would increase the risk of harm to self and others as a result of intense and unintegrated emotions.

The results of my study are also consistent with the findings of Johnston et al. (2009) in an adult sample, indicating that schema modes explain 52 percent of dissociation (WDS[31] scores). However, the specific schema modes which predicted the dissociation scores in my study differed from the findings of Johnston et al. (2009), who highlighted the role of child schema modes (Angry and impulsive child and vulnerable child modes). The role of the vulnerable child mode in dissociation was diluted in the results of this study. This might be related to the fact that individuals with BPD might protect their extremely painful inner vulnerable child by means of detachment and impulsivity. In this way, the impulsivity and detachment exclude from consciousness any experience relating to the vulnerable child and protects the core fragile and frightened vulnerable child in patients. In the current study, a coping schema (detached protector) mode explained most of the dissociation variance.

I will take a closer look at the results of my study in relation to dissociation phenomenon in BPD patients.

There are two psychodynamic approaches to understanding dissociation that warrant consideration in the discussion of the results of my study. The first line of conceptualisation about dissociation, which is more compatible with Freud's theory,

[31] Wessex Dissociation Scale

defined dissociation as a primary defence against overwhelming mental pain (Liotti, 2006). This defence plays a basic role in fragmentation of the personality over the period of childhood. Such an approach is also in line with the theory of Kernberg (1984) that attributes many of the BPD problems to the experience of "split representations" of positive and negative characteristics of self and others (Liotti, 2000, p. 242). These different representations of self and others remain segregated throughout personality development (Liotti, 2000).

The second line of conceptualization is put forward by attachment theorists who assert that dissociation is not merely a primitive defence for avoiding mental pain. Supporting Janet's understanding of dissociation (Janet et al., 1925), attachment theorists believe that unity of the self is achieved through interactions with caregivers, which enable the child to construct a coherent view of self and others via integrative processes (Liotti, 2006). Caregivers who fail to provide a secure environment to help establish a healthy attachment may contribute to disorganization of their children's internal working models. This line of theorizing believes that the experience of dissociation originates from activation of a disorganized pattern of attachment with segregated mental states. Disorganized attachment is built in the relational context experienced by the child in early years and, in order to avoid the activation of this form of painful attachment, an individual may adopt secondary defence mechanisms. In this way, the overwhelming experience of dissociation (shifting states of consciousness), is prevented by avoidance of the activation of the attachment system (Liotti, 1999). In this view, dissociation is not primarily a defence, but is developed in the early years of the formation of the personality structure and characterized by dividedness. In this approach, dissociation can also be applied secondarily and defensively in order to avoid the activation of the disorganized

attachment, for instance, by experiencing a trance-like state (Liotti, 2006). Thus the defensive function of dissociation is secondary to disorganized attachment, in contrast to the first approach, that sees dissociation as a primary defence mechanism (Liotti, 2006). An attachment-based model of dissociation is more in line with Janet's rather than Freud's model of the unity of the self; a unitary representation of self, rather than being primordial, is achieved through integrative processes. In Janet's view, the mind is not primarily pristine or integrated; the integration is evolved through early interactions (Liotti, 2006). In attachment theory, disorganized attachment reflects a failure of the integrative processes that naturally create a unitary sense of self in the first year of life (Liotti, 2006).

Liotti (1992) observed that disorganized attachment may establish the prototype for dissociation of self-states, and predispose the person to react with dissociation to later life stressors. The internal working model of disorganized attachment is characterized by an incoherence and multiplicity that results from the unresolved losses and traumas experienced in the relationships with caregivers, concomitant with frightening/frightened parenting behaviour (Liotti, 1999). The caregivers of these children often suffer from a PTSD or grieving process, which includes vacillations between remembrance of disturbing dissociated traumatic experiences and fearful avoidance of these experiences and memories (Liotti, 1999). The child would also react to this vicious circle of fear/avoidance, searching for supportive proximity and experiencing overwhelming contradictory emotions. These incompatible affects are beyond the child's capacity to construct a coherent system of attention and behaviour (Liotti, 1999). In other words, a rapid changing of different representations of self and others exceeds any psychological capacity for a "personal synthesis" of interpretation and meaning (Liotti, 1999, p. 765).

The disorganized child may experience a transformed consciousness and the concurrent multiple paradoxical images of reality that are normally seen as unitary (Liotti, 2006).

Main and Hesse (1990) believed that the infant with disorganized attachment develops this from parents with unresolved trauma, whose care giving attitude is frightening to the child. Children can be frightened if the carer's approach is violent, or if the carer's attitude expresses fear. The child's experience when caught in these situations, is called "fright without solution", as "the caregiver simultaneously becomes the source and solution of the infant's alarm" (Main & Hesse, 1990, p. 163). Thus, it is suggested that early relational trauma is equivalent to experiencing fright without solution. This experience will culminate in the early development of incoherent, multiple, disaggregated representations of the self and caregiver, that would otherwise be represented as coherent in infants with organized attachment styles (either secure or insecure). The core of disorganization of the infant's attachment is the coexistence of approach and avoidance tendencies toward the caregiver that generates a serious absence of orientation in the infant's general behavioural pattern (Liotti, 2004). The paradox between attachment-seeking at the physical level and attachment-avoiding at the mental level exists as the basis for the development of disorganized attachment so frequently observed in abused children (Fonagy, 2000).

Many studies during the past decade have reported the frequent occurrence of childhood trauma in BPD patients (Lobbestael et al., 2005). For instance, between 1987 and 1992, eleven research studies observed the high occurrence of childhood trauma in BPD patients (Sabo, 1997). The results from the study of Lobbestael et al. (2005) demonstrated that individuals with BPD and APD had significantly more experiences of severe childhood emotional, physical, and sexual abuse than the non-patients. However, a review by

Gunderson (2009) suggested that trauma does not necessarily account for much of the etiological variance of BPD. The crucial point which is overlooked in this perspective is what the person or often the child experiences as traumatic. Gunderson mainly referred to a review article about the influence of sexual abuse on BPD (Fossati, Madeddu, & Maffei, 1999); however, traumatic experiences should not be limited to just objectively damaging experiences including sexual or physical abuse (Bowins, 2010).

Both of the theories – Freud's or Janet's - confirm the defensive role of dissociation, while Janet's theory supports the influence of disorganized attachment in inducing dissociation.

The results of my study can be seen in the light of the theories explained above. Based on the first theory, the detached protector and impulsive child modes could be understood as the modes which increase the dissociative experience in order to defend against remembrance of painful experiences of the past. Existence in these modes places the patient in the state of "not thinking" or "not connecting". In this way, individual can avoid any potential pain-evoking experiences. Due to the accumulation of negative experiences and violent object relations, the person avoids getting close to internal or external potential experiences of pain.

Based on the second theory, these modes are associated with increasing levels of dissociation that shows the existence of disorganized attachment in the individual's mind, and an absence of a coherent internal working model of relationships. The dissociation experienced might be related to the activation of the disorganized attachment and also might be related to adopting a dissociative defence to avoid such a painful attachment.

Based on the theory of Bromberg (1995), the concept of personality disorder is the outcome of the use of dissociation, which forms a personality system organized as a defensive reaction to the probable repetition of childhood traumatic experience. A part of

the self in a person with a personality disorder is always vigilant to potential treat that might break the dissociative defence. The dissociated state of the mind consists of unprocessed affective memories which constantly reassert themselves in an unrecognized manner (Howell, 2005). The results of my study can be interpreted in the light of the Bromberg's hypotheses. The detached protector mode can be viewed as an "on-call" self-state that perpetuates the vigilance of the patient to avoid potential internal and external signs of traumatic memory. The individual might adopt an impulsive mode in order to escape the pain of the traumatic memory by inhibiting thought and reflection, resulting in impulsive actions like self-mutilation. In Bromberg's theory, the dissociated memories return repetitively until they are processed symbolically and made a part of narrative memory (Howell, 2005).

Stern (1997) defined dissociation in terms of an unformulated experience. In this point of view, dissociation is seen as an active defensive process of unconscious refusal to think and reflect on the experience. In this way, the traumatic memory is kept outside awareness. The detached protector mode can be seen as an attempt to avoid making sense of an experience, thus keeping it unformulated to reduce the anxiety that knowing and reflecting might produce. Impulsivity can also be seen as another mechanism for decreasing the reflective function of the mind. Stern adhered to the constructivist position that "all experience is interpretation" (Howell, 2005, p. 116). He saw unformulated experience as a "familiar chaos" (Howell, 2005, p. 116) - familiar experience (feeling, thinking or behaving) with lack of clarity and differentiation that formulation of the experience would provide (Howell, 2005). The emotions and feelings that an individual experiences in the detached protector and impulsive child modes could be considered as unformulated and undifferentiated chaos, which are re-experienced habitually.

Kennedy et al. (2004) believed that Young's concept of schema avoidance has a resemblance to dissociation. The person consciously or unconsciously makes extreme efforts to avoid intolerable feelings associated with pathological schemas. These efforts are the results of a process of previous classic and operant conditioning of negative emotions. In this point of view, dissociation can be defined as an avoidance strategy that helps the patient to avoid fears and anxieties associated with some schemas; for instance avoiding relationships to prevent activation of abandonment schemas. The detached protector mode helps the patient to prevent the experiencing of negative affect by behavioural and cognitive avoidance. This mode might function as a cognitive avoidance, which is a form of dissociation at the early stages of information-processing (Kennedy et al., 2004). Now let me turn to some consideration of metacognitive processes in the experience of dissociation.

6.2.1. Meta cognitive dysfunction and dissociation

Based on Ryle's multiple self-states theory, reciprocal role patterns (RRPs) are defined as behavioural patterns that govern an individual's interactions with others (Leiman, 1997). There are higher levels of organization of RRPs (Ryle, 1997). As discussed in chapter three, level 2 and level 3 mechanisms concern higher-order procedures; level 2 consists of procedures that monitor transitions between RRPs, while level 3 concerns the conscious self-awareness (Ryle, 1997). In BPD patients, due to the development of contradictory RRPs in childhood, there is a higher dissociation between RRPs and the transition between them is not smooth (level 2). Furthermore, parents of BPD children have not equipped them with self-reflective mechanisms, such as sufficient attention and rich emotional vocabulary (level 3). The development of reflective capabilities also become disrupted and hindered by frequent state shifts (Ryle, 1997). As a result, children

with BPD do not experience adequate assistance in naming experiences and linking them together in the context of interpersonal relationships (Howell, 2005). The fragmented, traumatized self of these patients often does not experience a relational context to get repaired (Howell, 2005). Considering the results of my study from Ryle's point of view, BPD patients suffer from deficits in the three levels of these hierarchical organizational procedures. So they may suffer from lack of awareness of their own emotions, or the affective experiences of others, leading them to avoid relationships and emotional investments. This lack of awareness might predispose them to impulsive decision making as well. The dissociation experienced in detached and impulsive modes might be related to the lack of reflective functions, lack of understanding of meanings and emotions, and the fear that the patient might have from experiencing probably abrupt state transitions.

Fonagy's mentalization-based theory is also compatible with Ryle's theory, in attributing the dissociative symptoms of BPD patients to higher-order metacognitive disturbances. In Fonagy's theory, the ability to mentalize – defined as an ability to think about the thoughts of self and others – develops from the "child's experience of finding his or her mental state represented in the caregiver's mind" (Howell, 2005, p. 155). Mentalization promotes emotional regulation and symbolization capabilities. Parents who fail to reflect with understanding on their child's subjective experience and respond compatibly, particularly in the context of abuse, trauma and severe neglect, deprive the child of self-reflective function and a secure attachment (Howell, 2005). Fonagy (2000) articulates that some individuals with personality disorder are victims of childhood maltreatment, who compensated by avoiding to think about their parent's intention to harm them. This persisting defensive refusal to think about mental states causes them to have an inaccurate

understanding of thoughts and affects (Fonagy, 2000). Fonagy (2000) proposed two assumptions:

1. People with the experience of early trauma may defensively inhibit their mentalization capacity.
2. The developmental pathology of some features of individuals with personality disorder may be associated with this inhibition.

There are some explanations about the first assumption: 1) identification with the mental state of the other person could be hazardous to the growing self because the child who perceives the hatred implied by their parent's actions is guided to view him/herself as unlovable (Fonagy, 2000). 2) The caregivers might deny the meaning of their behaviours and claim beliefs at odd with their behaviours (Fonagy, 2000). 3) The world outside the family environment might reinforce mentalizing and alternative ways of experiencing self and others, but these processes are not rewarded in the family context and rigidly kept separate (Fonagy, 2000). For instance, an authoritarian parenting style has been shown to decrease the development of mentalization (Alessandri, 2008).

Fonagy believed that recognizing mental states in certain relational contexts is developmentally hindered in individuals with the experience of maltreatment. Early intensive stress disrupts orbito-frontal activity, which is related to one of the neural networks involved in mentalizing (Fonagy & Bateman, 2008). Consider the fact that any trauma provokes the attachment system, resulting in an excessive search for attachment security. Where the attachment bond is itself traumatizing, such arousal is increased as, when approaching the problematic attach ment relationship, the child might be further injured. This intense activation of the attachment system might have some inhibitory results for mentalization (Fonagy & Bateman, 2008).

Considering the results of my study based on mentalization theory, the defensive inhibitory avoidance of mentalization might lead BPD individuals to adopt a mode of functioning which is characterized by withdrawal from attachment figures and refusal to think about mental states of the self and others.

In line with Marsha Linehan's model and its emphasis on the effect of an invalidating family environment, Fruzzetti, Shenk, and Hoffman (2005) and Fruzzetti, Shenk, Mosco, and Lowry (2003) reported that parental invalidation, experienced as ignoring the self-perceptions of mental states, was associated with limited development of facets of social cognition, specifically the ability to recognize and label emotions.

Thus, not having sufficient emotional regulation skills in attachment contexts might also lead BPD patients to retreat from engaging and investing in relationships and adopt a detached protector mode of functioning.

Emotion regulation deficits have been observed in pathological gambling (Williams, Grisham, Erskine, & Cassedy, 2012) and compulsive buying (Williams & Grisham, 2012), which are both characterized by impulsivity. Dysregulation of emotions is hypothesized to lead to a variety of dysfunctional behaviours commonly seen among persons with BPD, including deliberate self-harm, substance abuse and eating disorder-related behaviours, all of which might function to regulate insulting affective distress (Chapman, Gratz, & Brown, 2006; Gratz, 2003; Gratz & Roemer, 2004; Linehan, 1993). Fossati, Gratz, Maffei, and Borroni (2013) found significant associations between trait impulsivity and most facets of emotion dysregulation in two adolescent non-clinical samples. Thus, poor emotional regulatory processes seen in BPD patients might have links with their impulsive behaviours. What Fossati et al. (2013) conclude in their study is that trait impulsivity might interfere with the development of emotion regulation skills

in BPD. For example, an inclination toward “acting without thinking (i.e. impulsivity) may interfere with the ability to identify and understand one’s emotional state”, as well as to determine and apply situationally suitable techniques to modulate emotions (Fossati et al., 2013, p. 330). The link between trait impulsivity and emotion regulation deficits may also indicate that trait impulsivity could lead to the dissociative and unformulated experiences in BPD. Trait impulsivity has become an important diagnostic criteria for the diagnosis of BPD; for instance, in order to diagnose BPD in the new alternative model of DSM-5, at least one of the traits must be impulsivity, risk taking or hostility (American Psychiatric Association, 2013).

A neurobiological finding revealed that impulsivity and affective dysregulation have links with some dysfunctional networks of brain regions. However, whether the reported neurobiological dysregulations are pre-existing, in effect, due to genetic or pre-birth factors, or result from hurtful events during childhood is unknown (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004).

Bowlby (1980) described the mental defence against disorganization of attachment processes as “defensive exclusion” (Cassidy & Shaver, 1999, p. 93). He also described two types of defensive exclusion: deactivation and disconnection. Deactivation is a state of emotional detachment in which an individual excludes all the cognitions and affects that might activate the attachment system. In this way, the person shows no feelings or behaviours related to attachment issues. In disconnection, just the painful information incompatible with the attachment is excluded from awareness, while the attachment is maintained. In this way, the individual keeps a good picture of the caregiver in consciousness and tries to disregard the contradictory information (Howell, 2005). Deactivation mainly describes avoidant attachment, while disconnection has been

considered to be more typical of ambivalent or disorganized attachment. Bowlby had predicted that some forms of attachment are characterized by segregated, incompatible systems of representations of self and others. Based on Bowlby's proposition, in order to exclude the contradictory information, individuals might adopt the detached protector mode, and avoid thinking and reflecting about what has been experienced as contradictory feelings and emotions in the early relationships.

Steele, Hart, and Nijenhuis (1997) highlighted the discrepancy between secure and insecure dependency, and recommended that overcoming what they called the "phobias of attachment" is a significant element that should be considered during early phases of therapy. Based on the description of Steele et al. (1997), dissociation is maintained as a result of internal classical conditioning. A part of the self avoids any exposure to highly aversive stimuli and dissociates the memories and emotions related to traumatized part or parts of the self. This response is mediated by stress hormones as well (Steele et al., 1997). Thus, classical conditioning related to both internal and external distressing cues leads to a series of particular phobias that must be recognised in treatment (Steele et al., 1997).

The detached protector mode could be understood in the light of this theory as a defensive mode that perpetuates dissociation and avoidance of aversive contents. This perpetuation is manifested in the form of attachment phobia in BPD patients.

They offered a three-phase approach to therapy in which the focus is on alleviating several phobias:

In the first phase, the focus is on (1.1) phobia of attachment problems, especially in relation to the therapist; (1.2) phobia of "mental contents" (emotions, cognitions, needs and imaginations…); and, (1.3) phobia of dissociated parts of the self.

In the second phase, the emphasis is on (2.1) phobia of "traumatic memories"; and (2.2) phobia of attachment, especially in relation to the perpetrator.

In the third phase, the emphasis is on integrating and organizing the behaviours toward overcoming the (3.1) phobia of intimacy; (3.2) phobia of "normal life"; and (3.3) phobia of "healthy risk-taking and change" (Steele et al., 1997, p. 95).

Having thus discussed the metacognitive dysfunctions and dissociation, let me now turn to a discussion in relation to the role of detached protector mode for avoiding extreme mode changes.

6.2.2. Detached protector mode: an option for avoiding extreme mode changes under stress

A study by Lobbestael and Arntz (2010) demonstrated that in response to abuse-related stress (a scene of a film), BPD patients showed hyper-reactivity and a significant increase in maladaptive schema modes. Lobbestael et al. (2009) also showed an increase in the angry child mode in response to anger induction[32] in BPD patients. Other studies including those done by Arntz et al. (2005) indicate an escalation in the detached protector mode in response to emotional stress. Lobbestael and Arntz (2012) also demonstrated an escalation in the detached protector and angry child modes in reaction to the remembrance of a past conflict with an aggressor in BPD patients. These studies indicated that due to hyper-reactivity and high probability of intensive switches between modes and intensive sensitivity in BPD patients in response to emotional stress, they may tend to take refuge in the detached protector mode after being exposed to stress in order to avoid more internal or external tensions.

[32] Recalling and describing a conflict in the past with the person who was an aggressor

Let me consider some of the biological work that might help to better understand what happens when dissociation occurs.

6.2.3. Neurobiological basis for the vulnerability to dissociative responses

Early relational traumatic experiences contributing to attachment disorganization appear to have negative impacts on the infant's evolving brain. The right-brain organization - which connects the limbic part of the brain to the neocortex via the cross-road of the orbitofrontal cortex - is involved in managing emotional stresses and develops along disadvantageous lines in the face of continuing early relational traumatic experiences (Liotti, 2004; Schore, 2002). The enduring structural changes result in inadequate stress coping strategies (Schore, 2002).

LeDoux (1996) argued that the amygdala has an inherent contribution to the automatically initiated physiological and behavioural reactions to danger, as well as the classical conditioning of these danger reactions. The conditioning process might involve conditioned stimuli associated with unconditioned stimuli as well, for example, a knock on the door (conditioned stimulus) might become associated with the presence of the abusive relative (unconditioned stimulus) and cause the same physiological or behavioural reactions. Intensive stress might also hinder information processing of hippocampal-neocortical regions of the brain, which are involved in inhibiting and regulating the emotional responses and memories. Excessive and continuous release of stress hormones might even damage the hippocampus (Nijenhuis et al., 1998).

Van der Kolk (1987) mentioned that failure of attachment patterns to provide soothing from a caregiver in childhood ends in extreme dysfunction in emotional self-regulation and disorders of neurotransmitter systems (Bromberg, 2003).

Van der Kolk (1987) also mentioned that social bonding, separation distress, and affiliative behaviours are all mediated by the brain opiate system and the brain areas with the highest opiate density. Unrelieved separation crying during infancy makes a person vulnerable to become addicted to re-experience the trauma and seek the remedy of actions stimulating the opiate system to overcome the separation stress.

Similar to substance addiction, people might become addicted to exposing themselves continuously to traumatic circumstances that recall the original trauma. “Reexposure to traumatic situations in humans can evoke an endogenous opioid response [that] could account for the sense of calm on reexposure that is reported by many traumatized individuals” Van der Kolk (1987, pp. 72-73).

Prossin, Love, Koeppe, Zubieta, and Silk (2010) found a lower baseline of opioid regulatory control in the emotion processing regions of the brain in BPD patients and an exaggerated reaction – a greater activation of the stress regulatory endogenous opioid system - in the same sections of the brain to affective stimulation. This increased activation of the opioid system makes a contribution to the increased pain threshold and dissociative symptoms (including analgesia) found in BPD patients (Bohus, Landwehrmeyer, Stiglmayr, Limberger, & Bohme, 1999; Ludäscher et al., 2007). In animals, the endogenous opioid system has been shown to be involved in bonding and affiliative behaviours, emotion regulation and impulsive responses (Barr et al., 2008). In humans, endogenous opioid system activation has been connected with suppression of both sensory and affective features of stressors and with trait impulsivity (Love, Stohler, & Zubieta, 2009; Zubieta et al., 2003; Zubieta et al., 2001).

Putnam (1997) asserted that due to the heightened negative HPA feedback experienced in PTSD, traumatized individuals lose some “buffering” capability and it can be

anticipated that they are much more sensitive to future stressors and trauma. Apparently minor changes in stress, or in medications relating to stress response systems, may result in inappropriate intensive reactions in a traumatized person. This sensitivity may make detachment a rewarding strategy for BPD patients.

6.2.4. Animal defence states underlying dissociative parts of the personality

What can we learn from observing animal behaviours when the animal is under threat that could inform our understanding of dissociation in the human? Nijenhuis et al. (1998) have indicated similarities between animal defence states and human responses to threat. These behavioural states that are adaptive to the threat of predators include fight, flight, freeze or total submission (Howell, 2005). In many species, freezing and total submission are the frequent reactions following an encounter with the predator (Howell, 2005). When a predatory threat has been detected, flight is an appropriate reaction when there is a chance of proper escape. Nevertheless, behavioural immobility known as “freezing” is the “dominant post-encounter response pattern” (Nijenhuis et al., 1998, p. 245). Freezing enhances the survival chance as predators recognize a moving prey more easily than still ones. Movement cues usually reinforce predatory behaviours (Nijenhuis et al., 1998).

One precursor of dissociative reaction is an experience of forced immobility (freezing) in the face of a threat that is characterized by being helplessly immobilised and terrified. Freezing does not involve a single reaction like immobilisation, but incorporates an organized physiological and behavioural pattern. When the animal is under the threat of an attack, freezing is associated with analgesia (absence of a sense of pain without loss of consciousness) (Nijenhuis et al., 1998). In a situation of an inescapable shock (IS), animals show a state of helplessness, freezing and analgesia after their trial for escape is

prevented (Nijenhuis et al., 1998). When the victim is dependent on the aggressor, passive defensive states involving hypoarousal and dissociative symptoms might be the most probable adaptive procedure for survival (Perry, 2000). As traumatization involves a process of classical conditioning, neutral stimuli that are linked with offensive stimuli may provoke an expectancy of danger (Bolles & Fanselow, 2010).

Some forms of human traumatic experiences may parallel predator attacks and inescapable shock. For instance, physical and sexual abuse phenomenologically resemble inescapable shock, particularly when the victims are children and perpetuators are their relatives (Nijenhuis et al., 1998). Many behavioural and biological resemblances occur between human and animal responses to trauma, and IS has contributed to a better understanding of trauma-induced dissociation, especially, on the underlying basis of characteristic dissociative states and the specific reactions manifested in these states (Nijenhuis et al., 1998). Putnam (1989) suggests that when threatened by the prospect of abuse or trauma, victims tend to hide and freeze in dark places, trying to disappear physically when they feel threatened, and preferring to be unresponsive to external provocations. Putnam (1989) also reported that adults with dissociative identity disorder often shift into a trance-like state, and they report having freezing, analgesic, and dissociative amnesia and out of body experiences (Nijenhuis et al., 1998). A trance-like state is the predominant dissociative phenomenon experienced by children with DID, in which the children do not appear to pay attention to their environment (Putnam & Trickett, 1993). Traumatized children with dissociative problems display characteristics including negative symptoms "(e.g., amnesia, trance states, being unresponsive to external stimuli, anaesthesia, analgesia, paralysis, and loss of feeling)", as well as positive symptoms "(e.g., hypervigilance, startle responses, and rapid transition of state)"

(Nijenhuis et al., 1998, p. 253). The results of my study show that the dissociative symptoms BPD patients experience in the detached protector mode might be underscored as similar to the freezing animal coping style that patients have learned through a process of classic conditioning to avoid the relationships and environments similar to their past traumatic experiences. Impulsive acts of aggression toward others and the self (self-mutilation) might be related to the fight coping strategy seen in animals as well.

6.3. Clinical Implications

The results of my study show that overcompensating coping strategies of bully and attack and self-aggrandiser are not generally predominant modes of BPD patients in comparison to non-patients. This might indicate that, in contrast to antisocial and narcissistic PDs, BPD patients do not hide their fragmented self behind overcompensating defences, and thus their fragile child modes are more dominant. This observation might help clinicians to better distinguish the defensive modes of BPD patients.

Considering the dissociative states of mind as a form of unformulated, chaotic and split off part of the experience as suggested by Stern (1997), there is a great need for BPD patients to understand these undiscovered parts of their mind. If patients adequately attend to their unformulated experiences, they will have more opportunity to formulate and organize them (Howell, 2005). Highlighting the constitutive power of language, Stern (1997) believed that formulating an experience is an act of creation. Verbal-reflective understandings and meaning come from the free flow of imagination and thoughts. Stern asserted that awareness is practicing the skill of spelling out and interpreting these experiences in reflective consciousness (Howell, 2005). One of the aims of the therapy for BPD patients could be verbalizing and making sense of their inhibited, unknown, chaotic and unformulated experiences, which were dissociated from awareness.

Psychological trauma can be defined as a peculiar and shocking experience that exceeds the threshold for cognitive processing. It begins to dominate the mind with unmodulated emotions that threaten the organizing structure of self-cohesion (Bromberg, 2003). The pressure of these horror emotions could be reduced when a new "perceptual reality is created" between the therapist and patient that transforms the narrative structure maintaining the dissociation (Bromberg, 2003, p. 689). Making the best use of the interpersonal context, the therapist can help the patients to become familiar with and regulate their own unintegrated emotions, especially in those areas of the memory which were cut-off as a result of traumatic experiences. Sullivan (1953, p. 314) named the dissociated and unconscious personification of the self as "not-me". Schecter (1973, pp. 17-39) explained that when an infant encounters a strange anxiety-provoking experience of trauma, his/her sense of continuity of being might be disturbed. To overcome the ongoing mental disorganization, the infant freezes (a dissociative reaction to trauma), ending up in what Schecter named the "dys-recognition of me-ness" and its sense of continuity (Schecter, 1973, pp. 17-39). One of the goals of therapy is to transform the "not-me" experience of the self to a self-reflective, self-expressive part of the self (Bromberg, 2003).

The ramifications of the role of emotion dysregulation and hyperactivation of endogenous opioid system in response to stress are extensive for therapeutic interventions. Disruptions in emotion regulation are obviously embedded in a relational context. There should be a shift from just a behaviourally oriented deconditioning of the traumatic experience toward "making more clinical use in the patient-therapist relationship, of the enacted reviling and processing of unsymbolized interpersonal patterns that originated early in life" (Bromberg, 2003, p. 692).

A model of dissociation based on insights from attachment theory recommends a psychotherapy for dissociative disorders where, in the first phase, priority is given to achieving security in the relationships between patient and therapist, or other significant relationships. Trauma work is secondary to the first phase (Liotti, 2006).

The dissociated states of mind are generally re-enacted in relational contexts and the interpersonal focus is significant for dissociation theory. As we understand, relationships and reciprocal role patterns are internalized, the stage is set for multiple parts of the self to appear in the context of the therapeutic relationship (Howell, 2005). Ryle's multiple self-state model – premised on dissociated enactive processes - is one of the approaches taught in treating BPD, by helping the patient to understand or formulate "un-thought" by revealing the meaning of significant role relationships (Howell, 2005).

Fonagy (2000) suggested that BPD patients lack an actual consciousness of some mental states. They need to focus on thoughts and feelings of themselves and others. This approach in therapy enhances the patient's propensity for reflection. In this way, the patient will be able to view him/herself in the mind of the therapist as a "thinking and feeling being" (Fonagy, 2000, p. 1143). This representation of the self has never completely developed during childhood and was perhaps unrecognized later by problematic interpersonal experience (Fonagy, 2000). Respect for reflection in the mind develops respect for self, others and the human community. It is this respect that drives the therapeutic endeavour (Fonagy, 2000). Mentalization-based treatment might be helpful in reducing the intensity of dissociation experienced in impulsive child and detached protector modes.

There has been association between impulsiveness and dissociation in my study. The observed link between impulsivity and emotion dysregulation (Fossati et al., 2013)

suggests that treating emotion dysregulation might reduce the impulsiveness and dissociation. Emotion regulation training and mindfulness training which are increasingly being incorporated into treatments of borderline patients (Bricker & Labin, 2012; Linehan, 1993; Roediger, 2012; van Vreeswijk & Broersen, 2012) could be helpful in reducing impulsivity and dissociation (Fossati, Vigorelli Porro, Maffei, & Borroni, 2012).

Putnam (1997) argued that different mental states are fundamental components of consciousness, behaviour and personality. Early developmental acquisition of the control and integration of these mental states could be traumatically disrupted, leading to discrete dissociated mental states and different contrasting senses of self. Self-control helps the infant to enter each mental or behavioural state volitionally. The skill of modulating and regulating different behavioural states is acquired through increasing the child's attention span and teaching him or her how people behave in certain situations. As control and understanding of behavioural states have not developed in traumatized children, they need a relational context or a therapeutic relationship in which to expand their attention span and orient their attention to their own behavioural state and the ways of regulating it. Putnam (1997) recommended that reducing dissociative behaviours in children and adolescents could be achieved through a few important strategies; 1) facilitating the mastery of "self-modulation" of behavioural and emotional states; 2) facilitating the evolution of "metacognitive self-monitoring" and "integrative functions"; 3) reducing the separation between dysfunctional dissociative states by "therapeutically processing and integrating compartmentalized affects and memories" (Putnam, 1997, p. 292).

Based on the cognitive theory of dissociation, dissociation is hypothesized to function throughout the information-processing system, which also includes the personality

structure level (Kennedy et al., 2004). This "failure to associate that which is normally associated" creates a dearth of normal links between regular modes of functioning (Kennedy et al., 2004, p. 41). The dissociation may both develop and maintain personality structures that seem adaptive in childhood; however, they become maladaptive in adulthood (Kennedy et al., 2004). The cost of such dissociative processes may include a lack of sense of self, mood changes and state-switching in BPD patients (Kennedy et al., 2004). Clinically, integration can be achieved by identifying and naming the various modes, and the cognitive, behavioural, emotional and physiological elements within them, and then applying techniques to help the patient to access awareness of several modes at the same time, and thus achieve control over the mode switch process (Kennedy et al., 2004).

Having discussed the contribution of schema modes to dissociation let us now turn to a discussion of the extent of psychiatric comorbidity that exists between BPD and other disorders.

6.4. Comorbidity between BPD and DSM-IV axis-I and axis-II psychopathology

My results show that 90 percent of the BPD patients who were screened proved to be potential cases of MDD, GAD, and social phobia, in comparison to a rate of just 5 percent positive screen for MDD, and 26 and 40 percent positive screens for GAD and social phobia respectively in non-patients. Around 70 to 80 percent of BPD patients were also positive on screens for PTSD, agoraphobia, and panic disorders. These results of axis-I co-occurrences in my study were derived from a self-report screening questionnaire

(PDSQ), not diagnostic interviews. Thus, the percentages of co-occurrence could be reduced following a diagnostic interview.

BPD is normally associated with high rates of comorbid axis-I and axis-II disorders (Grant et al., 2008; Lawrence, Allen, & Chanen, 2011; Skodol et al., 2005). For instance, Grant et al. (2008) found that almost 85 percent of BPD patients met criteria for one or more 12-month axis-I disorder. Another study reported that 74 percent of patients with BPD met criteria for another lifetime axis-II disorder (Lenzenweger, Lane, Loranger, & Kessler, 2007). Fabrega Jr, Ulrich, Pilkonis, and Mezzich (1992) demonstrated that almost two-thirds of individuals diagnosed with BPD received a concurrent axis-I diagnosis. In terms of axis-I disorders, MDD, substance misuse, PTSD, other anxiety disorders and eating disorders are all common in BPD individuals (McGlashan et al., 2000; Oldham et al., 1995). Based on the studies done by Oldham et al. (1995), Zanarini et al. (1998), McGlashan et al. (2000), 41-83 percent of BPD patients reported a history of having major depression, and the lifetime prevalence of other common axis I disorders was 12-39 percent for dysthymia, 10-20 percent for bipolar, 64-66 percent for substance abuse, 46-56 percent for PTSD, 23-47 percent for social phobia, 16-25 percent for obsessive-compulsive disorder, 31-48 percent for panic disorder, and 29-53 percent for any forms of eating disorder (Lieb et al., 2004, p. 454).

Zimmerman and Mattia (1999) reported that 70 percent of their BPD outpatients had 3 or more axis-I diagnoses. Some 60 percent of their BPD sample met criteria for MDD, and 30 percent for panic disorder and agoraphobia. The high percentages of comorbid axis-I disorders in my study are related to the use of screening questionnaires and the general pattern of high co-occurrences of axis-I disorders with BPD. The percentage of BPD patients who screened positive for substance abuse was 30 percent in my study,

which seems to be lower than general pattern found in BPD patients, which is around 65 percent. However, because my study focused on adolescents and youth, substance abuse prevalence may be lower due to age. The high percentages of GAD, PTSD, panic and agoraphobia in my BPD sample is consistent with the results of previous studies, considering the fact that the percentages found in my study for axis-I disorders are not results of diagnostic interviews.

The most prevalent comorbid PD traits found on screening in my study were traits of paranoid, schizotypal, and avoidant PDs.

In terms of axis-II disorders, Zanarini et al. (2004) have reported that avoidant, dependent and paranoid PDs are the most prevalent diagnosed conditions that co-occur with BPD. Nurnberg et al. (1991)'s study found narcissistic and histrionic, avoidant, dependent and paranoid PDs were comorbid with BPD. Loas et al. (2013) and McGlashan et al. (2000) reported BPD comorbidity with antisocial, avoidant, dependent and paranoid traits in adolescents. In contrast to the previous research, in my study, BPD patients tend to have more schizotypal and antisocial comorbid disorders.

In general, personality disorders are highly comorbid with each other. The majority of patients diagnosed with one of the specific PDs were diagnosed with more than one (Zimmerman et al., 2005). This might be related to the problems of categorization of personality disorders (Paris, 2008), which has led to the recommended shift to the dimensional conceptualization in the measurement of personality disorders.

In addition, to explore the comorbidity that is based on the categorical classification and cut-off scores, correlations between dimensional scores of axis I and II disorders with BPD general criteria were also explored. The results of these correlations showed that five Axis-I disorders including Major Depressive Disorder, PTSD, Obsessive

Compulsive Disorder, General Anxiety Disorder and Drug Abuse were associated with BPD general criteria (assessed by SCID-II interview) in the BPD group. This result is similar to the results of axis-I comorbidity with BPD in this study in which major depressive disorder, anxiety disorders and PTSD had the most co-occurrence with BPD.

The Axis II PDs (assessed by DIP-Q) which have the highest correlations with BPD criteria in the adolescent/youth BPD patients were Narcissistic, Schizotypal, Histrionic, Antisocial, and Paranoid. Avoidant, OCPD and conduct disorders were also correlated with BPD scores, but these correlations did not reach the significance level. The significant correlations showed that while narcissistic and histrionic PDs were not comorbid with BPD based on categorical assessments, they showed associations with BPD in dimensional assessments. This finding underscores the significance of attending to the difference between PDs assessed dimensionally versus categorically (Nakao et al., 1992). These results also highlight that BPD scores in my sample were associated with both the odd and eccentric cluster and also the dramatic, emotional or erratic cluster of personality disorders, which includes BPD as well. In contrast to previous research (Loas et al., 2013; Zanarini et al., 2004), the anxious cluster of PDs was not associated with BPD in this sample.

While BPD patients showed less inclination to apply narcissistic over-compensating coping strategies of bully and attack and self-aggrandising, this result could still permit that they might have other qualities of narcissistic and histrionic PDs. The correlation between narcissistic, histrionic and antisocial PDs with BPD is consistent with Widiger (2012)'s assertion that most PD comorbidity seems to occur within the same cluster. In general, there seems to be excessive comorbidity between BPD and other personality disorders in this sample. This might be related to the DSM-IV and section-II of DSM-5' approach, in which there were unclear boundaries and too much overlap between

definitions of PDs. DSM-5's new model of personality disorders has been proposed because of the excessive comorbidity among the DSV-IV PDs (Widiger, 2012). Application of the DSM-5 proposed dimensional model of BPD for future research might be helpful to achieve a more valid and reliable diagnosis.

Another explanation for the presence of high comorbidity in this sample might be the diffuse nature of psychopathology among youth with BPD (Becker, Grilo, Edell, & McGlashan, 2000; Becker et al., 1999). Based on previous studies, a broader range of comorbidity such as a greater number of between-cluster comorbidities and a higher heterogeneity are expected in adolescents with BPD than in adults with BPD (Michonski, 2014; Sharp & tackett, 2014).

Sometimes, the overlap between personality disorders will have clinical implications; for example, the co-occurrence of BPD and ASPD is always a negative prognostic factor (Kernberg & Yeomans, 2013) and makes the treatment of BPD less effective (Paris, 2008).

An axis-I condition with the highest prevalence in the non-patient group was social phobia in my study. Some 40 percent of non-patients showed symptoms of social phobia. Social phobia is a mostly "unrecognized" anxiety disorder, with its maximum onset in adolescence, especially between 11 and 17 years of age (Ranta, La Greca, Kaltiala-Heino, & Marttunen, 2016, p. 665; Ruscio et al., 2008; Wittchen & Fehm, 2003). Based on the DSM-5 definition, persons with social phobia experience intensive fears of appearing embarrassed or anxious in public. These fears often end up in extreme avoidance of social interactions (Ranta et al., 2016). The important clinical implication of this result is to recommend that social phobia could be screened for to achieve early recognition of its symptoms in adolescents and young adults; in this way, programs can begin to address this condition to prevent the subsequent social and educational impairments.

Before concluding, let me address some limitations of my study.

6.5. Limitations of the study and Recommendations for future research

Several limitations of my study should be acknowledged. As the sample included patients already diagnosed with BPD, my study was not able to determine whether the patterns of maladaptive schema modes described predated the onset of BPD or were alternatively derived from the disorder itself.

Because subjects were financially incentivised in a small way following completion of their questionnaires, a question could arise as to whether this creates biased recruitment? This issue has been studied by Martinez-Ebers (1997) and Singer and Kulka (2002). The authors show clear benefit for retention of subjects in the study and this benefit is seem to outweigh the limitation that the cohort might be biased.

Another limitation is that my study did not include patients with other PDs. Therefore, comparing schema modes between different PDs and comparing patterns with the determination of the specific schema modes in the BPD patients was not possible.

The present study only applied self-report measures to assess schema modes. Obviously, behavioural, physiological or observational assessment should be done in future studies to more fully validate the concept.

Due to time constrains and relatively small number of BPD patients in the population, the number of BPD patients included in this study was limited. Thus, a clear limitation of this study is the small sample. The recruitment of borderline patients in clinical settings is a time-consuming process, and an extended time frame is required for recruiting a greater number of patients. The small sample size meant that the regression analysis could not

provide more reliable predictions and also precluded more comprehensive understanding of dissociative states of the mind in terms of schema modes. While this study has opened up avenues for future research and raised possibilities in terms of the schema mode - dissociation relationship, there is still significant scope for future studies. One recommendation is that this study be replicated with a greater number of BPD patients. Future studies could apply a measure of dissociation that assesses the different manifestations of structural dissociation in order to provide a more sophisticated understanding of schema mode - dissociation relationships.

The information on the axis-I and axis-II comorbid psychopathology was assessed based on self-report screening measures. Future studies would need to include structural interviews for assessment of comorbid psychopathology. The effect of other PDs on my correlation and regression analysis did not partial out. This was because the main emphasis of the project was on psychological construct (i.e., the borderline personality structure) rather than diagnoses of psychiatric disorders. It is recommended to control for the effects of other PDs in future studies.

The small number of males in both groups made it impossible to assess any impact of gender on schema modes; future research should test for any probable correlation.

As the mode conceptualization of personality disorders are still in development, different additional modes have been proposed which are more connected with DSM-IV cluster C personality disorders (Bamelis et al., 2011). The inclusion of other additional modes might be helpful in studying the specificity of schema modes for BPD and other personality disorders.

As the study involved a cross-sectional design, the associations found in my study do not imply any casual relationships. Clearly, future research applying longitudinal designs is

required in order to study the predictive value of schema modes. Longitudinal studies are needed to assess the recovery process of schema modes during treatment. It would also help to have a better understanding of schema modes and their functions over the course of the disorder. The high association between dissociation and a coping strategy called detached protector mode was confirmed in my study. This has clinical relevance to therapists who need to overcome the detached defensive strategy and dissociation to improve the attentional span and integrative capacities of BPD patients.

Future studies will hopefully clarify other clinical and diagnostic meanings of schema modes in relation to dissociation to improve therapeutic outcomes. There is a lack of adequate psychological models of dissociation that would facilitate better understanding of such symptoms (Kennedy et al., 2004). Schema mode theory with its emphasis on dissociation could be helpful in understanding the psychological phenomena associated with dissociation.

The association between the detached protector and impulsive child modes with dissociation needs further exploration. For instance, what type of dissociative symptoms[33] are linked with each schema mode? Is the high level of dissociation experienced in these modes related to "between-modes dissociation" or "within-mode dissociation"[34]? These questions can be studied in the future research.

6.6. Conclusion

The results of this study show the prominent schema modes found in BPD patients in comparison to non-patients in an adolescent/youth population. This study also supports

[33] For example amnesia, depersonalization, derealisation, posttraumatic flashbacks, dissociative intrusions like hearing voices and other symptoms (Korzekwa et al., 2009).

[34] Between-modes and within-mode dissociations are defined in chapter 3.

the schema mode model of BPD proposed by (Young et al. (2003)) and highlights the association between dissociation and maladaptive schema modes in the borderline personality structure. The study found that the highest degree of dissociation in BPD patients could be explained by the detached protector mode and impulsive child modes. Clinically these modes could seriously damage the therapeutic relationship and need to be considered as the primary targets of treatment for borderline patients. Identification and integration of dissociated schema modes could be a significant therapeutic goal for persons diagnosed with BPD. Overall, the assessment of dysfunctional schema modes will be a precious addition to clinical assessment.

Chapter 7. References

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Chapter 8. Appendices

8.1. Ethics Approval

[redacted]

MonashHealth

Research Directorate
Monash Health
Monash Medical Centre
246 Clayton Road
Clayton Victoria 3168
Australia

Postal address:
Locked Bag 29
Clayton South Vic 3169
Australia

[redacted]

25 March 2014

Mrs Hoda Lagha Barazandeh
Psychology and Psychiatry
Faculty of Medicine, Nursing and Health Sciences.
Building P Block, Level 3, Monash Medical Centre
246 Clayton Rd, Clayton, VIC 3168, Australia

Dear Mrs Barazandeh

Study title: Schema Modes and Dissociation in Borderline Personality Disorder/Trait in Adolescents
Monash Health HREC Ref: 14037B

The Monash Health HREC B reviewed the above application at the meeting held on 20 February 2014 In addition, the HREC is satisfied that the responses to our correspondence of 26 February 2014 have been sufficiently addressed.

The HREC approved the above application on the basis of the information provided in the application form, protocol and supporting documentation.

This reviewing HREC is accredited by the Consultative Council for Human Research Ethics under the single ethical review system.

Approval

The HREC and Site Specific Authorisation approval is from 25 March 2014.

Approval is given in accordance with the research conforming to the *National Health and Medical Research Council Act 1992* and the *National Statement on Ethical Conduct in Human Research (2007)*. The HREC has ethically approved this research according to the Memorandum of Understanding between the Consultative Council and the participating organisations conducting the research.

Approval is given for this research project to be conducted at the following sites and campuses:

- Monash Health, Monash Medical Centre Clayton

You must comply with the following conditions:

The Chief Principal Investigator is required to notify the Research Directorate, Monash Health of the following:

1. Any change in protocol and the reason for that change together with an indication of ethical implications (if any)
2. Serious or unexpected adverse effects of project on subjects and steps taken to deal with them
3. Any unforeseen events that might affect continued ethical acceptability of the project
4. Any expiry of the insurance coverage provided in respect of sponsored trials

5. Discontinuation of the project before the expected date of completion, giving reasons
6. Any change in personnel involved in the research project including any study member resigning from Monash Health &/or the study team.

At the conclusion of the project or every twelve months if the project continues, the Principal Investigator is required to complete and forward an annual report to the Committee.

Annual report forms will be forwarded to the researcher.

Approved documents

Documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
Participant Information and Consent Form (Group 1)	3	24 March 2014
Participant Information and Consent Form (Group 2)	3	24 March 2014

If you should have any queries about your project please contact Deborah Dell or Julie [redacted]

The HREC wishes you and your colleagues every success in your research.

Yours sincerely

[redacted]

Dr James Doery
Acting Chair, HREC A

Cc: MUHREC

Checklist: Post-ethics approval requirements that must be met before a research project can commence at a study site.

Requirements	**Yes/No/NA**
Clinical Trial Research Agreement The PI must forward a fully executed copy of the agreement to the Research Directorate.	N/A
Indemnity The PI must forward a fully executed copy of the indemnity to the Research Directorate.	N/A
CTN notification The PI must sign the CTN and forward to the RGO so the authority approving the conduct of the trial, at that site, can complete and sign.	N/A
Radiation If applicable, the RGO must contact the Medical Physicist to notify DHS, Radiation Safety Section to list the project on the Institute's licence.	N/A
Other Commonwealth statutory requirements Ensure compliance with the following e.g. Office of the Gene Technology Regulator, NHMRC Licensing Committee, NHMRC Cellular Therapies Advisory Committee.	N/A

8.2. Information and Consent Form for Patients

MONASH University MonashHealth

Participant Information Sheet/Consent Form
Health/Social Science Research

PARTICIPANT GROUP 1 – SINGLE MEASURE

Monash Health

Title	Schema Modes in Adolescents and Young Adults
Short Title	
Project Sponsor	Monash University
Coordinating Principal Investigator/ Principal Investigator	Hoda Barazandeh
supervisors	Professor David Kissane Dr Michael Gordon
Location	Monash Health

Part 1 What does my participation involve?

1 Introduction

You are invited to take part in this research project, which is called the Schema Modes in adolescence. Schema modes are the patterns of thinking, feeling and behaving that are seen in people

You have been invited to participate because you access Children and Adolescent Service at Monash Health.

The study is being led by Hoda Barazandeh and is being undertaken as part of her PhD.

This Participant Information Sheet/Consent Form tells you about the research project. It explains the processes involved with taking part. Knowing what is involved will help you decide if you want to take part in the research.

Please read this information carefully. Ask questions about anything that you don't understand or want to know more about. Before deciding whether or not to take part, you might want to talk about it with a relative, friend or local health worker.

Participation in this research is voluntary. If you don't wish to take part, you don't have to.

If you decide you want to take part in the research project, you will be asked to sign a consent form. By signing it you are telling us that you:

- Understand what you have read
- Consent to take part in the research project
- Consent to be involved in the research described
- Consent to the use of your personal and health information as described.

You will be given a copy of this Participant Information and Consent Form to keep.

2 What is the purpose of this research?

A schema mode is **"an organized pattern of thinking, feeling and behaving that are seen in people.**

The aim of this research is to examine ways of thinking; feeling and behaving in adolescents and young adults aged 11 to 25 receiving care in Child and Adolescent Mental Health services.

The exploration of the patterns of thinking, feeling and behaving in youth will be helpful in preventing mental health issues and will also lead to effective mental health services in future.

3 What does participation in this research involve?

You may be invited to take part in this study if you are an adolescent aged between 11 and 25 receiving children and adolescent services in Dandenong and also you are considered capable enough to understand and complete the questionnaires. If you decide you want to take part in the research project you will be invited to sign a consent form and if you are under 18 years old your parent consent will be sought too.

Participation in this project will involve in a 15 minutes interview and completing 4 pencil and paper questionnaires. The questionnaire includes a number of items that ask about your physical and psychological symptoms and your patterns of thinking, feeling and behaving. The information in the questionnaire will enable us to improve the way we understand and measure these patterns to develop mental health services for youth.

The questionnaire will take approximately 75 minutes to complete. The questionnaire only needs to be completed once. The questionnaire can be completed at a time that is convenient to you. There are no follow-up questionnaires. If at any point during the completion of the questionnaire you feel too tired to continue, you are welcome to withdraw from the study or ask the investigator to help you complete it.

The research team will also review your medical record to obtain further details about you, including basic personal information like your contact details, age and sex, and medical information about your illness and its treatment.

There are no costs associated with participating in this research project, and you will be given $40 for your time in participating in this project". A Coles Gift Card for $20 plus $20 cash.

The researchers will monitor and review the progress of the research. This research project has been designed to make sure the researchers interpret the results in a fair and appropriate way and avoids study doctors or participants jumping to conclusions.

4 Other relevant information about the research project

A total of 80 individuals will participate in this research project from Children and Adolescent Mental Health Services in Dandenong and from other sites. The project, therefore, has a number of researchers working in collaboration from Monash University.

This research has been initiated by Hoda Barazandeh and is being supervised by Professor David Kissane and Michael Gordon and is being conducted by Monash University.
The results of this research will form a thesis to be written by Hoda Barazandeh to obtain her Doctor of Philosophy.

5 Do I have to take part in this research project?

Participation in any research project is voluntary. If you do not wish to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage.

If you do decide to take part, you will be given this Participant Information and Consent Form to sign and you will be given a copy to keep.

Your decision whether to take part or not to take part, or to take part and then withdraw, will not affect your medical care, your relationship with professional staff or your relationship with Monash Health.

6 What are the possible benefits of taking part?

We cannot guarantee or promise that you will receive any benefits other than a Coles Gift Card for $ 20 plus $ 20 cash from this research. However, your participation will help to improve mental health services. This may improve our care of adolescents and young adults in the future.

7 What are the possible risks and disadvantages of taking part?

The risk of physical stress or discomfort is unlikely. It is, however, possible that you may tire during data collection. If you feel you are tiring during the completion of the questionnaire but wish to complete it, the researcher will be willing to assist you. This may involve the researcher reading the questions aloud, along with the possible responses of the scale, and you answering verbally which response is most appropriate to you.

A possible psychological risk of participating in this research is feeling distressed as a result of completing the questionnaire. You may feel that some of the questions we ask are stressful or upsetting. If you do not wish to answer a question, you may skip it and go to the next question, or you may stop immediately.

If your responses to the questions indicate that you may be at risk of harm the research team will advise your usual care team to ensure you receive support as appropriate.

If you become upset or distressed as a result of your participation in the research project, the research team will be able to arrange for counselling or other appropriate support. Any counselling or support will be provided by qualified staff.

8 What if I withdraw from this research project?

If you do consent to participate, you may withdraw at any time. If you decide to withdraw from the project, please notify the investigator before you withdraw. If you do withdraw, you will be asked to complete and sign a 'Withdrawal of Consent' form; this will be provided to you by the investigator.

If you decide to leave the research project, the researchers will not collect additional personal information from you, although personal information already collected will be retained to ensure that the results of the research project can be measured properly and to comply with law. You should be aware that information collected up to the time you withdraw will form part of the research project results. If you do not want your information to be included, you must tell the researchers when you withdraw from the research project.

9 Could this research project be stopped unexpectedly?

We do not expect that the project will be stopped unexpectedly.

10 What happens when the research project ends?

When the research project ends in 2016, the results of the findings will be circulated among the research and clinical community. The findings will be published in international scholarly journals and presented at meetings nationally and internationally.

A summary of the results can be sent to you if you wish. If you would like to receive a copy of the results, please contact Hoda [redacted] (Monash Medical Centre)

Part 2 How is the research project being conducted?

11 What will happen to information about me?

By signing the consent form you consent to the research team collecting and using personal information about you for the research project.

Any information obtained in connection with this research project that can identify you will remain confidential. The information we collect will be re-identifiable. This means that any identifying details will be removed and replaced by a unique code, though it is possible to re-identify a specific individual by using the code and linking different data sets. Access to identifiable information will be restricted to researchers working directly on the project.

Information will de-identified and stored in locked filing cabinets or on password protected computers at Monash Medical Centre for a period of seven years. After seven years hard copies of the information will be destroyed and electronic copies will be deleted.

Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

The personal information that the research team collect and use include your responses to the questionnaires. Information about you will also be obtained from your health records (socio-demographic information and symptoms) held at this and other health organisations for the purpose of this research. By signing the consent form you agree to the research team accessing health records if they are relevant to your participation in this research project.

Your health records and any information obtained during the research project are subject to inspection (for the purpose of verifying the procedures and the data) by the relevant authorities and authorised representatives, the institutions relevant to this Participant Information Sheet, Monash University, Monash Health or as required by law. By signing the Consent Form, you authorise release of, or access to, this confidential information to the relevant research personnel and regulatory authorities as noted.

It is anticipated that the results of this research project will be published and presented in a variety of forums, including journals and a thesis. In any publication or presentation, information will be provided in such a way that you cannot be identified, except with your express permission. Results will be published or presented at a group level and any information obtained in connection with this research project that can identify you will remain confidential.

In accordance with relevant Australian and/or Victorian privacy and other relevant laws, you have the right to request access to the information about you that is collected and stored by the research team. You also have the right to request that any information with which you disagree be corrected. Please inform the research team member named at the end of this document if you would like to access your information.

Any information obtained for the purpose of this research project that can identify you will be treated as confidential and securely stored. It will be disclosed only with your permission, or as required by law.

12 Complaints and compensation

If you suffer any distress or psychological injury as a result of this research project, you should contact the research team as soon as possible. You will be assisted with arranging appropriate treatment and support. Any counselling or support will be provided by qualified staff.

13 Who is organising and funding the research?

This research is being conducted by Monash University in collaboration with Monash Health.

No member of the research team will receive a personal financial benefit from your involvement in this research project (other than their ordinary wages).

14 Who has reviewed the research project?

All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this research project have been approved by the HREC of Monash Health.

This project will be carried out according to the *National Statement on Ethical Conduct in Human Research (2007)*. This statement has been developed to protect the interests of people who agree to participate in human research studies.

15 Further information and who to contact

The person you may need to contact will depend on the nature of your query. If you want any further information concerning this project or if you have any problems which may be related to your involvement in the project, you can contact Hoda on [redacted](Monash Medical Centre)
Your treating team may need to have access to the information you have given to the researcher, I f you do not these information to be shared with your current treating team, please inform the researcher.

Research contact person (main investigator)

Name	Hoda Barazandeh
Position	PhD student
Email	[redacted]

Main Supervisor

Name	Professor David Kissane
Phone Number	[redacted]

For matters relating to research at the site at which you are participating, the details of the local site complaints person are:

Complaints contact person

Name	Ms Deborah Dell
Position	Manager, Human Research Ethics
Telephone	[redacted]
Email	

If you have any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general, then you may contact:

Reviewing HREC approving this research and HREC Executive Officer details

Reviewing HREC name	Monash Health
Manager, Human Research Ethics	Ms Deborah Dell
Telephone	[redacted]
Email	

PARTICIPANT COPY

Consent Form - *participant providing own consent*

PARTICIPANT GROUP 1 – SINGLE MEASURE

Title	Schema Modes in Adolescents and Young Adults
Short Title	
Project Sponsor	Monash University
Coordinating Principal Investigator/ Principal Investigator	Hoda Barazandeh
Supervisors	Professor David Kissane Dr Michael Gordon
Location	Monash Health

Declaration by Participant

I have read the Participant Information Sheet.

I understand the purposes, procedures and risks of the research described in the project.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time during the project without affecting my future care.

I understand that I will be given a signed copy of this document to keep.

Name of Participant (please print) _____

Signature _____ Date _____

Declaration by Researcher†

I have given a verbal explanation of the research project, its procedures and risks and I believe that the participant has understood that explanation.

Name of Researcher† (please print) _____

Signature _____ Date _____

† An appropriately qualified member of the research team must provide the explanation of, and information concerning, the research project.

Note: All parties signing the consent section must date their own signature.

RESEARCH COPY

Consent Form - *Parent or guardian providing consent for participation of the child*

PARTICIPANT GROUP 1 – SINGLE MEASURE

Title	
Short Title	Schema Modes in Adolescents and Young Adults
Project Sponsor	Monash University
Coordinating Principal Investigator/ Principal Investigator	Hoda Barazandeh
Supervisors	Professor David Kissane Dr Michael Gordon
Location	Monash Health

Declaration by Parent or Guardian

I have read the Participant Information Sheet.

I understand the purposes, procedures and risks of the research described in the project.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to permit my child to participate in this research project as described and understand that he/she is free to withdraw at any time during the project without affecting his/her future care.

I understand that I will be given a signed copy of this document to keep.

Name of Parent or Guardian_____

Signature _____ Date _____

Declaration by Researcher†

I have given a verbal explanation of the research project, its procedures and risks and I believe that the participant's parent has understood that explanation.

Name of Researcher† (please print) _____

Signature _____ Date _____

† An appropriately qualified member of the research team must provide the explanation of, and information concerning, the research project.

Note: All parties signing the consent section must date their own signature.

8.3. Information and Consent Form for Non-patient

MONASH University MonashHealth

Participant Information Sheet/Consent Form
Health/Social Science Research

PARTICIPANT GROUP 1 – SINGLE MEASURE

Monash Health

Title	Schema Modes in Adolescents and Young Adults
Short Title	
Project Sponsor	Monash University
Coordinating Principal Investigator/ Principal Investigator	Hoda Barazandeh
supervisors	Professor David Kissane Dr Michael Gordon
Location	Monash Health

Part 1 What does my participation involve?

1 Introduction

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The study is being led by Hoda Barazandeh and is being undertaken as part of her PhD.

This Participant Information Sheet/Consent Form tells you about the research project. It explains the processes involved with taking part. Knowing what is involved will help you decide if you want to take part in the research.

Please read this information carefully. Ask questions about anything that you don't understand or want to know more about. Before deciding whether or not to take part, you might want to talk about it with a relative, friend or local health worker.

Participation in this research is voluntary. If you don't wish to take part, you don't have to.

If you decide you want to take part in the research project, you will be asked to sign a consent form. By signing it you are telling us that you:

- Understand what you have read
- Consent to take part in the research project
- Consent to be involved in the research described
- Consent to the use of your personal and health information as described.

You will be given a copy of this Participant Information and Consent Form to keep.

2 What is the purpose of this research?

A schema mode is **"an organized pattern of thinking, feeling and behaving that are seen in people.**

The aim of this research is to examine ways of thinking; feeling and behaving in adolescents and young adults aged 11 to 25 receiving care in Child and Adolescent Mental Health services.

The exploration of the patterns of thinking, feeling and behaving in youth will be helpful in preventing mental health issues and will also lead to effective mental health services in future.

3 What does participation in this research involve?

You may be invited to take part in this study if you are an adolescent aged between 11 and 25 receiving children and adolescent services in Dandenong and also you are considered capable enough to understand and complete the questionnaires. If you decide you want to take part in the research project you will be invited to sign a consent form and if you are under 18 years old your parent consent will be sought too.

Participation in this project will involve in a 15 minutes interview and completing 4 pencil and paper questionnaires. The questionnaire includes a number of items that ask about your physical and psychological symptoms and your patterns of thinking, feeling and behaving. The information in the questionnaire will enable us to improve the way we understand and measure these patterns to develop mental health services for youth.

The questionnaire will take approximately 75 minutes to complete. The questionnaire only needs to be completed once. The questionnaire can be completed at a time that is convenient to you. There are no follow-up questionnaires. If at any point during the completion of the questionnaire you feel too tired to continue, you are welcome to withdraw from the study or ask the investigator to help you complete it.

The research team will also review your medical record to obtain further details about you, including basic personal information like your contact details, age and sex, and medical information about your illness and its treatment.

There are no costs associated with participating in this research project, and you will be given $40 for your time in participating in this project". A Coles Gift Card for $20 plus $20 cash.

The researchers will monitor and review the progress of the research. This research project has been designed to make sure the researchers interpret the results in a fair and appropriate way and avoids study doctors or participants jumping to conclusions.

4 Other relevant information about the research project

A total of 80 individuals will participate in this research project from Children and Adolescent Mental Health Services in Dandenong and from other sites. The project, therefore, has a number of researchers working in collaboration from Monash University.

This research has been initiated by Hoda Barazandeh and is being supervised by Professor David Kissane and Michael Gordon and is being conducted by Monash University.
The results of this research will form a thesis to be written by Hoda Barazandeh to obtain her Doctor of Philosophy.

5 Do I have to take part in this research project?

Participation in any research project is voluntary. If you do not wish to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage.

If you do decide to take part, you will be given this Participant Information and Consent Form to sign and you will be given a copy to keep.

Your decision whether to take part or not to take part, or to take part and then withdraw, will not affect your medical care, your relationship with professional staff or your relationship with Monash Health.

6 What are the possible benefits of taking part?

We cannot guarantee or promise that you will receive any benefits other than a Coles Gift Card for $ 20 plus $ 20 cash from this research. However, your participation will help to improve mental health services. This may improve our care of adolescents and young adults in the future.

7 What are the possible risks and disadvantages of taking part?

The risk of physical stress or discomfort is unlikely. It is, however, possible that you may tire during data collection. If you feel you are tiring during the completion of the questionnaire but wish to complete it, the researcher will be willing to assist you. This may involve the researcher reading the questions aloud, along with the possible responses of the scale, and you answering verbally which response is most appropriate to you.

A possible psychological risk of participating in this research is feeling distressed as a result of completing the questionnaire. You may feel that some of the questions we ask are stressful or upsetting. If you do not wish to answer a question, you may skip it and go to the next question, or you may stop immediately.

If your responses to the questions indicate that you may be at risk of harm the research team will advise your usual care team to ensure you receive support as appropriate.

If you become upset or distressed as a result of your participation in the research project, the research team will be able to arrange for counselling or other appropriate support. Any counselling or support will be provided by qualified staff.

8 What if I withdraw from this research project?

If you do consent to participate, you may withdraw at any time. If you decide to withdraw from the project, please notify the investigator before you withdraw. If you do withdraw, you will be asked to complete and sign a 'Withdrawal of Consent' form; this will be provided to you by the investigator.

If you decide to leave the research project, the researchers will not collect additional personal information from you, although personal information already collected will be retained to ensure that the results of the research project can be measured properly and to comply with law. You should be aware that information collected up to the time you withdraw will form part of the research project results. If you do not want your information to be included, you must tell the researchers when you withdraw from the research project.

9 Could this research project be stopped unexpectedly?

We do not expect that the project will be stopped unexpectedly.

10 What happens when the research project ends?

When the research project ends in 2016, the results of the findings will be circulated among the research and clinical community. The findings will be published in international scholarly journals and presented at meetings nationally and internationally.

A summary of the results can be sent to you if you wish. If you would like to receive a copy of the results, please contact Hoda [redacted] (Monash Medical Centre)

Part 2 How is the research project being conducted?

11 What will happen to information about me?

By signing the consent form you consent to the research team collecting and using personal information about you for the research project.

Any information obtained in connection with this research project that can identify you will remain confidential. The information we collect will be re-identifiable. This means that any identifying details will be removed and replaced by a unique code, though it is possible to re-identify a specific individual by using the code and linking different data sets. Access to identifiable information will be restricted to researchers working directly on the project.

Information will de-identified and stored in locked filing cabinets or on password protected computers at Monash Medical Centre for a period of seven years. After seven years hard copies of the information will be destroyed and electronic copies will be deleted.

Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

The personal information that the research team collect and use include your responses to the questionnaires. Information about you will also be obtained from your health records (socio-demographic information and symptoms) held at this and other health organisations for the purpose of this research. By signing the consent form you agree to the research team accessing health records if they are relevant to your participation in this research project.

Your health records and any information obtained during the research project are subject to inspection (for the purpose of verifying the procedures and the data) by the relevant authorities and authorised representatives, the institutions relevant to this Participant Information Sheet, Monash University, Monash Health or as required by law. By signing the Consent Form, you authorise release of, or access to, this confidential information to the relevant research personnel and regulatory authorities as noted.

It is anticipated that the results of this research project will be published and presented in a variety of forums, including journals and a thesis. In any publication or presentation, information will be provided in such a way that you cannot be identified, except with your express permission. Results will be published or presented at a group level and any information obtained in connection with this research project that can identify you will remain confidential.

In accordance with relevant Australian and/or Victorian privacy and other relevant laws, you have the right to request access to the information about you that is collected and stored by the research team. You also have the right to request that any information with which you disagree be corrected. Please inform the research team member named at the end of this document if you would like to access your information.

Any information obtained for the purpose of this research project that can identify you will be treated as confidential and securely stored. It will be disclosed only with your permission, or as required by law.

12 Complaints and compensation

If you suffer any distress or psychological injury as a result of this research project, you should contact the research team as soon as possible. You will be assisted with arranging appropriate treatment and support. Any counselling or support will be provided by qualified staff.

13 Who is organising and funding the research?

This research is being conducted by Monash University in collaboration with Monash Health.

No member of the research team will receive a personal financial benefit from your involvement in this research project (other than their ordinary wages).

14 Who has reviewed the research project?

All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this research project have been approved by the HREC of Monash Health.

This project will be carried out according to the *National Statement on Ethical Conduct in Human Research (2007)*. This statement has been developed to protect the interests of people who agree to participate in human research studies.

15 Further information and who to contact

The person you may need to contact will depend on the nature of your query. If you want any further information concerning this project or if you have any problems which may be related to your involvement in the project, you can contact Hoda on [redacted](Monash Medical Centre)
Your treating team may need to have access to the information you have given to the researcher, I f you do not these information to be shared with your current treating team, please inform the researcher.

Research contact person (main investigator)

Name	Hoda Barazandeh
Position	PhD student
Email	[redacted]

Main Supervisor

Name	Professor David Kissane
Phone Number	[redacted]

For matters relating to research at the site at which you are participating, the details of the local site complaints person are:

Complaints contact person

Name	Ms Deborah Dell
Position	Manager, Human Research Ethics
Telephone	[redacted]
Email	

If you have any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general, then you may contact:

Reviewing HREC approving this research and HREC Executive Officer details

Reviewing HREC name	Monash Health
Manager, Human Research Ethics	Ms Deborah Dell
Telephone	[redacted]
Email	

PARTICIPANT COPY

Consent Form - *participant providing own consent*

PARTICIPANT GROUP 1 – SINGLE MEASURE

Title	Schema Modes in Adolescents and Young Adults
Short Title	
Project Sponsor	Monash University
Coordinating Principal Investigator/ Principal Investigator	Hoda Barazandeh
Supervisors	Professor David Kissane Dr Michael Gordon
Location	Monash Health

Declaration by Participant

I have read the Participant Information Sheet.

I understand the purposes, procedures and risks of the research described in the project.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time during the project without affecting my future care.

I understand that I will be given a signed copy of this document to keep.

Name of Participant (please print) _____

Signature _____ Date _____

Declaration by Researcher†

I have given a verbal explanation of the research project, its procedures and risks and I believe that the participant has understood that explanation.

Name of Researcher† (please print) _____

Signature _____ Date _____

† An appropriately qualified member of the research team must provide the explanation of, and information concerning, the research project.

Note: All parties signing the consent section must date their own signature.

8.4. Flyer

A study for adolescents and young adults aged 11 -25 receiving care at Child and Adolescent Mental Health Service in Dandenong.

> "The aim of the study is the exploration of the patterns of thinking; feeling and behaving in youth and the results will be helpful in preventing mental health issues in youth and will also lead to effective mental health services in future".

"This study has been approved by the Monash Health Human Research Ethics Committee"

If you want to participate, you need to inform a member of your consultation team to be included in the study.

And then you will need to

- Be interviewed for 15 minutes
- Complete 4 Questionnaires for 45 minutes
- Appointment Place: Monash Medical Centre/ Mental Health Service in Dandenong

You will be given $40 for your time in participating in this project. If you want to participate and gain more information about this research please contact Hoda on: hlag2@student.monash.edu

8.5. Questionnaires of the Study

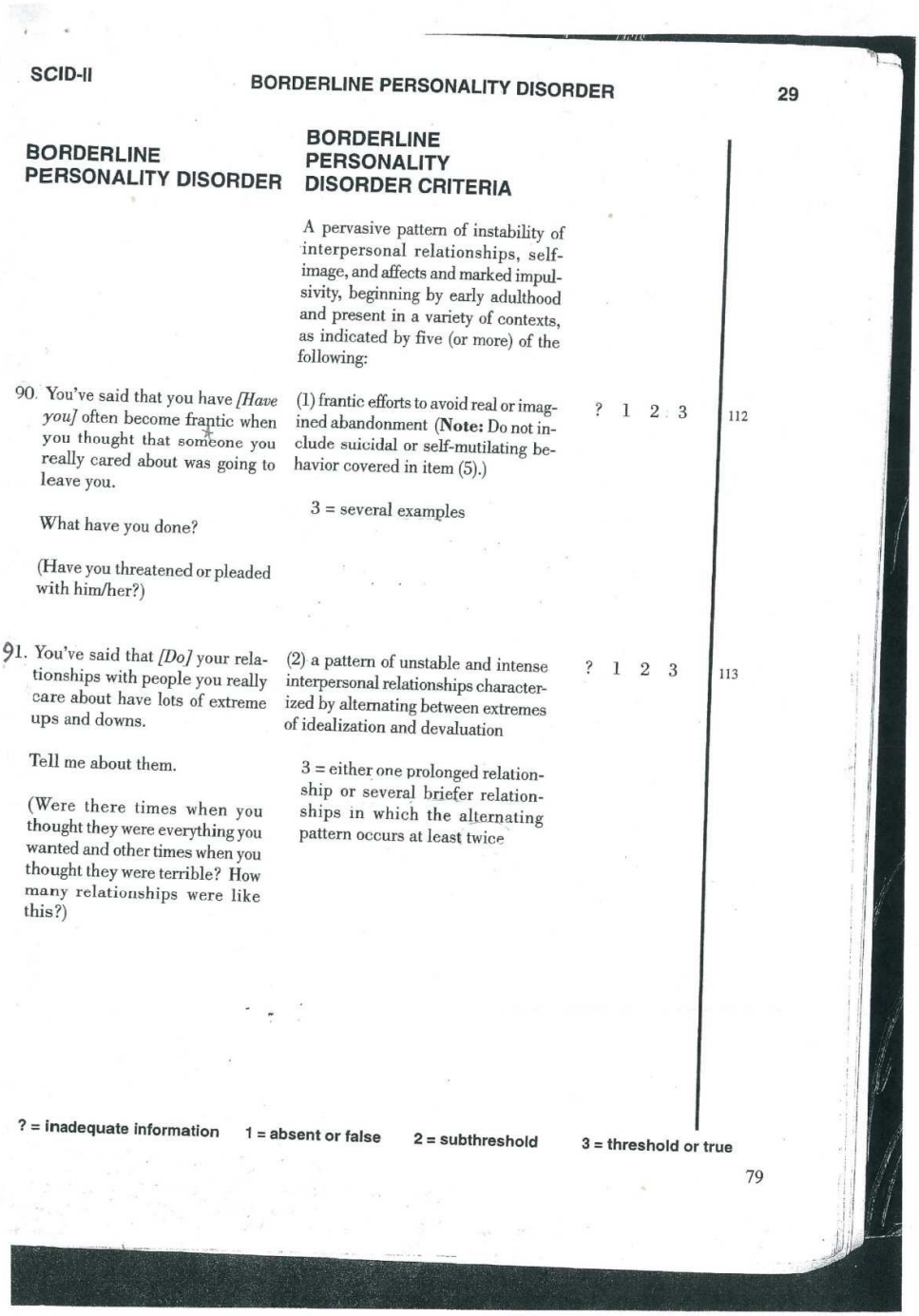
8.5.1. SCID-II BPD Screening Questionnaire

These Questions are about the kind of person you generally are-that is, how you have usually felt or behaved over the past several years. Circle "Yes" if the question completely or mostly applies to you, or circle "No" if it does not apply to you. If you do not understand a question or are not sue of the answer, leave it blank.

1- Have you often become frantic when you thought that someone you really cared about was going to leave you?	No	Yes
2- Do your relationships with people you have really cared about have lots of extreme ups and downs?	No	Yes
3- Have you all of the sudden changed your sense of who you are and where you are headed?	No	Yes
4- Does your sense of who you are often change dramatically?	No	Yes
5- Are you different with different people or in different situations, so that you sometimes don't know who you really are?	No	Yes
6- Have there been lots of sudden changes in your goals, career plans, religious beliefs, and so on?	No	Yes
7- Have you often done things impulsively?	No	Yes
8- Have you tried to hurt or kill yourself or threatened to do so?	No	Yes
9- Have you ever cut, burned, or scared yourself on purpose?	No	Yes
10- Do you have a lot of mood changes?	No	Yes
11- Do you often feel empty inside?	No	Yes
12- Do you often have temper outbursts or get so angry that you lose control?	No	Yes

13- Do you hit people or throw things when you get angry?	No	Yes
14- Do even little things get you very angry?	No	Yes
15- When you are under a lot of stress, do you get suspicious of other people or feel especially spaced out?	No	Yes

8.5.2. SCID-II Interview – BPD Section



SCID-II BORDERLINE PERSONALITY DISORDER 29

BORDERLINE PERSONALITY DISORDER

BORDERLINE PERSONALITY DISORDER CRITERIA

A pervasive pattern of instability of interpersonal relationships, self-image, and affects and marked impulsivity, beginning by early adulthood and present in a variety of contexts, as indicated by five (or more) of the following:

90. You've said that you have *[Have you]* often become frantic when you thought that someone you really cared about was going to leave you.

What have you done?

(Have you threatened or pleaded with him/her?)

(1) frantic efforts to avoid real or imagined abandonment (**Note:** Do not include suicidal or self-mutilating behavior covered in item (5).)

3 = several examples

? 1 2 3 112

91. You've said that *[Do]* your relationships with people you really care about have lots of extreme ups and downs.

Tell me about them.

(Were there times when you thought they were everything you wanted and other times when you thought they were terrible? How many relationships were like this?)

(2) a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation

3 = either one prolonged relationship or several briefer relationships in which the alternating pattern occurs at least twice

? 1 2 3 113

? = inadequate information **1 = absent or false** **2 = subthreshold** **3 = threshold or true**

79

92. You've said that you have *[Have you]* all of a sudden changed your sense of who you are and where you are headed.

    Give me some examples of this.

93. You've said that your sense of who you are often changes *[Does your sense of who you are often change]* dramatically.

    Tell me more about that.

94. You've said that you are *[Are you]* different with different people or in different situations so that you sometimes don't know who you really are.

    Give me some examples of this. (Do you feel this way a lot?)

95. You've said that there have been *[Have there been]* lots of sudden changes in your goals, career plans, religious beliefs, and so on.

    Tell me more about that.

(3) identity disturbance: markedly and persistently unstable self-image or sense of self ? 1 2 3 114

[Note: Do not include normal adolescent uncertainty.]

3 = acknowledges trait

96. You've said that you've *[Have you]* often done things impulsively.

    What kinds of things?

    (How about . . .
    . . . buying things you really couldn't afford?
    . . . having sex with people you hardly know, or "unsafe sex"?
    . . . drinking too much or taking drugs?
    . . . driving recklessly?

(4) impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating). (**Note:** Do not include suicidal or self-mutilating behavior covered in item (5).) ? 1 2 3 115

3 = several examples indicating a pattern of impulsive behavior (not necessarily limited to examples given above)

? = inadequate information 1 = absent or false 2 = subthreshold 3 = threshold or true

80

IF YES TO ANY OF ABOVE: Tell me about that. How often does it happen? What kinds of problems has it caused?			
97. You've said that you have *[Have you]* tried to hurt or kill yourself or threatened to do so.	(5) recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior 3 = two or more events (when not in a Major Depressive Episode)	? 1 2 3	116
98. You've said that you have *[Have you ever]* cut, burned, or scratched yourself on purpose. Tell me about that.			
99. You've said that *[Do]* you have a lot of sudden mood changes. Tell me about that. (How long do your "bad" moods last? How often do these mood changes happen? How suddenly do your moods change?)	(6) affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days) 3 = acknowledges trait	? 1 2 3	117
100. You've said that *[Do]* you often feel empty inside. Tell me more about this.	(7) chronic feelings of emptiness 3 = acknowledges trait	? 1 2 3	118
101. You've said that *[Do]* you often have temper outbursts or get so angry that you lose control. Tell me about this.	(8) inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights) 3 = acknowledges trait and at least one example	? 1 2 3	119

? = inadequate information **1 = absent or false** **2 = subthreshold** **3 = threshold or true**

81

102. You've said that *[Do]* you hit people or throw things when you get angry.

Tell me about this.

(Does this happen often?)

103. You've said that *[Do]* even little things get you very angry.

When does this happen?

(Does this happen often?)

104. You've said that when you are under a lot of stress, you *[When you are under a lot of stress, do you]* get suspicious of other people or feel especially spaced out.

Tell me about that.

(9) transient, stress-related paranoid ideation or severe dissociative symptoms

3 = several examples that do not occur exclusively during a Psychotic Disorder or a Mood Disorder With Psychotic Features

? 1 2 3 120

AT LEAST FIVE ITEMS ARE CODED "3"

1 3 121

↓

BORDERLINE PERSONALITY DISORDER

? = inadequate information 1 = absent or false 2 = subthreshold 3 = threshold or true

8.5.3. Schema Mode Inventory

How do you describe yourself?

INSTRUCTION: Listed below are statements that people might use to describe themselves. Please rate each item based on **how often** you believe or feel each statement **in general** using the frequency scale.

FREQUENCY: In general	
1= Never or Almost Never	4= Frequently
2= Rarely	5= Most of the time
3= Occasionally	6= All of the time

Frequency	**In general...**
	1. I demand respect by not letting other people push me around.
	2. I feel loved and accepted.
	3. I deny myself pleasure because I don't deserve it.
	4. I feel fundamentally inadequate, flawed, or defective.
	5. I have impulses to punish myself by hurting myself (e.g., cutting myself).
	6. I feel lost.
	7. I'm hard on myself.
	8. I try very hard to please other people in order to avoid conflict, confrontation, or rejection.
	9. I can't forgive myself.
	10. I do things to make myself the centre of attention.
	11. I get irritated when people don't do what I ask them to do.
	12. I have trouble controlling my impulses.
	13. If I can't reach a goal, I become easily frustrated and give up.
	14. I have rage outbursts.
	15. I act impulsively or express emotions that get me into trouble or hurt other people.

FREQUENCY: In general	
1= Never or Almost Never	4= Frequently
2= Rarely	5= Most of the time
3= Occasionally	6= All of the time

Frequency	**In general...**
	16. It's my fault when something bad happens.
	17. I feel content and at ease.
	18. I change myself depending on the people I'm with, so they'll like me or approve of me.
	19. I feel connected to other people.
	20. When there are problems, I try hard to solve them myself.
	21. I don't discipline myself to complete routine or boring tasks.
	22. If I don't fight, I will be abused or ignored.
	23. If you let other people mock or bully you, you're a loser.
	24. I physically attack people when I'm angry at them.
	25. Once I start to feel angry, I often don't control it and lose my temper.
	26. It's important for me to be Number One (e.g., the most popular, most successful, most wealthy, most powerful).
	27. I feel indifferent about most things.
	28. I can solve problems rationally without letting my emotions overwhelm me.
	29. I won't settle for second best.
	30. Attacking is the best defense.
	31. I feel cold and heartless toward other people.
	32. I feel detached (no contact with myself, my emotions or other people).
	33. I blindly follow my emotions.
	34. I feel desperate.
	35. I allow other people to criticize me or put me down.
	36. In relationships, I let the other person have the upper hand.
	37. I feel distant from other people.
	38. I act impulsively or express emotions that get me into trouble or hurt other people.
	39. I work or play sports intensively so that I don't have to think about upsetting things.

FREQUENCY: In general	
1= Never or Almost Never	4= Frequently
2= Rarely	5= Most of the time
3= Occasionally	6= All of the time

Frequency	In general...
	40. I'm angry that people are trying to take away my freedom or independence.
	41. I feel nothing.
	42. I do what I want to do, regardless of other people's needs and feelings.
	43. I don't let myself relax or have fun until I've finished everything I'm supposed to do.
	44. I throw things around when I'm angry.
	45. I feel enraged toward other people.
	46. I feel that I fit in with other people.
	47. I have a lot of anger built up inside of me that I need to let out.
	48. I feel lonely.
	49. I like doing something exciting or soothing to avoid my feelings (e.g., working, gambling, eating, shopping, sexual activities, watching TV).
	50. Equality doesn't exist, so it's better to be superior to other people.
	51. When I'm angry, I often lose control and threaten other people.
	52. I let other people get their own way instead of expressing my own needs.
	53. If someone is not with me, he or she is against me.
	54. In order to be bothered less by my annoying thoughts or feelings, I make sure that I'm always busy.
	55. I'm a bad person if I get angry at other people.
	56. I don't want to get involved with people.
	57. I feel that I have plenty of stability and security in my life.
	58. I know when to express my emotions and when not to.
	59. I'm angry with someone for leaving me alone or abandoning me.
	60. I don't feel connected to other people.
	61. I can't bring myself to do things that I find unpleasant, even if I know it's for my own good.
	62. I break rules and regret it later.
	63. I feel humiliated.
	64. I trust most other people.
	65. I act first and think later.
	66. I get bored easily and lose interest in things.
	67. Even if there are people around me, I feel lonely.

FREQUENCY: In general	
1= Never or Almost Never	4= Frequently
2= Rarely	5= Most of the time
3= Occasionally	6= All of the time

Frequency	In general...
	68. I don't allow myself to do pleasurable things that other people do because I'm bad.
	69. I assert what I need without going overboard.
	70. I feel special and better than most other people.
	71. I don't care about anything; nothing matters to me.
	72. It makes me angry when someone tells me how I should feel or behave.
	73. If you don't dominate other people, they will dominate you.
	74. I say what I feel, or do things impulsively, without thinking of the consequences.
	75. I feel like telling people off for the way they have treated me.
	76. I'm capable of taking care of myself.
	77. I'm quite critical of other people.
	78. I'm under constant pressure to achieve and get things done.
	79. I'm trying not to make mistakes; otherwise, I'll get down on myself.
	80. I deserve to be punished.
	81. I can learn, grow, and change.
	82. I want to distract myself from upsetting thoughts and feelings.
	83. I'm angry at myself.
	84. I feel flat.
	85. I have to be the best in whatever I do.
	86. I sacrifice pleasure, health, or happiness to meet my own standards.
	87. I'm demanding of other people.
	88. If I get angry, I can get so out of control that I injure other people.
	89. I am invulnerable.
	90. I'm a bad person.
	91. I feel safe.
	92. I feel listened to, understood, and validated.
	93. It is impossible for me to control my impulses.
	94. I destroy things when I'm angry.
	95. By dominating other people, nothing can happen to you.
	96. I act in a passive way, even when I don't like the way things are.

FREQUENCY: In general	
1= Never or Almost Never	4= Frequently
2= Rarely	5= Most of the time
3= Occasionally	6= All of the time

Frequency	In general...
	97. My anger gets out of control.
	98. I mock or bully other people.
	99. I feel like lashing out or hurting someone for what he/she did to me.
	100. I know that there is a 'right' and a 'wrong' way to do things; I try hard to do things the right way, or else I start criticizing myself.
	101. I often feel alone in the world.
	102. I feel weak and helpless.
	103. I'm lazy.
	104. I can put up with anything from people who are important to me.
	105. I've been cheated or treated unfairly.
	106. I feel left out or excluded.
	107. I belittle others.
	108. I feel optimistic.
	109. I feel I shouldn't have to follow the same rules that other people do.
	110. I'm pushing myself to be more responsible than most other people.
	111. I can stand up for myself when I feel unfairly criticized, abused, or taken advantage of.
	112. I don't deserve sympathy when something bad happens to me.
	113. I feel that nobody loves me.
	114. I feel that I'm basically a good person.
	115. When necessary, I complete boring and routine tasks in order to accomplish things I value.
	116. I feel spontaneous and playful.
	117. I can become so angry that I feel capable of killing someone.
	118. I have a good sense of who I am and what I need to make myself happy.

8.5.4. Wessex Dissociation Scale (WDS)

About your experiences:

This questionnaire asks about experiences that you may have in your daily life. Please indicate, by ticking one of the boxes, how often you have experiences like these. It is important that your answers state how often you have these experiences when you are **not** under the influence of alcohol or drugs.

		Never	Rarely	Some-times	Often	Very Often	All the time
1	Unwanted images from my past come into my head.	0	1	2	3	4	5
2	I hear voices when no-one has actually said anything.	0	1	2	3	4	5
3	Other people describe meetings that we have had but that I cannot remember.	0	1	2	3	4	5
4	Unwanted memories come into my head.	0	1	2	3	4	5
5	My personality is very different in different situations.	0	1	2	3	4	5
6	My mood can change very rapidly.	0	1	2	3	4	5
7	I have vivid and realistic nightmares	0	1	2	3	4	5
8	I don't always remember what people have said to me.	0	1	2	3	4	5
9	I feel physical pain, but it does not seem to bother me as much as other people.	0	1	2	3	4	5
10	I smell things that are not actually there.	0	1	2	3	4	5
11	I remember bits of past experiences, but cannot fit them together	0	1	2	3	4	5
12	I have arguments with myself	0	1	2	3	4	5
13	I do not seem to be as upset by things as I should be	0	1	2	3	4	5
14	I act without thinking	0	1	2	3	4	5
15	I do not really seem to get angry	0	1	2	3	4	5
16	I just feel numb and empty inside	0	1	2	3	4	5
17	I notice myself doing things that do not make sense	0	1	2	3	4	5
18	Sometimes I feel relaxed and sometimes I feel very tense, even though the situation is the same	0	1	2	3	4	5
19	Even though it makes no sense, I believe that doing certain things can prevent disaster	0	1	2	3	4	5

		Never	Rarely	Some-times	Often	Very Often	All the time
20	I have unexplained aches and pains	0	1	2	3	4	5
21	It feels as if there is more than one of me	0	1	2	3	4	5
22	Unwanted thoughts come into my head	0	1	2	3	4	5
23	My mind just goes blank	0	1	2	3	4	5
24	I feel touched by something that is not actually there	0	1	2	3	4	5
25	I have big gaps in my memory	0	1	2	3	4	5
26	I see something that is not actually there	0	1	2	3	4	5
27	My body does not feel like my own	0	1	2	3	4	5
28	I cannot control my urges	0	1	2	3	4	5
29	I feel detached from reality	0	1	2	3	4	5
30	Chunks of time seem to disappear without my being able to account for them	0	1	2	3	4	5
31	I sometimes look at myself as though I were another person	0	1	2	3	4	5
32	Things around me do not seem real	0	1	2	3	4	5
33	I do not seem to feel anything at all	0	1	2	3	4	5
34	I taste something that I have not eaten	0	1	2	3	4	5
35	I find myself unable to think about things however hard I try.	0	1	2	3	4	5
36	I talk to myself as if I was another person	0	1	2	3	4	5
37	I do not feel physical pain as much as other people	0	1	2	3	4	5
38	I hear things that are not actually there.	0	1	2	3	4	5
39	I find myself in situations or places with no memory of how I got there	0	1	2	3	4	5
40	It is absolutely essential that I do some things in a certain way.	0	1	2	3	4	5

8.5.5. Psychiatric Diagnostic Questionnaire (PDSQ)

PDSQ
TEST BOOKLET
Mark Zimmerman, M.D.
wps
Test with Confidence

Name: _____ Age: _____ ID #: _____

Date: _____ Gender: ☐ Male ☐ Female Education (Years Completed): _____

Ethnicity: ☐ Asian ☐ Black/African American ☐ Hispanic/Latino ☐ Native American ☐ Native Hawaiian/Other Pacific Islander ☐ White ☐ Other

This form asks you about emotions, moods, thoughts, and behaviors. For each question, check the box in the *Yes* column if it describes how you have been acting, feeling, or thinking. If the item does not apply to you, check the box in the *No* column. **Please answer every question.**

Yes	No		DURING THE PAST 2 WEEKS...
☐	☐	1.	...did you feel sad or depressed?
☐	☐	2.	...did you feel sad or depressed for most of the day, nearly every day?
☐	☐	3.	...did you get less joy or pleasure from almost all of the things you normally enjoy?
☐	☐	4.	...were you less interested in almost all of the activities you are usually interested in?
☐	☐	5.	...was your appetite significantly *smaller* than usual nearly every day?
☐	☐	6.	...was your appetite significantly *greater* than usual nearly every day?
☐	☐	7.	...did you sleep at least 1 to 2 hours *less* than usual nearly every day?
☐	☐	8.	...did you sleep at least 1 to 2 hours *more* than usual nearly every day?
☐	☐	9.	...did you feel very jumpy and physically restless, and have a lot of trouble sitting calmly in a chair, nearly every day?
☐	☐	10.	...did you feel tired out nearly every day?
☐	☐	11.	...did you frequently feel guilty about things you have done?
☐	☐	12.	...did you put yourself down and have negative thoughts about yourself nearly every day?
☐	☐	13.	...did you feel like a failure nearly every day?
☐	☐	14.	...did you have problems concentrating nearly every day?
☐	☐	15.	...was decision making more difficult than normal nearly every day?
☐	☐	16.	...did you frequently think of dying in passive ways like going to sleep and not waking up?
☐	☐	17.	...did you wish you were dead?
☐	☐	18.	...did you think you'd be better off dead?
☐	☐	19.	...did you have thoughts of suicide, even though you would not really do it?
☐	☐	20.	...did you seriously consider taking your life?
☐	☐	21.	...did you think about a specific way to take your life?

☐	☐	22.	Have you *ever experienced* a traumatic event such as combat, rape, assault, sexual abuse, or any other extremely upsetting event?
☐	☐	23.	Have you *ever witnessed* a traumatic event such as rape, assault, someone dying in an accident, or any other extremely upsetting incident?
			DURING THE PAST 2 WEEKS...
☐	☐	24.	...did thoughts about a traumatic event frequently pop into your mind?
☐	☐	25.	...did you frequently get upset because you were thinking about a traumatic event?
☐	☐	26.	...were you frequently bothered by memories or dreams of a traumatic event?
☐	☐	27.	...did reminders of a traumatic event cause you to feel intense distress?
☐	☐	28.	...did you try to block out thoughts or feelings related to a traumatic event?
☐	☐	29.	...did you try to avoid activities, places, or people that reminded you of a traumatic event?
☐	☐	30.	...did you have flashbacks, where it felt like you were reliving a traumatic event?
☐	☐	31.	...did reminders of a traumatic event make you shake, break out into a sweat, or have a racing heart?
☐	☐	32.	...did you feel distant and cutoff from other people because of having experienced a traumatic event?
☐	☐	33.	...did you feel emotionally numb because of having experienced a traumatic event?
☐	☐	34.	...did you give up on goals for the future because of having experienced a traumatic event?
☐	☐	35.	...did you keep your guard up because of having experienced a traumatic event?
☐	☐	36.	...were you jumpy and easily startled because of having experienced a traumatic event?

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Yes	No		DURING THE PAST 2 WEEKS...
☐	☐	37.	...did you often go on eating binges (eating a *very large* amount of food very quickly over a short period of time)?
☐	☐	38.	...did you often feel you could not control how much you were eating during an eating binge?
☐	☐	39.	...did you go on eating binges during which you ate so much that you felt uncomfortably full?
☐	☐	40.	...did you go on eating binges during which you ate a large amount of food even when you didn't feel hungry?
☐	☐	41.	...did you eat alone during an eating binge because you were embarrassed by how much you were eating?
☐	☐	42.	...did you go on eating binges and then feel disgusted with yourself afterward?
☐	☐	43.	...were you very upset with yourself because you were going on eating binges?
☐	☐	44.	...to prevent gaining weight from an eating binge did you go on strict diets or exercise excessively?
☐	☐	45.	...to prevent weight gain from an eating binge did you force yourself to vomit or use laxatives or water pills?
☐	☐	46.	...was your weight, or the shape of your body, one of the most important things that affected your opinion of yourself?

			DURING THE PAST 2 WEEKS...
☐	☐	47.	...did you worry obsessively about dirt, germs, or chemicals?
☐	☐	48.	...did you worry obsessively that something bad would happen because you forgot to do something important—like locking the door, turning off the stove, or pulling out the electrical cords of appliances?
☐	☐	49.	...were there things you felt compelled to do over and over (for at least ½ hour per day) that you could not stop doing when you tried?
☐	☐	50.	...were there things you felt compelled to do over and over even though they interfered with getting other things done?
☐	☐	51.	...did you wash and clean yourself or things around you obsessively and excessively?
☐	☐	52.	...did you obsessively and excessively check things or repeat actions over and over again?
☐	☐	53.	...did you count things obsessively and excessively?

			DURING THE PAST 2 WEEKS...
☐	☐	54.	...did you get very scared because your heart was beating fast?
☐	☐	55.	...did you get very scared because you were short of breath?
☐	☐	56.	...did you get very scared because you were feeling shaky or faint?
☐	☐	57.	...did you get sudden attacks of intense anxiety or fear that came on from out of the blue, for no reason at all?
☐	☐	58.	...did you get sudden attacks of very intense anxiety or fear during which you thought something terrible might happen, such as your dying, going crazy, or losing control?
☐	☐	59.	...did you have sudden, unexpected attacks of anxiety during which you had three or more of the following symptoms: heart racing or pounding, sweating, shakiness, shortness of breath, nausea, dizziness, or feeling faint?
☐	☐	60.	...did you worry a lot about having unexpected anxiety attacks?
☐	☐	61.	...did you have anxiety attacks that caused you to avoid certain situations or to change your behavior or normal routine?

			DURING THE PAST 2 WEEKS...
☐	☐	62.	...did things happen that you knew were true, but that other people told you were your imagination?
☐	☐	63.	...were you convinced that other people were watching you, talking about you, or spying on you?
☐	☐	64.	...did you think that you were in danger because someone was plotting to hurt you?
☐	☐	65.	...did you think that you had special powers other people didn't have?
☐	☐	66.	...did you think that some outside force or power was controlling your body or mind?
☐	☐	67.	...did you hear voices that other people didn't hear, or see things that other people didn't see?

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NOTE: MOST OF THE FOLLOWING QUESTIONS REFER TO THE PAST 6 MONTHS.

Yes	No		DURING THE PAST 6 MONTHS...
☐	☐	68.	...did you regularly avoid any situations because you were afraid they'd cause you to have an anxiety attack?
		69.	...did any of the following make you feel fearful, anxious, or nervous because you were afraid you'd have an anxiety attack in the situation?
☐	☐	a.	going outside far away from home
☐	☐	b.	being in crowded places
☐	☐	c.	standing in long lines
☐	☐	d.	being on a bridge or in a tunnel
☐	☐	e.	traveling in a bus, train, or plane
☐	☐	f.	driving or riding in a car
☐	☐	g.	being home alone
☐	☐	h.	being in wide-open spaces (like a park)
☐	☐	70.	...did you almost always get very anxious as soon as you were in any of the above situations?
☐	☐	71.	...did you avoid any of the above situations because they made you feel anxious or fearful?

			DURING THE PAST 6 MONTHS...
☐	☐	72.	...did you worry a lot about embarrassing yourself in front of others?
☐	☐	73.	...did you worry a lot that you might do something to make people think that you were stupid or foolish?
☐	☐	74.	...did you feel very nervous in situations where people might pay attention to you?
☐	☐	75.	...were you extremely nervous in social situations?
☐	☐	76.	...did you regularly avoid any situations because you were afraid you'd do or say something to embarrass yourself?
		77.	...did you worry a lot about doing or saying something to embarrass yourself in any of the following situations?
☐	☐	a.	public speaking
☐	☐	b.	eating in front of other people
☐	☐	c.	using public restrooms
☐	☐	d.	writing in front of others
☐	☐	e.	saying something stupid when you were with a group of people
☐	☐	f.	asking a question when in a group of people
☐	☐	g.	business meetings
☐	☐	h.	parties or other social gatherings
☐	☐	78.	...did you almost always get very anxious as soon as you were in any of the above situations?
☐	☐	79.	...did you avoid any of the above situations because they made you feel anxious or fearful?

			DURING THE PAST 6 MONTHS...
☐	☐	80.	...did you think that you were drinking too much?
☐	☐	81.	...did anyone in your family think or say that you were drinking too much, or that you had an alcohol problem?
☐	☐	82.	...did friends, a doctor, or anyone else think or say that you were drinking too much?
☐	☐	83.	...did you think about cutting down or limiting your drinking?
☐	☐	84.	...did you think that you had an alcohol problem?
☐	☐	85.	...because of your drinking did you have problems in your marriage; at your job; with your friends or family; doing household chores; or in any other important area of your life?

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Yes	No		DURING THE PAST 6 MONTHS...
☐	☐	86.	...did you think that you were using drugs too much?
☐	☐	87.	...did anyone in your family think or say that you were using drugs too much, or that you had a drug problem?
☐	☐	88.	...did friends, a doctor, or anyone else think or say that you were using drugs too much?
☐	☐	89.	...did you think about cutting down or limiting your drug use?
☐	☐	90.	...did you think you had a drug problem?
☐	☐	91.	...because of your drug use did you have problems in your marriage; at your job; with your friends or family; doing household chores; or in any other important area of your life?

			DURING THE PAST 6 MONTHS...
☐	☐	92.	...were you a nervous person on most days?
☐	☐	93.	...did you worry a lot that bad things might happen to you or someone close to you?
☐	☐	94.	...did you worry about things that other people said you shouldn't worry about?
☐	☐	95.	...were you worried or anxious about a number of things in your daily life on most days?
☐	☐	96.	...did you often feel restless or on edge because you were worrying?
☐	☐	97.	...did you often have problems falling asleep because you were worrying about things?
☐	☐	98.	...did you often feel tension in your muscles because of anxiety or stress?
☐	☐	99.	...did you often have difficulty concentrating because your mind was on your worries?
☐	☐	100.	...were you often snappy or irritable because you were worrying or feeling stressed out?
☐	☐	101.	...was it hard for you to control or stop your worrying on most days?

			DURING THE PAST 6 MONTHS...
☐	☐	102.	...have you had a lot of stomach and intestinal problems such as nausea, vomiting, excessive gas, stomach bloating, or diarrhea?
☐	☐	103.	...have you been bothered by aches and pains in many different parts of your body?
☐	☐	104.	Do you get sick more than most people?
☐	☐	105.	Has your physical health been poor *most of your life?*
☐	☐	106.	Are your doctors *usually* unable to find a physical cause for your physical symptoms?

			DURING THE PAST 6 MONTHS...
☐	☐	107.	...did you often worry that you might have a serious physical illness?
☐	☐	108.	...was it hard to stop worrying that you have a serious physical illness?
☐	☐	109.	...did your doctor say you didn't have a serious illness but it was still hard to stop thinking about it?
☐	☐	110.	...did you worry so much about having a serious illness that it interfered with your activities or it caused you problems?
☐	☐	111.	...did you visit the doctor a lot because you were worried that you had a serious physical illness?

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8.5.6. DSM-IV and ICD-10 Personality Questionnaire (DIP-Q)

About your characteristics:

Below you will find some questions dealing with your habits, your opinions, your way of reacting and how you have mainly felt, during the last five years. Separate items may seem a little odd, but taken together, your responses will add up to form a pattern.

We are interested in your personal experiences, not the experiences of others or what you believe others might regard s an appropriate response. There are no "right" or wrong answers.

Try to respond as honestly as possible and circle "**YES**" if the statement applies to you. Otherwise circle "**No".**

1- I prefer working with others and I am not afraid of criticism or disapproval.	Yes	No
2- I am unwilling to get involved with other people if I am uncertain whether they like me.	Yes	No
3- I avoid making new acquaintances for fear of being embarrassed or laughed at.	Yes	No
4- I am often worried about being criticized or rejected when I am with other people.	Yes	No
5- I feel self-assured and confident and like making new acquaintances.	Yes	No
6- I believe I am socially inadequate, unattractive or inferior to other people.	Yes	No
7- I am unwilling to take personal risks or engage in new activities in order to avoid embarrassing situations.	Yes	No
8- I am usually tense and anxious.	Yes	No
9- I am unwilling to change my job or move from where I live ;"better the devil you know".	Yes	No
10- I prefer to make up my own mind rather than following other people's advice.	Yes	No
11- I would prefer to give the responsibility for my most important life decisions to somebody else.	Yes	No

These questions are related to how it has been for you the last five years.

12- I usually tell people when I think they are wrong.	Yes	No
13- I have difficulty doing things for fear of making mistakes.	Yes	No
14- I may do things I don't like, in order to be popular.	Yes	No
15- I can take care of myself and have no difficulty living alone.	Yes	No
16- If my partner were to leave me, I would immediately try to start a new relationship to avoid being alone.	Yes	No
17- I feel confident because I know I can look after myself.	Yes	No
18- I find it difficult to make demands on people I am dependent on.	Yes	No
19- I have problems expressing my needs to relatives and friends.	Yes	No
20- I normally focus my attention on small details to the extent that I lose sight of the main point.	Yes	No
21- I have difficulty to completing tasks because I always want it to be perfect.	Yes	No
22- I put my work before my family, friends and leisure activities.	Yes	No
23- I have a higher moral standard than most people.	Yes	No
24- I have no difficulty throwing out things that are worn-out or worthless.	Yes	No
25- I want other people to do things exactly my way	Yes	No
26- I am generous with money.	Yes	No
27- I am stubborn and I always want to do things my way.	Yes	No

These questions are related to how it has been for you the last five years.

28- I prefer to do things myself otherwise I am not sure they are done exactly the way I want them.	Yes	No
29- I am cautious and always try to avoid mistakes by means of control.	Yes	No
30- I am indecisive and find making important decisions difficult.	Yes	No
31- I believe in traditional values and social convention.	Yes	No
32- I am wary of being exploited or let down.	Yes	No
33- I never feel sure about other people's loyalty.	Yes	No
34- I have to protect myself against malicious people and therefore I dislike confiding in others.	Yes	No
35- I am suspicious and wonder what is really behind what people say or do.	Yes	No
36- I believe in the saying "Forgiven is forgotten".	Yes	No
37- I often find I have to protect myself and my reputation against attack from other.	Yes	No
38- I often worry my partner may be unfaithful to me.	Yes	No
39- I believe that kindness and helpfulness can hide evil intentions.	Yes	No
40- I get very upset when I face a setback.	Yes	No
41- My own opinions are always right.	Yes	No
42- I enjoy being with friends.	Yes	No
43- My family is very important to me.	Yes	No

These questions are related to how it has been for you the last five years.

44- Most of the time I feel good when I can be with other people.	Yes	No
45- I have very little interest in having sex with another person.	Yes	No
46- I often have difficulties in relationships.	Yes	No
47- Very few things give me pleasure.	Yes	No
48- I have very close friends, apart from my family.	Yes	No
49- I am not affected by praise or criticism from other people.	Yes	No
50- Other people think I am emotionally cold, insensitive or detached.	Yes	No
51- I have problems in expressing strong feelings to other people.	Yes	No
52- I am a deep thinker and am often preoccupied with questions about life and the universe.	Yes	No
53- I don't know how to abide by social norms and conventions.	Yes	No
54- I often think that people are talking behind my back.	Yes	No
55- I often pick up hidden meanings in what people say or do.	Yes	No
56- I can communicate with others by means of telepathy.	Yes	No
57- I have a sixth sense for knowing when things will happen before they actually do.	Yes	No
58- I often mistake objects or shadows in a room for human figures.	Yes	No
59- I often have strange bodily experiences that others have difficulty in understanding.	Yes	No

These questions are related to how it has been for you the last five years.

60- People normally think I express myself in a strange way.	Yes	No
61- I am worried about myself as a human being.	Yes	No
62- Other people react to my way of expressing feelings.	Yes	No
63- Most people probably think that I am odd, eccentric or peculiar.	Yes	No
64- I feel comfortable when I am with people I know.	Yes	No
65- Sometimes I hear voices or have the experience of seeing things.	Yes	No
66- There are those who think that I am emotionally cold and have a negative manner.	Yes	No
67- I spend a lot of time thinking about my appearance.	Yes	No
68- I am obsessed by thoughts about sex or violence.	Yes	No
69- I have difficulty conforming to social norms and have committed illegal acts on more than one occasion	Yes	No
70- I usually lie if it suits my purposes	Yes	No
71- I am impulsive and act on my impulses.	Yes	No
72- I easily get angry and have been in physical fights several times.	Yes	No
73- I like dangerous living and I seldom think of my own or other people's safety.	Yes	No
74- I try to do my job to the best of my ability.	Yes	No
75- I take care to pay my bills on time.	Yes	No

These questions are related to how it has been for you the last five years.

76- I don't mind if other people are hurt as long as I get my way.	Yes	No
77- If things don't go my way I lose my temper, become angry or violent.	Yes	No
78- The rules of society are for others not me.	Yes	No
79- When something goes wrong for me it is usually somebody else's fault.	Yes	No
80- Those who stand in my way have only themselves to blame if they get hurt.	Yes	No
81- I will never celebrate my golden wedding anniversary. I think "variety is the spice of life" also when it comes to relationships.	Yes	No
82- I have never been troubled by feelings of guilt.	Yes	No
83- Punishment has never caused me to change my behaviour.	Yes	No
84- If I realise that a relationship is failing I can end it in a calm and careful way.	Yes	No
85- My feelings for other people often change from one extreme to the other.	Yes	No
86- People I have admired have often disappointed me.	Yes	No
87- My way of being as a person often produces problems at work, at school or at home.	Yes	No
88- I feel very lost inside; I don't really know who I am.	Yes	No
I often act impulsively without thinking which causes me to:		
89- Spend too much money.	Yes	No
90- Have sex with people I hardly know.	Yes	No

These questions are related to how it has been for you the last five years.

91- Drink too much.	Yes	No
92- Use Drugs.	Yes	No
93- Eat compulsively.	Yes	No
94- Drive (a car) carelessly.	Yes	No
95- Other people seem to be disturbed by what I do or say	Yes	No
96- I have never threatened to commit suicide.	Yes	No
97- I am not one of those who scratch their wrists or take too many pills when they feel bad.	Yes	No
98- My mood can change fast - one moment I can feel good and the next moment sad, irritated or despairing	Yes	No
99- I suffer from feelings of emptiness	Yes	No
100- I often get so angry that I lose control	Yes	No
101- When I feel really bad I can get painful feelings of unreality	Yes	No
102- When I feel under a lot of strain I imagine that people want to hurt me	Yes	No
103- I easily get into fights or quarrel with people, especially when I feel obstructed.	Yes	No
104- I will only get involved in something if there are quick results or immediate reward.	Yes	No
105- I am not sure what to do with my life.	Yes	No
106- I make sure I am the centre of attention.	Yes	No

These questions are related to how it has been for you the last five years.

107- People tend to think of me as excessively sexually provocative.	Yes	No
108- People regard me as superficial and emotionally unstable.	Yes	No
109- I use my looks to get attention.	Yes	No
110- My personality has prevented me from reaching my goals.	Yes	No
111- Other people complain that I talk a lot without getting anything important said.	Yes	No
112- I am the type of person who likes to express his/her emotions fully.	Yes	No
113- I am easily influenced by others or by events.	Yes	No
114- I am so open that new acquaintances quickly feel like close friends.	Yes	No
115- I have a strong need for excitement and attention.	Yes	No
116- Most of the time people underestimate my talents.	Yes	No
117- I often think about what a superior person I am or could be.	Yes	No
118- Only a chosen few can understand me or become my friend.	Yes	No
119- It is important to me to be admired.	Yes	No
120- I expect others to do me favours.	Yes	No
121- People think I use them for what I can get out of them.	Yes	No
122- People complain that I don't show sympathy or compassion.	Yes	No

These questions are related to how it has been for you the last five years.

123- I am seldom jealous of the achievements or successes of others.	Yes	No
124- I don't believe others are jealous of me.	Yes	No
125- I have been accused of being arrogant and condescending.	Yes	No
When I was a child (before the age of 15 years) I did the following:		
126- I bullied, threatened or intimidated others.	Yes	No
127- I often started fights.	Yes	No
128- I threatened with a gun or another dangerous weapon, e.g. knife, bat or broken bottle.	Yes	No
129- I was cruel to other people.	Yes	No
130- I was cruel to animals.	Yes	No
131- I mugged or robbed from others.	Yes	No
132- I forced others into sexual activity.	Yes	No
133- I started fires on purpose.	Yes	No
134- I broke windows or damaged other people's property.	Yes	No
135- I broke into someone else's house or car.	Yes	No
136- I lied a lot.	Yes	No
137- I often used to steal and went shoplifting.	Yes	No

These questions are related to how it has been for you the last five years.

138- I stayed away from home overnight without permission before the age of 13 years.	Yes	No
139- I ran away from home for more than a day.	Yes	No
140- I often truanted from school.	Yes	No

These questions are related to how it has been for you the last five years.

8.6. Statistical Analyses

8.6.1. Correlations between variables entered in the regression analysis

Correlations

		Dissociation	Vulnerable Child Mode	Angry Child Mode	Impulsive Child Mode	Detached Protector Mode	Punitive Parent Mode	Demanding Parent Mode
Pearson Correlation	Dissociation	1.000	.395	.630	.610	.700	.447	.495
	Vulnerable Child	.395	1.000	.572	.305	.715	.679	.372
	Angry Child Mode	.630	.572	1.000	.642	.699	.501	.379
	Impulsive Child	.610	.305	.642	1.000	.499	.378	.209
	Detached Protector	.700	.715	.699	.499	1.000	.628	.479
	Punitive Parent	.447	.679	.501	.378	.628	1.000	.554
	Demanding Parent	.495	.372	.379	.209	.479	.554	1.000
Sig. (1-tailed)	Dissociation	.	.005	.000	.000	.000	.001	.000
	Vulnerable Child	.005	.	.000	.025	.000	.000	.008
	Angry Child Mode	.000	.000	.	.000	.000	.000	.007
	Impulsive Child	.000	.025	.000	.	.000	.007	.092
	Detached Protector	.000	.000	.000	.000	.	.000	.001
	Punitive Parent	.001	.000	.000	.007	.000	.	.000
	Demanding Parent	.000	.008	.007	.092	.001	.000	.

Dissociation: dependent variable.

Six schema modes: independent variables.

8.6.2. Frequency table of ages in patient and non-patient groups

Age	Patients	Non-patients
14	n=3 (7.1%)	n=7 (16.7%)
15	n=6 (14.3%)	n=10 (23.8%)
16	n=13 (31.0%)	n=5 (11.9%)
17	n=6 (14.3%)	n=1 (2.4%)
18	n=5 (11.9%)	n=2 (4.8%)
19	n=3 (7.1%)	n=4 (9.5%)
20	n=1 (2.4%)	n=2 (4.8%)
21	n=0 (0.0%)	n=2 (4.8%)
22	n=3 (7.1%)	n=7 (16.7%)
23	n=1 (2.4%)	n=2 (4.8%)
24	n=1 (2.4%)	n=0 (0.0%)
Total	n=42(100%)	n=42(100%)