The relationships between maladaptive personality traits and experiences in close relationships

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Declaration

I declare that the work presented in this Thesis is my own. All studies and work detailed in the text of this Thesis is novel and has not been previously submitted as part of the requirements of a higher degree.

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Abstract

The proposed classification for Personality Disorders in section III of the DSM-5 conceptually differentiates impaired personality functioning (criterion A) from the occurrence of maladaptive personality traits (criterion B). Criterion B offers an alternative trait approach with five higher order domains (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism), and criterion A specifies a number of problems common to all Personality Disorders, specifically impairments in self- and interpersonal functioning. This Thesis aimed to establish significant relationships between personality pathology and experiences in close relationships. To achieve this goal, the following aims were proposed: the examination of relationships between maladaptive personality and personality functioning; the exploration of the links between maladaptive personality and attachment; the investigation of the links between maladaptive traits and relationship intimacy and satisfaction; and the examination of the maladaptive personality traits among different samples. The first study showed that Personality Functioning and maladaptive personality are negatively associated, with the latter being a negative predictor of Personality Functioning, replicating and extending the findings of previous research. Two studies also established associations between maladaptive personality and attachment styles (anxious and avoidant), finding that personality pathology is positively associated with anxious and avoidant attachment, but can also predict these domains. Another study addressed the associations of satisfaction and intimacy in relationships, with results showing how maladaptive personality can impact these. The last study inspected how the severity of maladaptive personality differed across samples and examined how combinations of traits and their severity are a helpful way to categorize distinct and meaningful groups. These findings help to further understand the role of personality pathology in the way it impacts experiences of close relationships, and to contribute to the conceptualization and operationalization of personality pathology as proposed by the DSM-5.

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Chapter One

Introduction

1.1 Overview

This introductory chapter delineates the key aspects of the literature regarding Personality and Personality Disorders, which were the foundation for the work presented in this Thesis. First, it will present a definition of personality, with a particular focus on the trait approach. Secondly, it will provide an overview of how Personality Disorders are conceptualized within the DSM-IV and DSM-IV-TR paradigm, and in relation to the trait model. Thirdly, it will detail some of the criticism towards that model and explore the new model for Personality Disorders in the DSM-5, describing the dimensional approach which served as the core for the work of this Thesis, the empirical base for dimensional versus categorical approaches, the operationalization of the model (PID-5), and the associations of this operationalization with other personality measures. Fourthly, it will explore the links between interpersonal aspects (personality functioning, attachment and romantic relationships) and maladaptive personality traits. Finally, it will outline the research described in the subsequent chapters of this Thesis, addressing its aims and research goals.

1.2 Personality

Personality refers to individual differences in characteristic patterns of feeling, thinking and behaving. One of the main areas regarding the study of personality is the understanding of these individual differences in personality characteristics (Kazdin, 2000). Similarly, Gerrig and Zimbardo (2002) define personality as the unique psychological qualities of a person, which influence many characteristic behavior patterns, over time and across varied situations.

According to Funder (2001), the study of personality has been historically based upon different paradigms, namely psychoanalytic, trait, behaviorist, and humanistic. McAdams (1995) argues that after examining the past 20 years of research on traits, it is possible to highlight five reasons why the concept of trait has surfaced as a powerful and legitimate way of conceptualizing and describing personality. Namely, this author states that a) traits are more than simple linguistic conveniences; b) several traits show significant longitudinal consistency; c) aggregation shows how well traits can predict behavior; d) situation effects are frequently no stronger than trait effects; and e) the unity of trait psychology is centered around the Five-Factor Model. In fact, McAdams (1995) claims that the Big Five Model was the most important development in trait psychology in the 1980s, with factor-analytic studies converging towards a five-factor model of personality traits, improving the place of trait psychology within the scientific field.

According to Costa and McCrae (1992), the Five-Factor Model of personality can be defined as a hierarchical organization of personality traits in terms of five basic dimensions. The Big Five domains are Extraversion (with traits such as activity, assertiveness, positive emotionality and sociability), Agreeableness (with traits such as tender-mindedness, trust, modesty and altruism), Conscientiousness (with traits such as goal and task-directed behaviors like organizing and prioritizing), Neuroticism (which relates to negative emotionality, such as feeling nervous, sad, tense or anxious) and Openness to Experience (with traits such as originality, imaginativeness or creativeness). In the words of John and Srivastava (1999) 'Extraversion implies an *energetic approach* toward the social and material world and includes traits such as sociability, activity, assertiveness, and positive emotionality. Agreeableness contrasts a *prosocial and communal orientation* toward others with antagonism and includes traits such as altruism, tender-mindedness, trust, and modesty. Conscientiousness

describes *socially prescribed impulse control* that facilitates task- and goal-directed behavior, such as thinking before acting, delaying gratification, following norms and rules, and planning, organizing, and prioritizing tasks. Neuroticism contrasts emotional stability and even-temperedness with *negative emotionality*, such as feeling anxious, nervous, sad, and tense. Finally, Openness to Experience (vs. closed-mindedness) describes the breadth, depth, originality, and complexity of an individual's *mental and experiential life*.' (John & Srivastava, 1999, p. 121)

Funder (2001) also highlights the importance of the Five-Factor Model (FFM) organization as one of the most universal models to conceptualize personality. Ulu and Tezer (2010) describe the Big Five model as a widely recognized taxonomy of personality dimensions. John et al. (2008) suggest that this model has been accepted as a higher order factor, helping to characterize and provide a better understanding of other personality constructs.

One of the fundamental aims of personality psychology is to unveil the factor structure of personality characteristics. Lexical studies have shown that the most significant personality traits are encoded as single terms in human languages. Therefore, applied lexical methodologies to personality structure aim to categorize the major dimensions of personality using factor analysis on self and peer ratings of comprehensive sets of personality trait adjectives. Furthermore, additional lexical studies in languages other than English seem to confirm the existence of the Five-Factor Model domains (Ashton & Lee, 2001).

Through the years, personality theorists and researchers have offered several suggestions for basic personality dimensions, and factor analysts have tried for decades to rally over personality scales. Nonetheless, these studies proved to be more controversial than unifying, particularly when competing systems emerged, such the ones from Guilford, from Cattell, and from Eysenck (John & McRae, 1992). The work of Allport and Odbert (1936) largely contributed to the construction of personality taxonomy, with a review of personality-descriptive words in the English language. Cattell (1943) then selected 171 traits out of the 4,500 inventoried by Allport and Odbert (1936), which were then used in peer-ratings of college students. Cattell developed sets of clusters of related words, using them to build factor analysis scales. Sixteen of these primary personality factors were then included in Cattell's Sixteen Personality Factors Questionnaire (16PF) (Cattell, Eber, & Tatsuoka, 1970).

Conversely, subsequent research using these data and efforts to replicate Cattell's studies, such as the one conducted by Fiske (1949), showed only 5 factors emerging. Tupes and Christal (1961) also found the five recurrent factors in their analyses of personality ratings across eight different samples. Norman (1963) then replicated these findings, stressing the importance of this Five-Factor structure.

Costa and McCrae (1976) analyzed the 16PF inventory, uncovering three meaningful clusters of scales, with two of them being similar to Eysenck's Neuroticism and Extraversion, and a third one that seemed to suggest a dimension based on Open *versus* Closed to Experience. The ensuing exploration of this third dimension opened the path to the creation of the NEO Personality Inventory (NEO-PI), using the original dimensions Neuroticism, Extraversion and Openness to Experience, but also adding Agreeableness and Conscientiousness. These authors used the NEO-PI to show the presence of the five-factor model in a number of existing personality measures, largely contributing to the ubiquity that the Big Five enjoys even today (Digman, 1990).

Research regarding the Big Five has focused on a two-level hierarchy, in which the five domains are at the top, encompassing narrower traits, at a second level, called facets. A good example of this hierarchic representation is the NEO-PI-R, in which each of the five domains is broken down into six facets (see Table 1.1). According to DeYoung (2006), these Big Five domains are usually regarded as orthogonal factors, being the most general and highest level of personality traits. In a study by DeYoung, Quilty and Peterson (2007), in which 75 facet scales from two Big Five inventories were analyzed, the results showed a two-factor solution for the 15 facets in each domain, suggesting the existence of 2 distinct yet correlated aspects within each of the Big Five domains, making a case for an intermediate level of personality between facets and domains, with a domain having two aspects which represent separable but related dimensions.

Table 1.1. – *Five-Factor Model (NEO-PI-R) domains and facets*

Domains	Facets
Neuroticism	Anxiety
	Hostility
	Depression
	Self-consciousness
	Impulsiveness
	Vulnerability to stress
Extraversion	Warmth
	Gregariousness
	Assertiveness
	Activity
	Excitement Seeking
	Positive Emotion
Openness to experience	Fantasy
	Aesthetics
	Feelings
	Actions
	Ideas
	Values
Agreeableness	Trust
	Straightforwardness
	Altruism
	Compliance
	Modesty
	Tendermindedness
Conscientiousness	Competence
	Order
	Dutifulness
	Achievement Striving
	Self-Discipline
	Deliberation

1.3 Personality Disorders

1.3.1 Definition

According to Gerrig and Zimbardo (2002), a Personality Disorder can be defined by an inflexible, maladaptive and chronic pattern of thinking, perceiving, and behaving which seriously impairs the ability of an individual to function in social or other settings. The International Classification of Mental and Behavioural Disorders (ICD-10, World Health Organization, 1992a) describes Personality Disorders as 'deeply ingrained and enduring behaviour patterns, manifesting themselves as inflexible responses to a broad range of personal and social situations'; representing 'either extreme or significant deviations from the way the average individual in a given culture perceives, thinks, feels, and particularly relates to others' and are 'developmental conditions, which appear in childhood or adolescence and continue into adulthood' (World Health Organization [WHO], 1992*a*, p. 156). These disorders are highly debilitating and wield a substantial impact on interpersonal and intimate relationships, as well as work functioning. However, the definition and conceptualization of Personality Disorders is not entirely straightforward. Alongside the debate on how to best conceptualize these disorders, there are difficulties in identifying key dimensions of personality dysfunction, as well as range of severity, which hinders the assessment and treatment of individuals with this type of diagnosis (Clarkin, Meehan, & Lezenweger, 2015).

An important aspect to consider about the definition of Personality Disorder is their distinction from mental illness or other 'mental disorders'. Personality Disorders are generally perceived as different from mental illness due to their persistence throughout adult life, whereas mental illness occurs from a morbid process of some kind, with a more recognizable onset and time course (Kendell, 2002). Existing evidence from randomized control trials shows that, for example, people with Borderline Personality Disorder present persistent impairment in social functioning even after undertaking specialist treatment (Bateman & Fonagy, 2008; McCain, Guimond, Streiner, Cardish, & Links, 2012). The assumption that Personality Disorders have an enduring and potentially lifelong nature, representing extremes of normal variation, frames both the ICD-10 and the Diagnostic and Statistical Manual of Mental Disorders (DSM) classifications.

Therefore, individuals with extreme variants of normal personality are diagnosed with Personality Disorders but only if maladapted to the environment: their behaviors markedly deviate from the expectations of society (APA, 2000). However, some authors argue that Personality Disorders can be perceived as adaptation disorders, as the crux of a Personality Disorder diagnosis is dependent on the adaptation to the environment rather than on the extreme standing of behaviors (Svrakic, Lecic-Tosevski, & Divac-Jovanovic, 2009). In this perspective, Personality Disorders are not sufficiently described by a set of traits, as extreme traits may not be necessarily dysfunctional (Clark & Ro, 2014). Rather, it perceives Personality Disorders as disorders of adaptation with extreme traits that, in turn, increase the risk of maladaptation (Svrakic, Whitehead, & Przybeck, 1993). Adaptation to the environment, understood as an epigenetic phenomenon (a product of the interaction between genes and environment) is a process that begins early in one's life. Failing to adapt to the environment can therefore reflect rigid and extreme behavior dispositions, inadequate environmental effects, or both. By using the term adaption disorder in lieu of Personality Disorder, the causality between the environment and the individual is more fairly distributed. That is, the 'blame' taken by the individual through the term 'Personality Disorder' is attenuated or even removed. This argument proposes that this terminology reflects more accurately the actual nature of the disorder but could also help reduce stigma around the diagnosis by shifting the emphasis on positive efforts to improve adaptation (Svrakic, Lecic-Tosevski, & Divac-Jovanovic, 2009).

Despite discussions around the nature and conceptualization of these disorders, clinicians tend to agree that Personality Disorders diagnoses are relevant to their clinical practice, as individuals with these disorders are at increased risk of various mental disorders (e.g., anxiety disorders or depression disorders), suicide and parasuicide, as well as substance misuse and dependence. Additionally, the presence of Personality Disorders impacts the treatment of most other mental disorders and the outcomes of individuals seeking treatment. For example, some individuals with Personality Disorders may not take prescribed medication as indicated or may not easily establish stable relationships with therapists (Kendell, 2002).

Historically, the conceptualization of Personality Disorders has occurred in three phases (Livesley, 2001). The first phase started in the 19th century and encompassed the work of clinical psychiatry and psychopathology pioneers who formulated

conceptions of character and its related pathology. The second phase, dating to the 1960s and 1970s, involved the empirical investigation of personality pathology that led to the introduction of a multi-axial system in the DSM-III (APA, 1980) who held a specific place for a Personality Disorder diagnosis with an official recognition and inherent criteria that in turn triggered the development of semi-structured interviews to assess Personality Disorders. These interviews were paramount to the beginning of investigations to reliably define valid Personality Disorder constructs. The third phase happened post DSM-III, when the problematic aspects of the original Personality Disorder classification became clear. The identification and research into these issues were the catalysts for the development of new classification attempts for clinical and research purposes which are detailed in this Chapter.

1.3.2 The categorical approach in the DSM-IV-TR

The Fourth Edition (Text Revised) of the Diagnostic and Statistical Manual of Mental Disorders (4th ed. text rev.; *DSM-IV-TR*; American Psychiatric Association [APA], 2000) defines Personality Disorder as the result of personality traits which become maladaptive, therefore causing a significant distress or impairment to an individual's social or personal functioning (APA, 2000). This category of diagnosis was included in the Axis II disorders of the manual. The DSM-IV-TR also defines personality traits as 'enduring patterns of perceiving, relating to, and thinking about the environment and oneself that are exhibited in a wide range of social and personal contexts' (APA, 2000, p. 686). These personality traits are different than personality states, which are better defined by an episode or a time period in which an individual experience specific feelings or mood changes; whereas a trait can be seen as a more longstanding way of how someone deals with reality. Similarly, the manual states that personality traits are only diagnosed as Personality Disorders if they reach a threshold for a Personality Disorder, but also only when they are maladaptive, inflexible and persisting, causing subjective distress or significant functional impairment (APA, 2000, p.689). The DSM manuals have recorded Personality Disorders in a separate axis of classification (Axis II) from so-called mental state disorders (Axis I), as personality was understood as completely different from these. In this conceptualization, Axis I disorders are regarded as usually temporary, reactive, dominated more by symptoms than behavior, diagnosed mainly on present state, and may develop into other Axis I

disorders, whereas Personality Disorders are regarded as permanent (or at least long-standing), generative, dominated mainly by behavior and relationships with others, diagnosed on basis of long-term function, and tend to remain stable over time.

Specifically, the DSM-IV-TR defines Personality Disorder as "an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture, is pervasive and inflexible, has an onset in adolescence or early childhood, is stable over time, and leads to distress or impairment." (APA, 2000, p. 685). The manual explicates that this pattern must be manifested in two (or more) of these areas: '1. Cognition (i.e., ways of perceiving and interpreting self, other people and events); 2. Affectivity (i.e., the range, intensity, liability, and appropriateness of emotional response); 3. Interpersonal functioning; 4. Impulse control.' (APA, 2000, p. 689)

The manual includes the description and criteria for the following Personality Disorders: Paranoid, Schizoid, Schizotypal, Antisocial, Borderline, Histrionic, Narcissistic, Avoidant, Dependent, Obsessive-Compulsive, and Personality Disorder Not Otherwise Specified (PDNOS). Personality Disorders are then grouped into three clusters that reflect descriptive similarities: Cluster A (Paranoid, Schizoid, and Schizotypal), with individuals with such disorders appearing eccentric or odd; Cluster B (Antisocial, Borderline, Histrionic and Narcissistic), with individuals with these disorders often being characterized as emotional, erratic or dramatic; and Cluster C (Avoidant, Dependent, and Obsessive-Compulsive), with individuals with these disorders frequently appearing fearful or anxious.

According to a study by Coid, Yang, Roberts et al. (2006), the weighted prevalence of Personality Disorder was 4.4% in the general population of the United Kingdom. This same study also revealed that Personality Disorder rates are highest among men, separated or unemployed individuals in urban areas. Samuels et al. (2002), using data from the International Personality Disorder Examination (IPDE) from 742 participants, estimated that the overall prevalence of DSM-IV Personality Disorders was 9% in an American community sample. They also concluded that Cluster A disorders were more prevalent in male individuals who had never been married, whereas Cluster B disorders were more associated with young males without a high school degree; Cluster C Personality Disorders were more common in high school graduates who were never married. Similarly, Lenzenweger, Lane, Loranger, and

Kessler (2007) reported data on the prevalence and correlates of clinician-diagnosed DSM-IV Personality Disorders in the general population of the United States of America, specifying for clusters A, B, and C, and also using the IPDE. Their Multiple Imputation prevalence estimates were 9.1% for any Personality Disorder, with a prevalence of 5.7% for Cluster A, 1.5% for Cluster B, and 6% for Cluster C.

1.3.3 Criticism and shortcomings

The DSM-IV-TR conceptualization of Personality Disorders has its problems. Firstly, the three-cluster classification has not been consistently validated and has serious limitations. This three-factor cluster structure resulted from a themed and theoretical analysis and did not stem from rigorous statistical methodologies (e.g., exploratory and confirmatory models), which led to its reliability and validity not being routinely tested across samples (Ireland, Brown, & Ballarini, 2006) and even questioned by its original authors (Ireland, 2010). Further studies have also proposed an alternative four factor structure of personality, designated the four As (i.e. 'Antisocial': encompassing Antisocial, Borderline, Histrionic and Narcissistic Personality Disorders; 'Asocial': comprising Schizoid Personality Disorder; 'Asthenic': including Avoidant and Dependent Personality Disorders; and 'Anankastic': encompassing Obsessive-Compulsive Personality Disorder). Some studies have however scrutinized the validity of the three clusters with mixed results: some have found support for the three-cluster model (Bagby, Joffe, Parker, & Schuller, 1993), some have reported three factors albeit not encompassing the same Personality Disorders (Moldin et al., 1994), some favored a four-factor structure (Mulder & Joyce, 1997; Chabrol, Rousseau, & Hyler, 2007), and some found five factors (Nestadt et al., 1994). Such mixed results suggest that a three-cluster system may not be the most meaningful way of classifying Personality Disorders.

As mentioned before, in the DSM-IV-TR, Personality Disorders and PDNOS were only defined by the core impairments combined with a specification of an individual's unique set of personality traits. Skodol et al. (2011), summarizing almost twenty years of research on Personality Disorders, suggested that with the DSM-IV-TR categorical criteria there was an excessive co-morbidity amongst Personality Disorders, as well as limited validity for some existing types. Moreover, these criteria

lacked specificity in the definition of the Personality Disorder, in the same way there was an instability of criteria sets and arbitrary diagnostic thresholds. Widiger and Trull (2007) list the five main failures of categorical criteria for Personality Disorders: excessive diagnostic co-occurrence, inadequate coverage, arbitrary and unstable boundaries with normal psychological functioning, heterogeneity among persons with the same diagnosis, and an inadequate scientific base.

As argued by Widiger and Mullins-Sweatt (2010), individuals do not have one specific Personality Disorder that can entirely explain their personality-related issues, but rather present a collection of maladaptive personality traits and a number of adaptive personality strengths. Therefore, while a medical model in which a list of specific symptoms refers to a specific pathology works for physical disorders, it is now more evident that such a model does not work for most to all mental disorders (Regier, Narrow, Kuhl, & Kupfer, 2009), including Personality Disorders (Widiger & Trull, 2007).

Comorbidity is also a problem of categorical diagnoses for Personality Disorders, with some individuals often presenting co-occurring Personality Disorders from the different aforementioned clusters (Krueger, Derringer, Markon, Watson, & Skodol, 2011). Grant, Stinson, Dawson, Chou, and Ruan (2005) studied the co-occurrence of 7 of the 10 Personality Disorders of the DSM-IV-TR in the United States population, concluding that Personality Disorders were significantly associated with other Personality Disorders from the same cluster, as well as highly associated with Personality Disorders from other clusters. According to these authors, the co-occurrence between DSM-IV Personality Disorders is pervasive in the United States general population, making a case for the need of future research to create a dimensional representation of Personality Disorders. Zimmerman and Rothschild (2005) interviewed 855 psychiatric outpatients with the Structured Interview for DSM-IV Personality (SIDP-IV), concluding that the majority of patients who met the criteria for one of the specific Personality Disorders were diagnosed with more than one.

Another issue regarding the polythetic criteria for Personality Disorders is related to the heterogeneity within categories. The DSM-IV criteria allow for two individuals to meet the criteria for the same Personality Disorder even if they only share a few or no diagnostic features at all (Morey, Benson, Busch, & Skodol 2015). Johansen, Karterud, Pedersen, Gude, and Falkum (2004) investigated the prototype validity of the

DSM-IV Borderline Personality Disorder (BPD) construct, showing that the criteria presented no distinction threshold between no-BPD and BPD patients, therefore maintaining a claim for a revision of the DSM-IV hierarchic criteria.

Similarly, there are concerns about the DSM-IV diagnosis and its dichotomous classification with arbitrary thresholds, as argued by Skodol et al. (2002) in their paper examining the psychopathology, comorbidity and personality structure of Borderline Personality Disorder. These authors suggest that due to the lack of evidence regarding the validity of the diagnostic threshold for a categorical diagnosis of BPD, as well as due to the heterogeneity in such a diagnosis, researchers should increment the DSM-IV diagnoses with assessments of the underlying structure of personality traits. Cooper and Balsis (2009) suggest that although the DSM-IV criteria regard each diagnostic criterion equally, i.e. each criterion bears the same weight towards achieving the diagnostic threshold, it can be argued that some criteria are more useful than others and can indeed express diverse levels of severity. In this study, using data from an epidemiological study and two-parameter logistic item response theory models, the authors estimated the level of latent severity associated with each diagnostic criterion for a specific DSM mental disorder. Results suggested that items, as well as a combination of them, identified varying severity levels. Additionally, some response patterns with fewer endorsed criteria were associated with a higher estimated latent severity than response patterns with more endorsed criteria, meaning that, for example, two individuals who fall at the criteria threshold can present different severity levels of their condition, and individuals who fall below the threshold could present greater problems and greater severity than those who actually meet the diagnostic thresholds.

It can also be argued that a categorical model offers poor coverage of personality psychopathology, as the diagnoses themselves offer no information regarding the nature of personality pathology (Morey et al., 2015), particularly when referring to Personality Disorder Not Otherwise Specified (PDNOS), which according to the meta-analysis of Verheul and Widiger (2004) is the most frequently diagnosed Personality Disorder in clinical practice, as well as one of the most common Personality Disorder diagnoses within research settings.

In the path to achieve a dimensional model, Bernstein, Iscan, and Maser (2007) surveyed four hundred members of the Association for Research on Personality Disorders, and the International Society for the Study of Personality Disorders, and

observed that 74% of the experts believed that the DSM-IV's categorical system of Personality Disorders diagnosis should be replaced. Moreover, these authors ascertained that 80% of the experts agreed that Personality Disorders are better conceived as personality dimensions or spectra, rather than categories, with an alternative mixed system of categories and dimensions being the most frequently endorsed proposed system.

1.3.4 *Dimensional models*

The problems derived from the uncertainties in the DSM-IV-TR classification system and conceptualization of Personality Disorders have prompted ways to move forward. For example, several dimensional models have been proposed for use in assessing personality psychopathology (e.g., Widiger & Simonsen, 2005), including the already mentioned Five-Factor Model, which has been recognized by the APA DSM-5 Personality and Personality Disorders (P&PD) workgroup as a model which played a substantial role in the development of the proposed DSM-5 model (APA, 2011).

Significant relationships between the Five-Factor Model (FFM) and Personality Disorders have been established in the literature. Numerous studies have shown that the FFM is able to encompass and characterize psychopathological personality, as well as overcome some of the issues of more categorical approaches to personality. For example, Lynam and Widiger (2001) concluded that the DSM-IV Personality Disorders can be understood from the dimensional perspective of the Five-Factor Model. These authors used an expert consensus approach to examine rates of prototypic cases of Personality Disorders. Experts in each of the 10 DSM-IV Personality Disorders used all the 30 facets from the Five-Factor Model to rate the cases. The main goal of this research was to extend the Five-Factor Model conceptualization of Personality Disorders as configurations of extreme scores on common dimensions of personality, i.e. ascertaining if it was possible to describe each of the disorders with the language of the Five-Factor Model. The authors found that agreement amongst the raters for almost all the DSM-IV Personality Disorders was satisfactory (low standard deviations, high proportional reductions in error variance, average interrater correlations, average corrected item-total correlations, and high composite coefficient

alphas). These results are particularly remarkable considering experts rated prototypic cases from their own varied experiences and not the same individual case, suggesting that most of the DSM-IV Personality Disorders can indeed be described, with usually high levels of agreement, using the 30 facets of the Five-Factor Model.

Similarly, Widiger and Mullins-Sweatt (2010) agree that a Five-Factor Model of Personality Disorders would deliver a description of abnormal personality functioning using the same model used to conceptualize a more general personality structure, while simultaneously addressing the concerns about the limitations of more categorical models, such as heterogeneity, inadequacy, and comorbidity/diagnostic co-occurrence. Saulsman and Page (2004) conducted a meta-analytic review of the relationships between the Five-Factor Model and DSM-IV-TR Personality Disorders, concluding that each Personality Disorder depicts a Five-Factor Model that is "meaningful and predictable given its unique diagnostic criteria" (p. 1075). Similarly, Costa and Widiger (2002) also conducted a meta-analytic review of the relationships between the Five-Factor Model and DSM-IV-TR Personality Disorders, but on a facet level, concluding that 'each of the DSM Personality Disorders shows meaningful and unique relationships to the domains of the FFM' (Costa & Widiger, 2002, p. 1336). Also at a facet level, Samuel and Widiger (2008) conducted a meta-analytic review of the relationships between the FFM and the DSM-IV-TR Personality Disorders, with results suggesting that empirical Five-Factor Model profiles generated for each Personality Disorder were congruent at the facet level with the hypothesized Five-Factor Model translations of the Personality Disorders from the DSM-IV-TR. In this review, for example, a diagnosis of Borderline Personality Disorder was positively related to all six facets of Neuroticism, negatively related to the Extraversion facets of warmth and positive emotions, negatively related to the Agreeableness facets of trust, straightforwardness, and compliance, as well as negatively related to the Conscientiousness facets of competence, dutifulness, self-discipline, and deliberation. Therefore, conceptualizing Personality Disorders using the Five-Factor Model could be a useful and meaningful approach to understand and describe them. However, Widiger, Costa, and McCrae (2002) argue that simply describing an individual in terms of the FFM would be insufficient to ascertain whether or not they have a Personality Disorder. It would also require the identification of maladaptive traits associated with elevations on any respective facet of the FFM, determining whether the distress and

impairment reached clinical significance to warrant a diagnosis, then matching the individual's personality profile to FFM profiles of theoretically, socially, or clinically important constructs for practitioners that prefer to use a single diagnostic term to describe a heterogeneous profile of maladaptive personality traits (Shedler et al., 2010).

Notwithstanding, looking at the relationships between the Five-Factor Model and Personality Disorders is an important step to understand the development of the dimensional model proposed for the DSM-5, described in the section below, but also a significant indicator of expected relationships between personality pathology and other factors examined in this Thesis.

1.3.5 The DSM-5 dimensional model proposal

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (*DSM-5*), released in 2013, maintained in its Section II an identical categorical model to the one used in previous editions of the manual. However, considering the difficulty of reaching consensus about changes in the conceptualization and diagnosis of Personality Disorders, and in response to the limitations and criticism of the previous diagnostic model, a new approach was included in Section III of the manual.

This new dimensional trait-based model was included for further research on Emerging Measures and Models, and then became an Alternative DSM-5 Model for Personality Disorders (Calvo et al., 2016). Clinicians and researchers alike suggested this dimensional model was a more advantageous one, supported by more empirical evidence, with higher clinical utility (Keeley, Flanagan, & McCluskey, 2014) and offering a better interpretation of comorbidity patterns (Skodol et al., 2011).

Overall, this new approach is divided into two parts: criterion A, referring to "significant impairments in self (identity or self-direction) and interpersonal (empathy or intimacy) functioning; and criterion B, which relates to the dimensional model of pathological personality traits" (APA, 2013, p. 762; Krueger et al., 2012). Additionally, this alternative model for the DSM-5 also states that 'The impairments in personality functioning and personality trait expression are relatively inflexible and pervasive across a broad range of personal and social situations (Criterion C); relatively stable across time, with onsets that can be traced back to at least adolescence or early adulthood (Criterion D); not better explained by another mental disorder (Criterion E);

not attributable to the effects of a substance or another medical condition (Criterion F); and not better understood as normal for an individual's developmental stage or sociocultural environment (Criterion G).' (APA, 2013, p. 762). Lastly, all the Personality Disorders present in Section III, described by specific criteria sets, along with PD-TS (Personality Disorder Trait Specified), must meet the abovementioned general criteria.

1.3.5.1 Criterion A

Specifically, criterion A regards the level of personality functioning disturbances in self and interpersonal functioning, which constitute the core of personality psychopathology and are evaluated on a continuum in this alternative diagnostic model. As expressed in Section III, self-functioning involves identity and self-direction, whereas interpersonal functioning involves empathy and intimacy. Evidence showing that generalized personality impairment severity assessed dimensionally significantly predicts current and prospective dysfunction (Bender, Morey, & Skodol, 2011; Crawford, Koldobsky, Mulder & Tyrer, 2011; Hopwood et al., 2011) led to the creation of the Level of Personality Functioning Scale (LPFS; APA, 2013, pp. 775-778) for the DSM-5 alternative model. Within this model, a Personality Disorder requires the demonstration of at least a moderate level (corresponding to a score of 2 in the LPFS) or greater in personality function impairment (criterion A). The development of the LPFS provided the conceptual basis for defining what is regarded as the essence of personality pathology. Therefore, the Level of Personality Functioning Scale (LPFS) makes use of each of these elements to discern five levels of impairment, which range from little or no impairment (Level 0, corresponding to a healthy and adaptive functioning;) to some (Level 1), moderate (Level 2), severe (Level 3), and extreme (Level 4) impairment (APA, 2013, p.762). This assessment of personality functioning, along with a dimensional system for personality traits allow the nuances of human personality to be better captured, as a variety of traits that can be measured on a continuum (Skodol et al., 2011). However, according to Rossi, Debast, and van Alphen (2016), the major limitation of the LPFS is that it does not measure self and interpersonal functioning separately, therefore not allowing for a distinction between problems centred on the self and those reflected in interpersonal aspects. Although problems in these two areas are commonly linked, it is not always the case and many

therapeutic approaches work separately on problems of self and interpersonal behaviors.

However, the manual presents the elements of personality functioning divided into self and interpersonal ones. Within the self, the manual distinguishes *identity* ('experience of oneself as unique, with clear boundaries between self and others; stability of self-esteem and accuracy of self-appraisal; capacity for, and ability to regulate, a range of emotional experience'); and *self-direction* ('pursuit of coherent and meaningful short-term and life goals; utilization of constructive and prosocial internal standards of behavior; ability to self-reflect productively'). Within the interpersonal aspect, two distinctions are made: *empathy* ('comprehension and appreciation of others' experiences and motivations; tolerance of differing perspectives; understanding the effects of one's own behavior on others'); and *intimacy* ('depth and duration of connection with others; desire and capacity for closeness; mutuality of regard reflected in interpersonal behavior'). (APA, 2013, p. 762). According to the manual, impairment in personality functioning is a predictor of the presence of a Personality Disorder, with a moderate level of impairment being required for a diagnosis. It is also suggested that empirical evidence has shown that this designated threshold of moderate level of impairment maximizes an accurate and efficient identification of a Personality Disorder by clinicians (APA, 2013). This would mean that it would be possible to identify a potential Personality Disorder diagnosis by looking at levels of impairment in personality functioning. By investigating how personality functioning impairment and maladaptive personality traits are associated, this research could provide clinicians with meaningful insights into the expected levels of impaired functioning associated with higher levels of personality pathology and, equally, how to best estimate the severity of this pathology by looking at impairment in functioning.

The LPFS allows for the assignment of an overall rating of functioning while also providing a structure for case formulations. The development of the LPFS envisioned a more effective and focused way of communicating with individuals about their subjective experiences, allowing for a clinician to gain better knowledge about their patients' views on self and others in order to better understand and address patient concerns, strengthening therapeutic alliance and facilitate treatment (Blatt & Luyten, 2009; Bender, Morey, & Skodol, 2011; Bender, Zimmermann, & Huprich, 2018).

Morey, Bender and Skodol (2013) examined whether a 5-point global rating of

personality dysfunction, as assessed by the aforementioned LPFS, would be associated with DSM-IV Personality Disorder diagnoses and other clinical judgments, by collecting ratings from 337 mental health clinicians. These psychologists and psychiatrists rated the DSM-5 alternative model, as well as all DSM-IV criteria, and also provided judgment regarding the clinical utility of a variety of constructs. The clinicians also presented complete diagnostic material (aligned with the DSM-IV and the proposed DSM-5 model) on one of their patients. Their results suggested that the single-item Level of Personality Functioning Scale rating delivers an indication of personality pathology severity, which can predict both a Personality Disorder diagnosis and clinician appraisals of prognosis, risk, functioning and intensity for the needed treatment. Despite showing promise, it is important to note that single-item scales can be problematic as they may present low content validity, lack a measure of internal consistency to assess reliability, and often have low sensitivity.

Recently, Morey (2017) worked on developing a self-report version of the LPFS, introducing the LPFS-SR (Level of Personality Functioning Scale – Self-Report), an 80-item self-report questionnaire with each item answered on a 4-point scale to allow for a more continuous rating of functioning. The items were each written to match all the information presented by the LPFS, generated for each unit of information. As some of the phrases of the LPFS were particularly complex and could include numerous units of information, separate questions were generated for each of these units. The questions were then administered to a community sample of 306 participants, and assessed for unidimensionality, internal consistency, and concurrent validity with four other self-report measures of general personality dysfunction. The items were highly related to each other, also showing high degrees of internal consistency. Moreover, the correlations with concurrent validity measures were large, with associations at the global level of dysfunction predominantly exceeding .80.

Hopwood, Good and Leslie (2018) also inspected the reliability, structure and validity of the Levels of Personality Functioning Scale–Self Report (LPFS–SR) in 3 community samples, with results showing that LPFS–SR scores were substantially correlated with a vast range of maladaptive personality traits, Personality Disorder constructs, and interpersonal problems. Furthermore, their results from a Principal Components Analysis (PCA) supported that the key components assessed by the LPFS-SR (identity, intimacy, self-direction, and empathy) can be characterized by a single factor, with all component score intercorrelations exceeding .75. These results align

with the authors' hypothesis that criterion A is a relatively homogeneous construct. However, results from other factorial studies using the LPFS present mixed results: while Morey (2017) found a single factor, Zimmerman et al. (2015) argued for a two-factor solution representing two dimensional constructs: self-functioning and interpersonal functioning.

1.3.5.2 Criterion B

The dimensional model also includes criterion B, which encompasses 25 lower order pathological personality trait facets, organized within five higher order maladaptive personality trait domains, namely Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism. This organization represents a hierarchical structure of personality in the sense that broad trait dimensions are represented by the trait domains whereas specific trait dimensions are described by trait facets. Therefore, the personality trait domains contain a spectrum of more specific trait facets that tendentially occur together (APA, 2013). Each of the trait domains is comprised by a set of three to seven trait facets, allowing for a more comprehensive description of more specific personality trait features (Anderson et al., 2012).

A personality trait is defined in this new model as a 'tendency to feel, perceive, behave, and think in relatively consistent ways across time and across situations in which the trait may manifest.' (APA, 2013, p. 772). This means that an individual with a high level of the personality trait anxiousness 'would tend to *feel* anxious readily, including in circumstances in which most people would be calm and relaxed' (APA, 2013, p. 772). Similarly, individuals with a high level of the anxiousness personality trait would equally *perceive* situations to be "anxiety-provoking" more often than those with a lower-level of said trait. Equally, these individuals would also tend to *behave* in a way to avoid situations they *think* would make them anxious. There is also a note to point out that personality traits can change throughout a person's life, and that individuals who present higher levels of a said trait, e.g., anxiousness, would not necessarily experience being anxious in all situations and at all times (APA, 2013).

This model is said to be dimensional in the sense that all individuals can be located in a spectrum of trait dimensions, which means that personality traits do apply to everyone in different degrees, instead of operating in a dichotomy of present versus

absent. Furthermore, personality traits are deemed to exist on a spectrum with two opposing poles (APA, 2013).

The manual also defines the 5 trait domains mentioned above. Negative Affectivity is defined as 'frequent and intense experiences of high levels of a wide range of negative emotions (e.g., anxiety, depression, guilt/shame, worry, anger) and their behavioral (e.g., self-harm) and interpersonal (e.g., dependency) manifestations'. Detachment is defined as 'avoidance of socioemotional experience, including both withdrawal from interpersonal interactions (ranging from casual, daily interactions to friendships to intimate relationships) and restricted affective experience and expression, particularly limited hedonic capacity.' Antagonism is defined by 'behaviors that put the individual at odds with other people, including and exaggerated sense of self-importance and a concomitant expectation of special treatment, as well as a callous antipathy toward others, encompassing both an unawareness of others' needs and feelings and a readiness to use others in the service of self-enhancement.' Disinhibition is defined by an 'orientation toward immediate gratification, leading to impulsive behavior driven by current thoughts, feelings, and external stimuli, without regard for past learning or consideration of future consequences.' Psychoticism is defined 'exhibiting a wide range of culturally incongruent, odd, eccentric, or unusual behaviors and cognitions, including both process (e.g., perception, dissociation) and content (e.g., beliefs)' (APA, 2013, pp. 779-781).

Table 1.2 depicts the definitions for the personality trait domains and for the trait facets, along with the location of the facets within the domains, according to Krueger, Eaton, Derringer, et al. (2011) as shown in the DSM-5. As mentioned before, each trait domain is associated with a combination of trait facets (e.g., there are six trait facets within Negative Affectivity, and three trait facets characterizing Psychoticism), and some trait facets are concurrently embodied in several trait domains (e.g., Hostility is present in the Negative Affectivity and in the Antagonism trait domains).

The personality trait domains are perceived as the maladaptive variants of the Five-Factor Model (FFM), and similar to the domains of the Personality Psychopathology Five (PSY-5). Remarkably, the DSM-5 structure of maladaptive traits clearly resembles the structure of normal personality as conceptualized by the Five-Factor Model. Specifically, Negative Affectivity resembles the FFM Neuroticism, Detachment resembles low FFM Extraversion, Antagonism resembles low FFM

Agreeableness, Disinhibition resembles low FFM Conscientiousness, and Psychoticism resembles FFM Openness. Furthermore, these relationships have been tested and evidenced in research. For example, Thomas et al. (2012) tested the higher-order convergence between the DSM-5 pathological trait model and the Five-Factor Model in a non-clinical sample using Exploratory Factor Analysis (EFA), with results indicating that the five higher-order factors reflect the domains of the Five-Factor Model, i.e. DSM-5 traits loaded as expected with Five-Factor domains. These results show that common higher-order dimensions can be identified in a conjoint factor analysis of DSM-5 and Five-Factor Model traits, suggesting congruence between pathological and normal personality systems, allowing for further integration between research in personality pathology and research with normative personality traits.

Table 1.2 – *Definitions of DSM-5 Personality Disorder trait domains and facets*

Definitions of DSM-5 Personality Disorder trait domains and facets	
Domains and Facets	Definitions
NEGATIVE AFFECTIVITY	Frequent and intense experiences of high levels of a wide range of negative emotions (e.g., anxiety, depression, guilt/ shame, worry, anger) and their behavioral (e.g., self-harm) and interpersonal (e.g., dependency) manifestations.
Emotional Lability	Instability of emotional experiences and mood; emotions that are easily aroused, intense, and/or out of proportion to events and circumstances.
Anxiousness	Feelings of nervousness, tenseness, or panic in reaction to diverse situations; frequent worry about the negative effects of past unpleasant experiences and future negative possibilities; feeling fearful and apprehensive about uncertainty; expecting the worst to happen.
Separation Insecurity	Fears of being alone due to rejection by – and/or separation from – significant others, based in a lack of confidence in one's ability to care for oneself, both physically and emotionally.

Submissiveness	Adaptation of one's behavior to the actual or perceived interests and desires of others even when doing so is antithetical to one's own interests, needs, or desires.
Hostility	Persistent or frequent angry feelings; anger or irritability in response to minor slights and insults; mean, nasty, or vengeful behavior. *See also* Antagonism.
Perseveration	Persistence at tasks or in a particular way of doing things long after the behavior has ceased to be functional or effective; continuance of the same behavior despite repeated failures or clear reasons for stopping.
Depressivity	*See* Detachment.
Suspiciousness	*See* Detachment.
Restricted affectivity (lack of)	The **lack of** this facet characterizes **low levels** of Negative Affectivity. *See* Detachment for definition of this facet.
DETACHMENT	Avoidance of socioemotional experience, including both withdrawal from interpersonal interactions (ranging from casual, daily interactions to friendships to intimate relationships) and restricted affective experience and expression, particularly limited hedonic capacity.
Withdrawal	Preference for being alone to being with others; reticence in social situations; avoidance of social contacts and activity; lack of initiation of social contact.
Intimacy Avoidance	Avoidance of close or romantic relationships, interpersonal attachments, and intimate sexual relationships.
Anhedonia	Lack of enjoyment from, engagement in, or energy for life's experiences; deficits in the capacity to feel pleasure and take interest in things.
Depressivity	Feelings of being down, miserable, and/or hopeless; difficulty recovering from such moods; pessimism about

	the future; pervasive shame and/or guilt; feelings of inferior self-worth; thoughts of suicide and suicidal behavior.
Restricted Affectivity	Little reaction to emotionally arousing situations; constricted emotional experience and expression; indifference and aloofness in normatively engaging situations.
Suspiciousness	Expectations of – and sensitivity to – signs of interpersonal ill-intent or harm; doubts about loyalty and fidelity of others; feelings of being mistreated, used, and/or persecuted by others.
ANTAGONISM	Behaviors that put the individual at odds with other people, including an exaggerated sense of self-importance and a concomitant expectation of special treatment, as well as a callous antipathy toward others, encompassing both an unawareness of others' needs and feelings and a readiness to use others in the service of self-enhancement.
Manipulativeness	Use of subterfuge to influence or control others; use of seduction, charm, glibness, or ingratiation to achieve one's ends.
Deceitfulness	Dishonesty and fraudulence; misrepresentation of self; embellishment or fabrication when relating events.
Grandiosity	Believing that one is superior to others and deserves special treatment; self-centeredness; feelings of entitlement; condescension toward others.
Attention Seeking	Engaging in behavior designed to attract notice and to make oneself the focus of others' attention and admiration.
Callousness	Lack of concern for the feelings or problems of others; lack of guilt or remorse about the negative or harmful effects of one's actions on others.

Hostility	*See* Negative Affectivity.

DISINHIBITION	Orientation toward immediate gratification, leading to impulsive behavior driven by current thoughts, feelings, and external stimuli, without regard for past learning or consideration of future consequences.
Irresponsibility	Disregard for – and failure to honor – financial and other obligations or commitments; lack of respect for – and lack of follow through on – agreements and promises; carelessness with others' property.
Impulsivity	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 behavior under emotional distress.
Distractibility	Difficulty concentrating and focusing on tasks; attention is easily diverted by extraneous stimuli; difficulty maintaining goal focused behavior, including both planning and completing tasks.
Risk Taking	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; reckless pursuit of goals regardless of the level of risk involved.
Rigid Perfectionism (lack of)	Rigid insistence on everything being flawless, perfect, and without errors or faults, including one's own and others' performance; sacrificing of timeliness to ensure correctness in every detail; believing that there is only one right way to do things; difficulty changing ideas and/or viewpoint; preoccupation with details, organization, and order. The *lack of* this facet characterizes *low levels* of Disinhibition.

PSYCHOTICISM	Exhibiting a wide range of culturally incongruent odd, eccentric, or unusual behaviors and cognitions, including both process (e.g., perception, dissociation) and content (e.g., beliefs).
Unusual Beliefs and Experiences	Belief that one has unusual abilities, such as mind reading, telekinesis, thought-action fusion, unusual experiences of reality, including hallucination-like experiences.
Eccentricity	Odd, unusual, or bizarre behavior, appearance, and/or speech; having strange and unpredictable thoughts; saying unusual or inappropriate things.
Cognitive and Perceptual Dysregulation	Odd or unusual thought processes and experiences, including depersonalization, derealization, and dissociative experiences; mixed sleep-wake state experiences; thought-control experiences.

The new DSM-5 proposal, however, reduced the number of specified Personality Disorder types from ten to six, diagnosing the remaining types in terms of the 25 trait dimensional model, with each Personality Disorder having a specific combination of trait domains and trait facets. This task was carried out by the Work Group who reviewed the literature and assessed the strength of the published empirical data supporting the construct validity of each of the DSM-IV Personality Disorders, a process akin to the one undertaken when developing the DSM-IV itself. According to Anderson et al. (2013) this not only aids diagnostic clarity, but also establishes continuity with the previous DSM-IV diagnoses. Paranoid, Schizoid, Histrionic, and Dependent Personality Disorders were removed as these disorders purportedly had minimal evidence for validity and low clinical utility (Bornstein, 2011). Therefore, this DSM-5 proposal describes six specific Personality Disorders: Antisocial/Psychopathic, Avoidant, Narcissistic, Borderline, Obsessive-Compulsive and Schizotypal. Additionally, a diagnosis of Personality Disorder Trait Specified (PD-TS) can be made when a Personality Disorder is deemed present yet the criteria for a specific one cannot be met (APA, 2013; Anderson et al., 2012).

Besides the number reduction of Personality Disorders, this new proposal also

aimed for a description of the types in a narrative format, which combined not only typical deficits in self and interpersonal functioning, but also particular configurations of behaviors and traits, such as pathological personality traits and common symptomatic behaviors. Table 1.3 below shows the general diagnostic criteria for Personality Disorders according to DSM-IV and the alternative model for DSM-5, as well as an example of the diagnostic differences for Antisocial Personality Disorder. To receive a diagnosis of Antisocial Personality Disorder, an individual must present pathological personality trait facets within the Antagonism trait domain (specifically Manipulativeness, Deceitfulness, Callousness, and Hostility) and trait facets within the Disinhibition trait domain (specifically Irresponsibility, Impulsivity and Risk Taking).

Table 1.3 – *General criteria for Personality Disorder in DSM-IV and DSM-5, criteria for the diagnosis of Antisocial Personality Disorder*

General criteria for Personality Disorder	
DSM-IV Criteria	DSM-5 Criteria
A. An enduring pattern of inner experience and behavior the deviates markedly from the expectations of the individual's culture. This pattern is manifested in two (or more) of the following areas:	The essential features of a Personality Disorder are impairments in personality (self and interpersonal) functioning and the presence of pathological personality traits. To diagnose a Personality Disorder, the following criteria must be met:
1. Cognition (i.e., ways of perceiving and interpreting self, other people and events)	A. Significant impairments in self (identity or self-direction) and interpersonal (empathy or intimacy) functioning.
2. Affectivity (i.e., the range, intensity, liability, and appropriateness of emotional response)	
3. Interpersonal functioning	B. One or more pathological personality trait domains or trait facets.
4. Impulse control	
B. The enduring pattern is inflexible and pervasive across a broad range of personal and social situations.	C. The impairments in personality functioning and the individual's personality trait expression are relatively stable across time and consistent across situations.
C. The enduring pattern leads to clinically significant distress or impairment in social,	D. The impairments in personality functioning and the individual's personality trait expression

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 abuse, a medication) or a general medical condition (e.g., head trauma).

are not better understood as normative for the individual's developmental stage or sociocultural environment.

E. The impairments in personality functioning and the individual's personality trait expression are not solely due to the direct physiological effects of a substance (e.g., a drug of abuse, medication) or a general medical condition (e.g., severe head trauma).

Antisocial Personality Disorder	
DSM-IV Criteria	DSM-5 Criteria

A. There is a pervasive pattern of disregard for and violation of the rights of others occurring since age 15 years, as indicated by three (or more) of the following: having hurt, mistreated, or stolen from another.
 	
 1. Failure to conform to social norms with respect to lawful behaviors as indicated by repeatedly performing acts that are grounds for arrest.
 2. Deceitfulness, as indicated by repeated lying, use of aliases, or conning others for personal profit or pleasure.
 3. Impulsivity or failure to plan ahead.
 4. Irritability and aggressiveness, as indicated by repeated physical fights or assaults.
 5. Reckless disregard for safety of self or others.
 6. Consistent irresponsibility, as indicated by repeated failure to
	The essential features of a Personality Disorder are impairments in personality (self and interpersonal) functioning and the presence of pathological personality traits. To diagnose antisocial Personality Disorder, the following criteria must be met:
	
	 A. Significant impairments in **personality functioning** manifest by:
	
	 1. Impairments in **self functioning** (a or b):
	    a) **Identity**: Ego-centrism; self-esteem derived from personal gain, power, or pleasure.
	    b) **Self-direction**: Goal-setting based on personal gratification; absence of prosocial internal standards associated with failure to conform to lawful or culturally normative ethical behavior.
	
	 AND

sustain consistent work behavior or honor financial obligations.

7. Lack of remorse, as indicated by being indifferent to or rationalizing.

B. The individual is at least age 18 years.

C. There is evidence of Conduct Disorder with onset before age 15 years.

D. The occurrence of antisocial behavior is not exclusively during the course of Schizophrenia or a Manic Episode.

2. Impairments in **interpersonal functioning** (a or b):

a) **Empathy**: Lack of concern for feelings, needs, or suffering of others; lack of remorse after hurting or mistreating another.

b) **Intimacy**: Incapacity for mutually intimate relationships, as exploitation is a primary means of relating to others, including by deceit and coercion; use of dominance or intimidation to control others

B. Pathological **personality traits** in the following domains:

1. **Antagonism**, characterized by:

a) **Manipulativeness**: Frequent use of subterfuge to influence or control others; use of seduction, charm, glibness, or ingratiation to achieve one's ends.

b) **Deceitfulness**: Dishonesty and fraudulence; misrepresentation of self; embellishment or fabrication when relating events.

c) **Callousness**: Lack of concern for feelings or problems of others; lack of guilt or remorse about the negative or harmful effects of one's actions on others; aggression; sadism.

d) **Hostility**: Persistent or frequent angry feelings; anger or irritability in response to minor slights and insults; mean, nasty, or vengeful behavior.

2. **Disinhibition**, characterized by:

a) **Irresponsibility**: Disregard for – and failure to honor – financial and other obligations or commitments; lack of respect for – and lack of follow through on – agreements and promises.

b) **Impulsivity**: 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.

c) **Risk taking**: Engagement in dangerous, risky, and potentially self-damaging activities, unnecessarily and without regard for consequences; boredom proneness and thoughtless initiation of activities to counter boredom; lack of concern for one's limitations and denial of the reality of personal danger

C. The impairments in personality functioning and the individual's personality trait expression are relatively stable across time and consistent across situations.

D. The impairments in personality functioning and the individual's personality trait expression are not better understood as normative for the individual's developmental stage or sociocultural environment.

E. The impairments in personality functioning and the individual's personality trait expression are not solely due to the direct physiological effects of a substance (e.g., a drug of abuse, medication) or a general medical condition (e.g., severe head trauma).

F. The individual is at least age 18 years.

1.3.6 Empirical base for dimensional vs categorical approaches

Bagby (2013) argues that one of the advantages of this dimensional model, which according to them is empirically superior regarding the conceptualization and assessment of personality psychopathology, is its exposure to audiences which have not been in contact with such a model, opening the doors to new research. It can also provide the foundation for the conceptualization of Personality Disorders in future editions of the DSM.

Moreover, Widiger and Trull (2007) argue that such a dimensional model of classification tackles most limitations and issues inherent to the categorical diagnostic criteria. They maintain that a multifactorial description of a person's Personality Disorder avoids several overlapping diagnoses and rather describes psychopathology by recognizing a unique combination of maladaptive traits. Muñoz-Champel, Gutiérrez, Peri, and Torrubia (2018) conducted a factor analysis on the Personality Diagnostic Questionnaire (PDQ–4C; Hyler, 1994) at the criterion level in a sample of 2,519 clinical and nonclinical individuals. These authors found a resulting structure that was more similar to the proposed dimensional model than to the DSM-IV-TR categorical classification at all hierarchical levels. Antisocial and Paranoid Personality Disorders (and also, but to a lesser extent, Dependant, Depressive, Avoidant, and Schizoid Personality Disorders) were relatively homogeneous, whereas the remainder of the disorders appeared to be combinations of two or three unrelated dimensions, supporting the evidence for empirically based dimensional taxonomies.

Additional to considering the previously mentioned problematic classification issues with the Personality Disorders, the proposed DSM-5 trait model also provides broader dimensions for structure and conceptualization of psychopathology (Fossati, Krueger, Markon, Borroni, & Maffei, 2013), in a way that even without further diagnostic categories, the hierarchical organization of traits represents a wider range of maladaptive personality functioning (Widiger & Samuel, 2005a). Moreover, as argued by Kupfer, First and Regier (2002), the limitations of the categorical diagnostic system

can only be overcome if a paradigm shift occurs, by moving from a categorical model to a dimensional classification.

According to Hopwood, Wright, Ansell, and Pincus (2013), the DSM-5 Work Group proposed a more specific and quantifiable definition of personality pathology as it involves dysfunction of the self (goal-directedness and identity) and in relation to others (empathy and intimacy). Therefore, a dimensional rating for Personality Disorders directs us to an interpersonal level, which explains why the most recent empirical and discussion papers focus on these aspects.

Additionally, Morey et al. (2012), in their second comparison of alternative models for Personality Disorders (with a 6, 8, and a 10-year follow-up) concluded that pathological traits exhibit far greater predictive validity than a categorical Personality Disorder diagnosis. This reiterates that the DSM-5 Personality Disorder assessment should include personality traits with characteristic features of Personality Disorders.

Notwithstanding, the alternative model has too received some criticism. The decision to reduce the number of Personality Disorders and the removal of particular ones was deemed problematic by some authors and researchers in the field. Critical voices raised concerns about the inadequacy of information regarding the parameters of the literature search conducted by the Work Group that informed this decision. Equally, critics have also argued that the empirical support for the proposed changes was mixed, and some disorders received more attention than others when the Work Group reviewed previous research (Bornstein, 2011). These critics have argued for systematic research on personality pathology so that adequate empirical data are used to decide which disorders to retain, remove or revise in future editions of the DSM.

Furthermore, a group of leaders in the field of Personality Disorders argued that clinicians will not use the model as it is too complicated, requiring patience and persistence to be used in clinical practice (Shedler et al., 2010). Additionally, they argued that trait-based systems, albeit validated, are difficult to be transformed into clinically useful diagnostic systems, rendering them less helpful in real world clinical diagnosis. Regarding the five personality trait domains proposed, the group was concerned they might be insufficient to include the range of personality pathology seen in the community, and even combinations of proposed dimensional trait ratings would not easily yield the omitted syndromes from the alternative model. While endorsing the

benefits of a dimensional approach to establish clinical constructs such as severity, the group did not agree with the usage of non-clinical concepts drawn from academic personality psychology.

1.3.7 Operationalization of the DSM-5 dimensional model: PID-5

The Personality and Personality Disorders work group developed a self-report instrument which operationalizes and assesses the abovementioned model: the Personality Inventory for the DSM-5 (PID-5; Krueger, Derringer, Markon, Watson, & Skodol, 2012; see Appendix A), which was used as the main instrument in the studies presented in this Thesis.

In order to establish a personality trait model suitable for the DSM-5, the Workgroup and other consultants reviewed existing measures and models of maladaptive personality. It is worth noting the work of Widiger and Simonsen (2005) whose model with four broad bipolar domains (Extraversion vs. Introversion, Antagonism vs. Compliance, Constraint vs. Impulsivity, and Negative Affect vs. Emotional Stability) served as an organizing structure for traits found across 18 models described in their reviewed literature. A potential fifth domain (Unconventionality vs Closedness to Experience) was also considered but despite being assessed by the Revised NEO Personality Inventory (NEO PI-R; Costa & McCrae, 1992), it was noted that it was not well represented in the reviewed models. Additionally, a meta-analysis by Samuel and Widiger (2008) showed zero correlation between this domain and DSM-IV Personality Disorders. A domain pertaining odd or peculiar traits which would cover key features of Schizotypal Personality Disorder was also identified in the reviewed research, prompting the goal of identifying and measuring traits in a fifth domain of Psychoticism. The resulting model with five domains resembled the Harkness' model of clinically relevant personality variants named Personality Pathology 5 (PSY-5, Harkness et al., 1995).

Krueger et al. (2012) aimed to identify and operationalize specific maladaptive personality dimensions which would fall within the five broad domains, focusing on the poles of these domains which are associated with Personality Disorders, meaning that features of Personality Disorders tend to gravitate towards specific poles of the domains. These authors also looked into a meta-analytic review of literature focused on the associations between the Five-Factor Model (similar to the model described by

Widiger and Simonsen) and DSM-IV Personality Disorders (Samuel & Widiger, 2008), in which these disorders were linked to Introversion (the absence of Five-Factor Model's Extraversion), Antagonism (the absence of Five-Factor Model's Agreeableness), Impulsivity (the absence of Five-Factor Model's Conscientiousness), and Negative Affect (Five-Factor Model's Neuroticism), with two notable exceptions: an association between Obsessive-Compulsive Disorder and Conscientiousness, and an association between Histrionic Personality Disorder and Extraversion. To this effect, Krueger et al. (2012) aimed to include core features of Histrionic and Obsessive-Compulsive Personality Disorders in their trait list. The Introversion and Impulsivity domains were then renamed Detachment and Disinhibition to better encompass the content of these domains.

The instrument, designed for both research and clinical use, was therefore developed based on a review of the existing models and measures of maladaptive personality traits. In their paper describing the initial construction of the measure, Krueger et al. (2012) used a list of specific traits and domains encompassing clinically relevant maladaptive personality characteristics, based on workgroup deliberations and literature reviews. The authors then developed the model and the instrument iteratively, using psychometric methods such as item response theory models, and data from treatment-seeking participants as well as community samples. In sum, results showed 25 reliably measured core elements of personality description that were encompassed by 5 broader domains of maladaptive personality, namely Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism. Specifically, the authors started with a hypothesized group of domains encompassing maladaptive personality variation in models and pre-existing instruments, which, as described above, were identified during the DSM-5 process. Consultants and work group members then produced 37 trait facets as potential exemplars; these are specific personality traits and are encompassed by the broad trait domains, with the aim of covering all the domains. A preliminary list of 37 trait facets generated by the workgroup and consultants' contributions was concluded, with brief descriptions written for each trait facet. Following this, two rounds of data collection were conducted with the goal of measuring the reliability of each proposed trait facet and examining if trait facets could be collapsed or if items could be reassigned amongst trait facets within the broad trait domain. The first round of data collection aimed to assess the ability to measure the 37 initial trait facets and used 8 personality items per each of the proposed items (296

items in total), in a sample of 762 participants, with items randomized and sampling weights applied to adjust for the demographics of the sample. An initial Exploratory Factor Analysis (EFA) was conducted on all eight items within each of the trait facets and factor solutions were compared using the Bayesian Information Criterion (BIC; Schwarz, 1978). When the criterion suggested that a one-factor solution fit the data best, items were retained for subsequent analysis. Conversely, if the BIC indicated that a less parsimonious factor solution fit the data best, items loading on the largest factor would be retained and the EFA would be re-ran to assess if a one-factor solution would be the best fit for the retained items. Confirmatory Factor Analysis (CFA) was then conducted to fit one-factor models to the items within each of the trait facets so the initial facet measures could be refined: to this end, items with standardized loadings on their trait facet of less the 0.5 were dropped, and a new CFA would be run with the retained items. The authors then arrived at each of the trait facets comprised of items that fit a one-factor model and whose items loaded highly on their trait facet. At the end of round one, a total of 65 items (22% of the original pool) were dropped as they either did not fit a single-factor model within the designated factor or had low loadings on their designated trait facet.

A second round of data collection with 366 participants employing an identical sample weight adjustment was conducted with additional items to refine the structure of the scales and to improve the measurement of trait facets which had not been reliably measured in the first round. These additional items were written by the authors and replaced those who had been previously dropped. A total of 316 items (231 original and 85 new ones) were assessed in this second wave. Similarly, an item-level EFA within each trait facet was ran, using the same methodology as in round one to drop items. Additionally, the authors proceeded to remove some items to avoid a disproportional number of items per each of the trait facets, allowing for a maximum of 10 items per trait facet and ensuring that the retained items represented the full range of items assigned to each trait facet on the item-level within-domain EFAs and also continued to reliably measure the restructured trait facet. At the end of this second round, the authors could confirm that all the originally suggested 37 trait facets were well-measured by their group of items, albeit the item-level EFAs suggested a more parsimonious set of 25 trait facets. Lastly, CFAs were conducted to fit one-factor models within each trait facet, assigning items to the trait facet in which they had loaded

most highly in previous EFA, removing any items with standardized loadings of less than 0.5, resulting in a set of 220 items to measure all of the 25 traits facets.

Therefore, this resulting scale, the Personality Inventory for the DSM-5 (PID-5), consists of a 220-item self-report questionnaire with a 4-point response scale, yielding the 25 primary scales (the personality trait facets), which can be combined to obtain the five higher order scales (the personality trait domains: Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism). The personality trait facets are as follows; within the Negative Affectivity trait domain: Emotional Lability, Anxiousness, Separation Insecurity, Submissiveness, Hostility, Perseveration, Depressivity, Suspiciousness, and Restricted Affectivity (lack of); the following are associated with Detachment: Withdrawal, Intimacy Avoidance, Anhedonia, Depressivity, Restricted Affectivity, and Suspiciousness; under Antagonism: Manipulativeness, Deceitfulness, Grandiosity, Attention Seeking, Callousness, and Hostility; for Disinhibition, the following trait facets can be found: Irresponsibility, Impulsivity, Distractibility, Risk Taking, and Rigid Perfectionism (lack of); as for the trait facets organized under the Psychoticism trait domain, those are: Unusual Beliefs and Experiences, Eccentricity, and Cognitive and Perceptual Dysregulation (APA, 2013; Krueger et al., 2011).

Krueger et al. (2011) also reported the preliminary psychometric evidence regarding the instrument in both a population-representative community sample and a treatment-seeking one. In this study, the results for a population-representative sample showed that the PID-5 trait domains and trait facets demonstrated strong internal consistency scores (Cronbach's alpha), with the following coefficient for the trait domains: Negative Affect, $\alpha = .93$; Detachment, $\alpha = .96$; Antagonism, $\alpha = .94$; Disinhibition, $\alpha = .84$; and Psychoticism, $\alpha = .96$. As for the coefficient alphas for the PID-5 trait facets, they ranged from .72 for Grandiosity to .96 for Eccentricity, with a median of .86. Additionally, this study also reported five factors emerging after factor analytical procedures. Aiming to extract the maximum number of interpretable dimensions within a potential range of 3 to 6 factors (suggested by substantive interpretability, minimum average partial [MAP] and parallel analysis criteria), the authors used an Exploratory Factor Analysis and produced five interpretable factors. The authors argued that an Exploratory Factor Analysis was preferable to a Confirmatory Factor Analysis at this stage, as a priori hypotheses of the scale structure

would be premature, but also noted that CFA models may not be realistic for personality data, as many personality variables yield meaningful factor cross-loadings.

Several other studies showed adequate internal consistency (Cronbach's alpha above .70) for most of PID-5 trait facets (Hopwood et al., 2011; Ashton, Lee, deVries, Hendrickse, & Born, 2012; Wright et al., 2012; Fossati et al., 2013; Quilty, Ayearst, Chmielewski, Pollock, & Bagby, 2013). In their review, Al-Dajani, Gralnick, and Bagby (2016) present a comprehensive assessment of the reliability estimates of the PID-5 across 25 studies, finding similarly adequate results for the PID-5 trait domains and trait facets (e.g., Ashton et al., 2012; Wright & Simms, 2014; Jopp & South, 2015).

In terms of test-retest reliability, Wright et al. (2015) conducted a study addressing the temporal consistency of the PID-5 in a clinical sample across an average of 1.44 years. Using Cohen's d to express the magnitude of change over this period of time, these authors' results showed a median d of -.12, representing little to no change (Cohen, 1988). Nevertheless, they found small changes in some trait facets, such as Submissiveness ($d = -.30$), Restricted Affectivity ($d = -.25$), Withdrawal ($d = -.21$), Irresponsibility ($d = -.22$), Rigid Perfectionism ($d = -.20$) and Risk Taking ($d = -.22$).

Similarly, a considerate number of studies have also supported the theoretical five-factor structure of the PID-5 traits (Hopwood et al., 2012; Wright et al., 2012; De Clercq et al., 2014; Van den Broeck et al., 2014; Zimmermann et al., 2014). In the study by Wright et al. (2012), the authors used EFA to assess if the factor structure of the PID-5 could be replicated in an independent sample, with results showing a 5-factor solution as the most clearly interpretable one. To assess the hierarchical structure of the PID-5 personality, Goldberg's (2006) method was employed: a series of factor models with an increasing number of factors were estimated and then examined for factor score correlations to estimate paths between the different levels of the hierarchy. An initial factor was firstly extracted and named Personality Pathology, containing all the facets. In this one-factor solution, all the 25 trait facets presented loadings greater than .40, with the exception of Submissiveness (.35), Attention-Seeking (.35), Grandiosity (.39), and Risk-Taking (.21), which suggested that a single factor encompasses overall "personality pathology" appropriately. At the second level of the hierarchy, two factors emerged, resembling Krueger, McGue and Iacono (2001) factors named Internalizing and Externalizing. At the third level, the Internalizing factor split into two different factors, labeled Detachment and Negative Affect, retaining the Externalizing factor. At

the fourth level, Negative Affect and Detachment were retained, while the Externalizing factor split into Disinhibition and Antagonism. The final and fifth level saw the Psychoticism factor emerge, yielding weak to moderate correlations with all the factors in the hierarchical fourth level.

Alongside with the 220-item PID-5, the American Psychiatric Association also published an abbreviated version, the Personality Inventory for the DSM-5 Brief Form (PID-5-BF). This brief version of the PID-5 also assesses the 5 Personality trait domains using 25 items selected from the 220 original ones. Anderson, Sellbom and Salekin (2016) conducted a study to evaluate the reliability, factor structure and construct validity of the PID-5-BF scale sores, finding support for the reliability and factor structure of the instrument, supporting its use in further research. Additionally, Fossati, Somma, Borroni, Markon, and Kruger (2015) examined the psychometric properties of the PID-5-BF in a sample of Italian adolescents, finding support for test-retest reliability, internal consistency and factor structure of this instrument, as well as associations with the Measure of Disordered Personality Functioning. That said, the study was conducted with adolescents, which limits the generalization of the findings to the adult population but can also be problematic as a diagnosis for Personality Disorder generally requires individuals to be 18 or over. Bach, Maples-Keller, Bo, and Simonsen (2016) assessed the psychometric properties of the PID-5-BF in large Danish community and psychiatric populations, finding an acceptable internal consistency, a five-factor structure, as well as support for the ability of this instrument to differentiate psychiatric from community participants. In this study, the correlational profiles of the brief PID-5 forms with clinician-rated Personality Disorder dimensions were almost identical with that of the full-length PID-5 (rICC = .95).

Although a substantial amount of research has investigated the validity and reliability of the full length PID-5 and, to a lesser extent, its brief version, two important issues remain. Firstly, the length of the 220 item PID-5 can hinder its use in research and clinical practice: filling out a lengthy measure can fatigue research participants, as well as discourage practitioners from using it on their patients fearing it might be burdensome. Secondly, the brief form of the PID-5 only assesses the broad personality trait domains of the model, not measuring the trait facets which can be informative for clinicians. To this effect, Maples et al. (2015) used item-response theory-based analyses to ascertain if a reduced set of 100 items (PID-5-SF) could also measure the 5

trait domains and the 25 trait facets. Their analyses showed that the correlational profiles of the original PID-5 and the reduced 100-item version were practically identical across different criteria. This abridged version of the PID-5 uses a smaller set of items (4) per scale and showed adequate internal consistency, with Cronbach's alpha coefficients ranging from .89 to .91 for the trait domains and from .74 to .88 for the trait facets (means of .90 and .83, respectively). The factor structure of the 100 item PID-5 was also very similar to its original form, with congruency coefficients ranging from .93 to .99. Furthermore, the authors assessed the criterion validity with the Five-Factor Model and interviewer-rated Section II and Section III scores, with nearly identical results for the full-length and 100-item PID-5 versions. These results suggested that the DSM-5 Personality Disorder traits can be validly and reliably measured using a reduced set of PID-5 items. Other studies have also found that the 100-item version of this measure showed similar psychometric properties to those of the PID-5 (Bach et al., 2016; Thimm, Jordan, & Bach, 2016b; Díaz-Batanero, Ramírez-López, Domínguez-Salas, Fernández-Calderón, & Lozano, 2019).

Markon, Quilty, Bagby, and Krueger (2013) also worked on the development of an informant-report form of the PID-5 (the PID-5-IRF), using data from an elevated-risk community sample and two nationally representative samples, investigating its item characteristics, superordinate factor structure, scale properties, and correlations with other measures. Their results suggested that the PID-5-IRF replicated the factor structure of the self-report version and was related with other measures (including the NEO-PI-R and the self-report PID-5), concluding that the PID-5-IRF could be a valuable measure for when further sources of information are needed, when response bias is a relevant concern, or when informant measures could provide incremental validity over self-report.

1.3.8 Associations with other personality assessment measures

The PID-5 has also been studied in association with other personality assessment measures. Studies have provided evidence towards adequate concurrent validity of the PID-5 with other measures and other models of personality (Hopwood et al. 2012; Quilty et al., 2013; Samuel, Hopwood, Krueger, Thomas, & Ruggero, 2013). In their study, Crego, Gore, Rojas, and Widiger (2015) argue that the trait model of the Section

III of DSM-5 reproduces the DSM-IV-TR Personality Disorder constructs, with effective methods for that result.

Research has also evidenced strong associations between the Five-Factor model dimensions and the PID-5 trait domains: Negative Affectivity with Neuroticism, (low) Detachment with Extraversion, (low) Antagonism with Agreeableness, and (low) Disinhibition with Conscientiousness (Gore, & Widiger, 2013; Wright, & Simms, 2014; Crego, Gore, Rojas, & Widiger, 2015). Findings on the associations between Psychoticism and Openness are mixed: De Fruyt et al. (2013), Thimm, Jordan and Bach (2016), and Thomas et al. (2016) all reported significant associations between Psychoticism and Openness, however various studies have either only found weak or near zero correlations between these two domains (e.g, Quilty et al., 2013; Watson, Stasik, Ro, & Clark, 2013; Zimmermann et al., 2014). Suzuki, Samuel, Pahlen, and Krueger (2015) used item response theory (IRT) to compare the PID-5 traits to those from the FFM inventory (The International Personality Item Pool NEO; IPIP-NEO) regarding the measurement precision along the latent dimensions. Their results evidenced that the DSM-5 model traits and the IPIP-NEO traits are complimentary measures of four out of five FFM domains (with the exception being Openness to Experience vs Psychoticism). Interestingly, the results also suggested that the PID-5 scales had higher thresholds and provided more information at the upper levels, whereas the IPIP-NEO performed better at lower levels, supporting the conceptualization that four trait domains of the DSM-5 dimensional model are maladaptive and extreme versions of the Five-Factor Model. The inconsistency of associations between the PID-5 Psychoticism and the FFM Openness have led authors to suggest that Openness has no meaningful implications for Personality Disorders and that the FFM may be inadequate to conceptualize and capture personality pathology (Saulsman & Page, 2004, O'Connor, 2005). However, research assessing these associations has mostly examined high scores on Openness, not considering the relationship between low scores on Openness and personality pathology, which has been associated with clinical aspects. For example, Taylor and Bagby (2012) point out that low Openness scores have been linked to alexithymia (a concatenation of cognitive traits such as difficulty identifying and describing feelings, externally oriented thinking, and limited imaginative capacity) which in turn is associated with some Personality Disorder diagnoses, such as Avoidant and Antisocial, as well as a poor clinical prognosis. Piedmont, Sherman, Sherman, Dy-Liacco and Williams (2009)

theorized experiential permeability as the maladaptive variant of Openness, both on the high and the low ends of this construct: on the higher end, individuals would be perceived as odd and eccentric, neglecting social norms of conduct and absorbed into their internal experiences; on the low end, individuals are conforming and rigid, lacking social tolerance and emotional depth. Overall, the inconsistency of associations between the PID-5 Psychoticism and the FFM Openness is particularly interesting and should prompt further research into investigating if information provided from the Openness domain may be not only clinically useful but important for the conceptualization of Personality Disorders.

Anderson et al. (2013) examined the links between the Minnesota Multiphasic Personality Inventory-2 Restructured Form (MMPI-2-RF), the Personality Psychology Five (PSY-5) scales and the DSM-5 trait domains and trait facets, as assessed by the PID-5, showing the existence of a clear pattern of convergence. The study indicated that each of the PSY-5 scales was most highly correlated with the conceptually expected PID-5 counterpart, with trait facet correlations depicting the same tendency. An exploratory factor analysis with both the PID-5 and the PSY-5 trait facet scales also ascertained a five-factor solution resembling the trait domains inherent to these scales. Moreover, this model also satisfactorily predicted DSM-IV Personality Disorders, as shown by Hopwood et al. (2012) in a study of a large sample of college undergraduates, where the PID-5 trait facet items explained a considerable proportion of variance in DSM-IV Personality Disorders assessed with the Personality Diagnostic Questionnaire (PDQ-4+; Hyler, 1994). In this study, hierarchical models with the DSM-5 retained Personality Disorders regressed on general personality pathology were conducted, with the overall variance explained in the models suggesting that DSM-5 Personality Disorders converge satisfactorily with the DSM-IV ones (namely, $R^2_{\text{Schizotypal}} = .59$, $R^2_{\text{Antisocial}} = .50$, $R^2_{\text{Borderline}} = .49$, $R^2_{\text{Narcissistic}} = .50$, $R^2_{\text{Avoidant}} = .43$, and $R^2_{\text{Obsessive-Compulsive}} = .37$). Few et al. (2013) also showed that clinician ratings of the PID-5 trait domains explained from 33% to 69% of all the DSM-IV Personality Disorder diagnoses.

Calvo et al. (2016) analyzed the utility of the dimensional model for a diagnosis of Borderline Personality Disorder in an outpatient clinical sample with a Spanish version of the PID-5, with results suggesting that the combination of the PID-5 trait domains and trait facets are useful to understand and diagnose this specific Personality Disorder. Fowler et al. (2018) also examined the relative clinical utility of the DSM-5 alternative model, as operationalized by the PID-5, in screening for Borderline

Personality Disorder in a sample of 1653 adult inpatients at a psychiatric hospital that completed the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II; First, Gibbon, Spitzer, & Williams, 2002), the SCID-II Questionnaire (SCID-II-PQ), the Big Five Inventory (BFI) and the PID-5. Their results showed that the PID-5 Borderline Personality Disorder algorithm (elevated Anxiousness, Separation Insecurity, Hostility, Emotional Lability, Depressivity, Risk Taking, and Impulsivity) presented moderate-to-excellent accuracy, as well as a good balance of sensitivity and specificity. These authors argued that their results support the use of the PID-5 Borderline Personality Disorder algorithm for screening purposes, strengthening the accuracy of the DSM-5 alternative model Criterion B trait collection for diagnosing this Personality Disorder.

There are also studies, albeit limited, addressing the PID-5 properties in non-English languages and countries, particularly in Dutch (De Fruyt et al., 2013), Italian (Fossati et al., 2013), Norwegian (Urnes et al., 2013; Thimm, Jordan, & Bach, 2017), German (Zimmermann et al., 2014), French (Roskam et al., 2015), Danish (Bo, Bach, Mortensen, & Simonsen, 2016), Spanish (Gutiérrez et al., 2017), Portuguese (Pires, Ferreira, & Guedes, 2017) and Arabic (Al-Attiyah, Megreya, Alrashidi, Dominguez-Lara, & Al-Sheerawi, 2017).

The development of the PID-5 represents not only the reconsideration of fundamental conceptualizations of personality pathology, but also a slow yet progressive shift towards a model that substantially differs from a purely categorical one and has a foundation on dimensional individual differences (Al-Dajani, Gralnick, & Bagby, 2016). Research highlighted in the section above aids to the reformation of existing frameworks and encourages ways for new paradigms to emerge and solidify. The evidence of the PID-5 validity is an important factor to a path of evidence-based improvements in the way personality pathology is understood and measured, but it also addresses several limitations of the categorical paradigm of the DSM-IV model. Also, it importantly represents the opportunity to further investigate the use of the alternative model in research and clinical settings, addressing some of its own limitations too. One of these limitations relates to the interpretation of scores: Krueger et al. (2012) suggested a scoring system that uses an average score, providing a clinician with a descriptive sentence, which is not greatly informative. For example, an average trait facet score of three indicates the trait facet is very true or often true to the individual

filling out the measure. To this effect, a comparison of individual scores based on normative population data might be more helpful and more informative, although research by Samuel, Hopwood, Krueger, Thomas, and Ruggero (2013) showed that differences between empirical cut points (T score greater than 65) and rational cut points (average score on trait facet scales) were very small, suggesting these two methods may be comparable. Another important limitation of the model is the lack of clarity of the DSM-5 on how to use the PID-5 to diagnose a Personality Disorder. While it is very clear which trait facets are required to diagnose different Personality Disorder types, establishing if an individual has a particularly elevated personality trait is not so clear. Empirically established cut-off scores might be needed to this effect. It is important to note, however, that these cut-off scores should be meaningful (i.e. would define real-world implications), and rigorous (e.g., reporting standard measurement error) in order to avoid arbitrary ones which, as described before in this Thesis, represented one of the main criticisms of the categorical approach of the DSM-IV.

1.4. The relational aspect of Personality

1.4.1 Personality functioning

The research agenda for the development of the DSM-5 mentions the need for empirical evidence regarding the role of relational problems in order to understand the etiology, diagnosis, and comorbidity of mental disorders (First et al., 2002). Laulik, Chou, Browne, and Allam (2013) also refer to an existing consensus amongst the research community pointing out the interaction between the individual and their environment as a factor that plays the most fundamental role in the development of Personality Disorders. These authors also claim that a high degree of social and psychological dysfunction has been consistently identified by previous research in families of individuals who develop Personality Disorder.

Alongside the development of personality, individuals also develop adaptive capacities, such as exerting control over impulses and emotions, respecting oneself and other individuals, and maintaining and developing intimate relationships. These adaptive capacities are the core of adaptive personality functioning and are developed from childhood into adulthood, being essential in the way individuals relate to themselves and to others. Conversely, some individuals may lack some, or all, of these

capacities, being perceived as exhibiting maladaptive personality functioning (Verheul et al., 2008). According to Livesley and Jang (2005), *personality problems* can be defined as the dysfunction of these adaptive capacities, and they form the core components of Personality Disorders. Furthermore, the construct of adaptive capacities implies that both normal and pathological personality functioning are dimensionally distributed, opposing more categorical models of Personality Disorders (Arnevik, Wilberg, Monsen, Andrea, & Karterud, 2009).

As mentioned before, the proposed classification for Personality Disorders in section III of the DSM-5 differentiates impaired personality functioning (criterion A) from the presence of maladaptive personality traits (criterion B). Criterion B offers an alternative trait approach with five higher order trait domains (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism) as operationalized by the PID-5, and criterion A specifies a number of problems common to all Personality Disorders, specifically impairments in self and interpersonal functioning (Bender, Morey, & Skodol, 2011; Morey et al., 2011; Wright, 2011). As addressed before, the manual mentions key elements such as Identity, Self-Direction, Empathy, and Intimacy. Moreover, reviewers of the proposed DSM-5 model have found the impairment and self and interpersonal functioning to be consistent with various theories of Personality Disorders, such as cognitive-behavioral, psychodynamic, interpersonal, attachment, social-cognitive, and developmental (Bender et al., 2011). For example, the social-cognitive approach addresses the intra-individual dynamics of personality (Mischel & Shoda, 1998; Hopwood, 2018), focusing more on how personality is expressed in terms of functions and causal structures and less on how it is described. Additionally, dimensional assessments of personality pathology founded on representations of self and interpersonal relations have particular clinical utility, namely in identifying the presence and the extent of said pathology, treatment planning, building therapeutic alliance, and assessing the course and outcomes of treatment.

However, opposing views exist, with some concerns about the complexity of the proposed model and indeed its clinical utility altogether. For example, Clarkin and Huprich (2011) argued that the representation of some clinically recognized Personality Disorders as prototypes and others as merely static trait frameworks is not clinically useful. Equally, it is important to investigate whether criterion A and criterion B provide distinct or overlapping information, as research has consistently shown that

measures of criterion A and criterion B are highly correlated (Huprich et al., 2018; Few et al., 2013; Roche, Jacobson, & Phillips, 2018). Zimmerman et al. (2015) have conducted a joint factor analysis of both criteria with results showing that some of criterion A's subdomains may load on trait domain factors (e.g., duration and depth of connections was linked with Detachment), and some of the criterion B trait facets may load on impairment factors (e.g., callousness was linked with impairments in interpersonal functioning). Further research into the associations of the DSM-5 criteria are needed, as an already complicated model that could lack parsimony may be burdensome and redundant for clinical use.

As mentioned earlier, for the evaluation of criterion A markers, the DSM-5 offers a Levels of Personality Functioning Scale (LPFSL; Morey et al., 2011), which was derived from two existing measures, the Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008) and the General Assessment of Personality Disorder (GAPD; Livesley, 2006). However, this scale does not allow for a distinction between problems of the self versus interpersonal ones, which can confound these areas and even hinder clinical work (Rossi, Debast, & van Alphen, 2016). Bastiaansen, De Fruyt, Rossi, Schotte, and Hofmans (2013) argued that despite coexisting at similar levels in many cases, self and interpersonal problems should be considered separately when formulating a Personality Disorder diagnosis. An individual with a Personality Disorder can particularly struggle with self-related problems but having fewer interpersonal issues, meaning this patient would require a distinct therapeutic approach than the one for an individual who, for example, would be mainly troubled by interpersonal aspects but exhibiting a more adequate self-system. Furthermore, factor analytical studies addressing measures of personality dysfunction suggest that adults vary reliably across time and within themselves on multiple indices of personality functioning, such as interpersonal behaviour and self-image. For example, Verheul et al. (2008) conducted a factor analysis on SIPP-118 data from 1195 Personality Disorder patients who had done psychotherapy, showing that the 16 facet scales fit well into five dimensions, which were named Self-Control, Identity Integration, Responsibility, Relational Functioning, and Social Concordance. Clark and Ro (2014) suggest that due to being a relatively new area of research, studies assessing personality functioning across multiple domains are still limited, therefore it is important to further investigate.

Morey et al. (2011) analyzed specific items from the two personality functioning measures, the Severity Indices of Personality Problems (SIPP–118; Verheul et al., 2008), and the General Assessment of Personality Disorder (GAPD; Livesley, 2006) in order to identify key markers that discriminated among different levels of personality pathology, i.e. diagnosis status, number of Personality Disorders diagnosed, and symptoms, as assessed by two semi-structured interviews. The results suggested a continuum of personality pathology, which was consistent with impairments in self and interpersonal functioning, adding to the empirical foundation of the proposed personality functioning rating in the DSM-5.

A study by Rossi, Debast and van Alphen (2016) also examined the measurement of DSM-5 criterion A and compared the convergent/divergent validity of criterion A and criterion B in older and younger age groups in 381 Dutch-speaking adults (171 older adults and 210 younger adults). This study looked at differences in validity between personality functioning, as assessed by the short version of the SIPP-118 (SIPP-SV) and pathological personality traits, measured by the PID-5 and the DAPPQ, across age groups. The authors concluded that the SIPP-SF domains Identity Integration, Relational Capacities, Responsibility, Self-Control, and Social Concordance were corroborated as higher order domains, but they also showed that in older adults, personality functioning was more strongly associated with Psychoticism, Disinhibition and Antagonism compared to younger participants. As for the associations found between the PID-5 and the SIPP-SF domains, most showed small to medium effect sizes, adding to the idea that maladaptive personality traits and levels of personality functioning each have unique variance whilst also being associated as expected.

Consequently, personality pathology can be seen as something fundamentally interpersonal at its core, complicating and irritating daily interpersonal situations and relationships (Hopwood et al., 2013). As argued by Krueger, Skodol, Livesley, Shrout, and Huang (2007, p. 69), the incapability to pursue fundamental tasks of adult life, such as 'close and meaningful intimate relationships' is intrinsic to the concept of Personality Disorder. A focus on interpersonal processes is essential to conceptualize and understand personality pathology (Pincus & Wright, 2011).

As with many other psychopathology entities, distinguishing normal from abnormal is a challenging task. Personality Disorders, by the nature of their concept,

present an even greater challenge. The word disorder suggests that an individual's personality has gone askew, awry or disordered, emphasizing the importance of conceptualizing the difference between individual differences (such as personality traits) and the ways in which personality mechanisms in a particular person fall short of achieving their intended functions. A solution to this problem can be attempted via a conceptualization of disorder as a statistical extreme, although that creates the question of what constitutes said extreme. Widiger et al. (2002), for example, argued that this extremity could be understood as the point along a personality continuum where the associated impairments become clinically significant.

The links between Personality Disorders and impairments in function will be explored in this Thesis, as it is important to examine how and at what level maladaptive personality traits impact individual's functioning, in an effort to support a transition that better articulates the concepts of personality and disorder in the future of clinical psychology.

1.4.2 Attachment

Attachment is one of the conceptual frameworks regarding close relationships. According to Bowlby (1969), human beings are born with an innate psychobiological system, which he defined as the attachment behavioral system, responsible for motivating them to pursue proximity to significant others (designated as attachment figures). This system, alongside with its regulatory functions of protection and distress relief, is present in individuals of all ages, albeit mostly observable during infancy (Bowlby, 1988).

Noftle and Shaver (2006) regard Adult Attachment Theory (Fraley & Shaver, 2000; Hazan & Shaver, 1987; Mikulincer & Shaver, 2003) as an extension of Bowlby and Ainsworth's Attachment Theory (Ainsworth & Bowlby, 1991; Bowlby, 1969), devised to describe and explain individual differences in behaviors, feelings and cognitions that happen within adolescent and adult close relationships. According to this theory, the attachment relationships between children and their primary caregivers, as well as previous experiences in close relationships, are responsible for individual differences in attachment style. Ainsworth, Blehar, Waters, and Wall (1978) identified

four different attachment classifications in children: secure attachment, anxious-ambivalent attachment, anxious-avoidant attachment, and disorganized attachment.

Consistent with Bowlby's original theory, research by Brennan, Clark, and Shaver (1998) proposed that two dimensions guide the attachment working models: attachment-related-anxiety and attachment-related-avoidance. Individuals with attachment anxiety view themselves 'worthy of having needs met by interpersonal relationship partners', hence an individual who scores high on the anxiety dimension has a negative view of the self and they are likely to exceedingly participate in proximity seeking conduct with their relationship partners. Attachment avoidance refers to how an individual perceives others as dependable when it comes to maintaining needs or providing them. Individuals who score highly on the avoidance dimension view others as undependable in interpersonal relationships, and they are likely to merely rely on the self when it comes to personal needs (Mack, Hackney, & Pyle, 2011).

Fraley, Brennan, and Waller (2000) developed the Revised Experiences in Close Relationships questionnaire (ECR-R), aiming for a more reliable and accurate measure of adult attachment. This questionnaire was based on the reanalysis of a comprehensive 323-item dataset, which was previously collected by Brennan, Clark, and Shaver (1998). The initial item clusters were submitted to factor analysis by Fraley et al. (2000), which found a circular pattern of loadings, leading to a distinct two-factor solution. The ECR-R was then devised to assess individual differences regarding attachment-related anxiety and attachment-related avoidance.

Much of the literature that explores the relationships between personality traits and attachment focuses on the Big Five model of personality (Costa & McCrae, 1992; Goldberg, 1993). As explored before, the PID-5 domains represent a maladaptive extension of the Five-Factor model, with PID-5 Negative Affectivity aligning with Neuroticism, PID-5 Detachment with (low) FFM Extraversion, PID-5 Antagonism with (low) FFM Agreeableness, PID-5 Disinhibition with (low) Conscientiousness, and PID-5 psychoticism with FFM Openness. Therefore, it is worth looking at the relationships between attachment style and the Big Five dimensions, so as to predict how the two dimensions of attachment should be related to the DSM-5 personality trait domains.

Shaver and Brennan (1992) were the first to report correlations between different attachment measures and different measures of the Big Five traits, which indicated some association or overlap between these constructs. The two attachment dimensions commonly assessed in social-personality research on attachment tend to correlate weakly to moderately with the Big Five personality traits. These authors found Attachment Security (low scores on both Attachment Anxiety and Attachment Avoidance) to correlate positively moderately with Extraversion and Agreeableness, weakly and positively with Consciousness, moderately and negatively with Neuroticism, and no significant correlations were found with Openness. They also found Attachment Anxiety to be moderately and positively correlated with Neuroticism, negatively and weakly correlated with Agreeableness, with no significant correlations with Extraversion, Openness and Consciousness. Lastly, they found Attachment Avoidance to be positively and moderately correlated with Neuroticism, negatively and moderately correlated with Extraversion and Agreeableness, with no significant correlations reported with Openness and Consciousness.

Noftle and Shaver (2006) report that Attachment Security is moderately and negatively correlated with Neuroticism and positively and moderately correlated with both Extraversion and Agreeableness, as well as modestly positively correlated with Conscientiousness, yet not correlated with Openness. As for Attachment Anxiety, these authors point out that studies have found it to be moderately to strongly correlated with Neuroticism, but not correlated with Openness. It has also been found to be modestly correlated with Extraversion, Agreeableness, and Conscientiousness in some studies, although just as frequently not significantly correlated with these dimensions. Regarding Attachment Avoidance, it has been modestly to moderately negatively correlated negatively with both Extraversion and Agreeableness, albeit not correlated with Openness (Noftle & Shaver, 2006). These authors also point out that some studies (Griffin & Bartholomew, 1994, Shaver et al., 1996, Carver, 1997) have found Attachment Avoidance to be positively correlated with Neuroticism and negatively with Conscientiousness. This would suggest that when examining the links between the PID-5 maladaptive personality and attachment, relationships between the conceptually opposite trait domains of personality and these attachment dimensions are to be expected. For example, moderate but positive correlations between Detachment

(maladaptive variant of Extraversion) and Antagonism (maladaptive variant of Agreeableness) with Attachment Avoidance are anticipated.

Timmerman and Emmelkamp (2006) explored the relationship between attachment styles and Cluster B Personality Disorders amongst prisoners, forensic inpatients and control groups from the general population. This study used the Relationship Questionnaire to assess attachment, operationalizing it in two axes (avoidance and dependence) and categorizing four attachment dimensions within the axes: secure (low dependency and low avoidance; defined as comfortable with intimacy and autonomy), preoccupied (high dependency and low avoidance, defined as preoccupied with relationships), dismissing (low dependency and high avoidance, defined as dismissing of intimacy, counter-dependent), and fearful (high dependency and high avoidance, defined as fearful of intimacy, socially avoidant). Results suggested that forensic inpatients and prisoners present a secure attachment style less frequently but present a fearful attachment style significantly more when compared to the normal control groups. Regarding personality pathology, almost all relationships between Cluster C pathology and attachment styles were significant, and Cluster A and Cluster C pathology were more strongly associated with attachment than Cluster B.

Although studies addressing links between Personality Disorders and attachment offer an insight into these relationships, the Cluster classification of Personality Disorders has been deemed problematic and not particularly helpful to conceptualize personality pathology, as discussed earlier in this chapter. Notwithstanding, a combination of research using the DSM-IV model and the Five-Factor Model is helpful to draw some hypotheses regarding associations of maladaptive personality with attachment.

1.4.3 Relationships

As explicated, the existing empirical data suggests that interpersonal disturbance is present in the context of Personality Disorder symptomatology. As pointed out by South, Turkheimer and Oltmanns (2008, p. 770) research has linked personality pathology with 'extreme forms of maladaptive intimate relationships.' The impact of Personality Disorder features on relational variables has been documented, albeit most

of these links regard particular Personality Disorders, as the most researched Personality Disorders are Borderline and Antisocial (Mulder, 2012).

According to Skodol (2018), studies have found that patients with Personality Disorders were more likely to be divorced, separated or never married, as well as more likely to have poorer quality of work and social functioning. However, assessment of functional impairment and systematic diagnosis of Personality Disorders were rare, participants were predominantly patients (rather than community dwellers), Personality Disorders were seldom compared to each other, and Borderline Personality Disorder was the disorder studied more often.

For example, it has been shown that adults with Borderline Personality Disorder (BPD) experience a higher number of breakups of important relationships (Labonte & Paris, 1993). Oltmanns, Melley and Turkheimer (2002) also studied self and peer reported Personality Disorder symptoms (including features of Paranoid, Schizoid, Schizotypal, Borderline and Avoidant Personality Disorders), controlling for current mental state, in a college student sample. Their results indicated that both self and peer reported symptoms were contributor predictors to the level of social functioning, including dating history.

Daley, Burge, and Hammen (2000) conducted a study with adolescent women to ascertain the links between romantic relationship dysfunction and symptoms of Borderline Personality Disorder, other Personality Disorders, as well as depression. These authors concluded that Borderline Personality Disorder symptoms predicted 4-year romantic dysfunction, including romantic chronic stress, reduced partner satisfaction, abuse, conflicts and unwanted pregnancy. However, these relationship dysfunction variables were also better predicted by a cumulative general Axis II symptomatology rather than BPD symptoms alone.

In another study with adolescents and young adults, Chen et al. (2004) used longitudinal data to examine the links between adolescent Personality Disorders and conflicts between romantic partners with ages ranging from 17 to 27, finding that participants with Personality Disorders presented more conflicts in their relationships in the 10-year follow-up period. Moreover, Paranoid, Schizoid, Schizotypal, Borderline, Narcissistic, and Obsessive-compulsive symptoms were also associated with continuous increases in conflict between partners. In their study with young dating

couples, Bahtia, Davila, Eubanks-Carter and Burckell (2013) also concluded that Borderline Personality Disorder features were linked to higher emotional loss and negative impact from both positive and negative experiences initiated by dating partners. It is important to note that the DSM-5 model requires an age of 18 to be assigned a diagnosis of Personality Disorder, whereas in the DSM-IV a diagnosis before this age was possible provided the disorder features had been present for at least a year. The DSM-5 conceptualization emphasizes the links between personality functioning deficits and personality traits, highlighting the impairment in performing basic tasks of life, which adolescents might have not faced yet, rendering a diagnosis of Personality Disorder inapplicable.

Additionally, in a study with newlywed couples, South (2014) examined the association of Personality Disorder symptomatology with three aspects of daily functioning, namely quality of interactions, overall relationship sentiment, and serious conflicts with one's spouse, showing that Personality Disorder symptoms significantly predicted aspects of these three measures; with Paranoid, Schizoid, Obsessive-compulsive, and Avoidant Personality Disorder scores being more significantly and negatively associated with overall relationship sentiment.

It is also important to examine the relationships between the Five-Factor Model and relationship variables as these inform the hypotheses for this Thesis. By conceptualizing the PID-5 trait domains as maladaptive variants of the Five-Factor Model, hypotheses of links between the former and aspects explored in the Thesis can be drawn (e.g., several aspects of Neuroticism are akin to the PID-5 Negative Affectivity, so we can expect relationships between the latter and the variables associated with Neuroticism in the literature). Furthermore, the nature of these associations (direction and magnitude) provides evidence that personality traits have an impact on a continuum, evidencing the impact of the ends of the domain spectrum. Research with the FFM has also suggested that personality traits are associated with marital stability, relationship satisfaction and mate selection (Donnellan, Conger & Bryant, 2004). Results show that Neuroticism seems to be especially problematic to relationships (Claxton, O'Rourke, Smith, & De Long, 2011), with some studies associating a higher likelihood of divorce in spouses scoring higher on the Neuroticism domain. These studies also show that Neuroticism is associated with relational dissatisfaction (Karney & Bradbury, 1995; Shiota & Levenson, 2007). A meta-analysis

conducted by Heller, Watson and Ilies (2004) also revealed that Neuroticism is the personality trait most strongly associated with marital dissatisfaction, and Shaver and Brennan (1992) also report that Neuroticism is associated with shorter relationships. A study by Karney and Bradbury (1995) also reported that Openness was negatively related to marital satisfaction and stability. Research has also shown that high levels of Agreeableness and Conscientiousness predict relationship satisfaction, partly because these domains are associated with high interpersonal trust and low impulsivity, respectively (Dyrenforth, Kashy, Donnellan, & Lucas, 2010). Overall, the research addressing personality and relationships has shown that personality predicts relationship quality, sexual behavior, and satisfaction, with high Neuroticism being particularly problematic in this context. Conversely, Conscientiousness (opposed to PID-5 Disinhibition) and Agreeableness (opposed to PID-5 Antagonism) are decidedly positive qualities. Extroversion (opposed to PID-5 Detachment) has ambivalent qualities, with both positive and negative consequences for relationships, whereas Openness appears to play a minor role.

Holden, Roof, McCabe, and Ziegler-Hill (2015) addressed the associations between pathological personality, as assessed by the PID-5, and mate retention behaviors in two samples (a community sample and an undergraduate sample). Mate retention behaviors can be understood as the strategies used by individuals to maintain their relationships by reducing the likelihood of infidelity or defection by their romantic partners, and are usually classified in two higher-order domains: benefit-provisioning behaviors and cost-inflicting behaviors. The study by Holden et al. (2015) showed that Negative Affectivity, Detachment and Antagonism were associated with mate retention behaviors. Particularly, participants who exhibit these pathological features were more likely to inflict costs to their partner, as well as less likely to provide benefits.

Although Personality Disorders have been associated with deficits in relating to other people, with research presenting consistent negative links between categorical Personality Disorder symptoms and relationship satisfaction, the literature examining these associations using a dimensional model for personality pathology is still very limited. Recently, Decuyper, Gistelinck, Vergauwe, Pancorbo, and DeFruyit (2018) conducted the first study examining the associations between PID-5 traits and relationship functioning in intimate couples, showing that Detachment and Negative Affectivity are the trait domains with the most consistent negative associations with

relationship satisfaction and adjustment. Couples presenting higher self- and partner ratings of Detachment and Negative Affectivity reported less relationship satisfaction and adjustment. These authors also found less consistent associations for Disinhibition and Psychoticism, and Antagonism was found to be unrelated to romantic functioning.

1.4.4 Relationship breakdown

Research has addressed the associations of adaptive and, to a lesser extent, maladaptive personality and experiences in close relationships, suggesting that extreme variants of personality are manifested in averse and problematic behaviors that impact interpersonal interactions and romantic relationships, with detrimental effects on its quality over a period of time (Dowgwillo, Ménard, Krueger, & Pincus, 2016; Williams, & Simms, 2016; Chmielewski, Ruggero, Kotov, Liu, & Krueger, 2017). One of the more drastic consequences of relationship breakdown is homelessness. Authors such as Jones, Shier and Graham (2012) argue that relationship breakdown is a leading cause of homelessness. Equally, Ganim, Hunter and Karnik (2012) list family breakdown and disruptive family relationships as the most common factor that leads young people to leave home. Bower, Conroy and Perz (2017) also stress that homeless individuals are prone to loneliness and social isolation and often have experienced high rates of relationship breakdown which leads them into homelessness.

Additionally, the links between homelessness and personality pathology are well documented in the literature. For example, Ball et al. (2005) concluded that Cluster A Personality Disorders were present in 88% of their sample with Paranoid Personality Disorder being the most common, followed by Schizotypal and Schizoid. Salavera, Tricás and Lucha (2011) also found that Antisocial, Compulsive, Dependent, and Schizoid Personality Disorders were the most prevalent in the sample they examined, with only 36% of individuals not presenting a Personality Disorder. However, it is important to note that these studies used categorical conceptualizations of Personality Disorders, which, as discussed previously in this chapter often lead to high co-morbidity rates and often misdiagnoses. The use of the DSM-5 dimensional approach could be advantageous, as it conceptualizes personality pathology as fundamentally interpersonal: assessing which trait domains are particularly elevated within homeless samples would offer insight into the level of interpersonal impairments experienced by

these individuals as these are likely to share variance. Furthermore, using the dimensional model with a range of different samples could also contribute to a better understanding of how well the model captures maladaptive personality and whether expected different levels of severity are well measured by its instrument.

1.5. Aims and research questions

The issues discussed above constitute the root of this Thesis. The proposed classification for Personality Disorders in the DSM-5 establishes a differentiation between personality functioning (criterion A) from the presence of maladaptive personality traits (criterion B). While criterion B regards the alternative trait approach with the five higher order trait domains (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism), operationalized by the PID-5, criterion A concerns problems that are common to all Personality Disorders, specifically impairments in self and interpersonal functioning (Bender, Morey, & Skodol, 2011; Morey et al., 2011; Wright, 2011). This alternative conceptualization of Personality Disorders in the DSM-5, and the consequent development of its inherent measure (PID-5), has created research opportunities to examine the associations between maladaptive personality and other relational variables paramount to experiences in close relationships. Although some of these links have been established (e.g., maladaptive personality and attachment), very few studies have analyzed these associations in light of the new dimensional model or using the PID-5 to assess personality.

With the emergence of a dimensional conceptualization of personality pathology intertwined with deficits in self and interpersonal relations, various models and measures were developed over the years, and some research has established links between personality pathology and personality functioning variables (e.g., Berghuis, Kamphuis, & Verheul, 2014). However, the literature examining the associations between the PID-5 traits and personality functioning is still very limited, which opens an opportunity to further examine and clarify these relationships. Similarly, research on personality and relationship variables, such as intimacy and satisfaction, has either focused on specific Personality Disorders (e.g., Mulder, 2012; Chen et al., 2004; Bahtia et al., 2013) or made use of the Five-Factor Model to assess personality (e.g., White, Hendrick, and Hendrick, 2004; Malouff et al., 2010). Considering the emergence of the

alternative model for maladaptive personality and the lack of research on relationships that assesses maladaptive personality in light of this dimensional approach, it is important to also investigate these links.

The following program of research explores the links between personality pathology and interpersonal features of relationships, namely personality functioning, attachment and romantic relationship intimacy and satisfaction, considering the described dimensional model. It is hoped that the work presented in this Thesis can clarify the relationships between maladaptive personality and experiences in close relationships, and strengthen the conceptualization that personality pathology is fundamentally interpersonal, as it is proposed in section III of the DSM-5. By establishing links between these variables, the work presented in this Thesis can also contribute to the research using the PID-5 as a way to measure maladaptive personality. Additionally, by ascertaining associations between personality pathology and interpersonal aspects, the research presented in this Thesis can also contribute to the development of therapeutic approaches that not only take into account the severity of personality pathology, but also the impact it has on a patient's close relationships and support networks, allowing for interventions that could focus on helping them establish and maintain meaningful close relationships, as well as the development of adaptive capacities.

Therefore, the overall goal of this Thesis is to examine maladaptive personality traits and domains alongside personality functioning, attachment, relationship variables and the occurrence of maladaptive personality in a sample of homeless individuals. To achieve this goal, the following broad aims will be proposed:

1. To examine relationships between maladaptive personality and personality functioning;

2. To explore the links between maladaptive personality and attachment;

3. To investigate the links between maladaptive traits and relationship intimacy and satisfaction;

4. To examine the maladaptive personality traits among different samples.

The following program of research will start with an attempt to confirm the

factorial structure of the 100-item version of the PID-5. As discussed previously, criticism has been expressed regarding how burdensome the long version of the PID-5 can be, so the first study will address the reliability and factor structure of a less onerous version of this measure. Secondly, it will attempt to verify the negative associations between maladaptive personality and personality functioning. The premise of the dimensional model rests on the interpersonal aspect of personality pathology, so it is pertinent to confirm previous findings using a shorter version of the PID-5 (*i*) and extending analysis (*ii*) from previous research, adding to the still limited body of knowledge exploring these associations. The study described in Chapter 2 aims to answer the following questions:

(i)   Is maladaptive personality negatively associated with personality functioning?

(ii)   Can maladaptive personality explain the variance of personality functioning?

Secondly, Chapter Three will address the links between personality and attachment, specifically in terms of maladaptive personality measured by the PID-5, as a start-off point to assess the impact of maladaptive personality in how individuals relate to each other and establish meaningful relationships. Associations between attachment and personality are established in the literature, albeit with personality domains being mostly measured using the Five-Factor Model. In this chapter, associations between maladaptive personality and attachment will be examined (*i*, *ii*), exploring the moderation effect of gender, and results will be compared to those found in previous research with the FFM (*iii*). Chapter Three examines these issues, aiming to answer the following research questions:

(i)   Are attachment domains associated with maladaptive personality in two samples (one of undergraduate students, the other being a community sample)?

(ii)   Can maladaptive personality explain the variance of attachment domains?

(iii)   Do these results align with the literature using the FFM?

Chapter Four describes a study that sought to examine the associations between maladaptive personality and intimacy and satisfaction in a relationship. Although there are some links between relationship variables and maladaptive personality, they focus mostly on certain types of Personality Disorders assessed with a categorical model, or make use of the FFM to measure adaptive personality. In this study we will aim to examine the associations between maladaptive personality and relationship variables (*i*), how can maladaptive personality explain these (*ii*), and also explore the mediation effects of criterion A (intimacy) in the relationship between Criterion B (maladaptive personality traits) and satisfaction (*iii*). Specifically, this chapter aimed to answer the following questions:

(i) Is maladaptive personality negatively associated with satisfaction and intimacy in a romantic relationship?

(ii) Does maladaptive personality explain the variance of satisfaction and intimacy in a romantic relationship?

(iii) Is the relationship between maladaptive personality and satisfaction mediated by intimacy?

Lastly, the fifth Chapter addresses a particular sample of homeless individuals and compares it to a sample from the general population, as well as two empirical samples (community and clinical). A higher prevalence of Personality Disorders within homeless people is well established in the literature, as well as evidence that relationship breakdown plays an important role in the pathway to homelessness. This Thesis aimed to look at maladaptive personality traits among different samples and examine how the dimensional model encompasses these traits, but also aimed to explore the links between experiences in close relationships and personality. A sample of homeless individuals would allow us to address this relationship by conducting the first study using the PID-5 to measure maladaptive personality traits in this particular sample. Furthermore, it is pertinent to examine personality pathology in a sample of homeless individuals, as they can be perceived as an extreme case of the breakdown of meaningful and close relationships, whose associations with maladaptive personality have been explored in the previous chapters. In light of these, we aimed to compare a sample of homeless individuals to other samples (*i*), inspect the associations of

homelessness status with maladaptive personality (*ii*), and inspect how maladaptive personality presents in these individuals using a person-centered statistical approach (*iii*). Specifically, this study aimed to answer the following questions:

(i)   Are maladaptive personality traits scores higher in homeless individuals compared to other samples?

(ii)   Is maladaptive personality associated with the likelihood of being homeless?

(iii) Is there a difference in the heterogeneity of the severity of maladaptive personality between homeless individuals and community-dwellers?

Chapter Two

Maladaptive personality and personality functioning

2.1 Overview

The study outlined in this chapter sought to inspect the factor structure of the 100 item PID-5 (PID-5-SF) and to investigate the links between personality functioning and personality pathology using this version of the measure, by examining the associations between the DSM-5 personality trait domains and trait facets, and five domains of personality functioning (Self-Control, Identity Integration, Relational Capacities, Responsibility and Social Concordance), as assessed by SIPP-SV, in a sample of 503 participants. Results suggested that a five-factor structure for the PID-5-SF did not fit the data well, with model fit criteria falling below conventional thresholds. Results also showed that Personality Functioning and maladaptive personality are indeed negatively associated, with maladaptive personality being a negative predictor of Personality Functioning, replicating and extending the findings of previous research.

2.2 Introduction

2.2.1 Personality functioning

The development of human personality involves the development of adaptive capacities, such as maintaining and developing intimate relationships, but also exerting control over emotions and impulses, or respecting oneself and other individuals. These capacities are developed from childhood into adulthood, however, when individuals lack certain, or all, of these capacities, they are perceived as showing maladaptive personality functioning (Verheul et al., 2008). The dysfunction of these adaptive capacities, referred to as *personality problems*, forms the core component of Personality Disorders (Livesley & Jang, 2005). The construct of adaptive capacities is based on the premise that both normal and pathological personality functioning is dimensionally distributed, which contrasts with more categorical models for Personality Disorders (Arnevik, Wilberg, Monsen, Andrea, & Karterud, 2009).

The proposed classification for Personality Disorders in section III of the DSM-5 conceptually differentiates impaired personality functioning (criterion A) from the occurrence of maladaptive personality traits (criterion B). Thus while criterion B offers an alternative trait approach with five higher order trait domains (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism) as operationalized by the PID-5, criterion A specifies a number of problems common to all Personality Disorders, specifically impairments in self and interpersonal functioning (Bender, Morey, & Skodol, 2011; Morey et al., 2011; Wright, 2011).

APA (2013) addresses key elements such as Identity (experience of oneself as unique; defined boundaries between self and others; capacity for, and ability to regulate, a range of emotional experiences; stability of self-esteem and accuracy of self-appraisal), Self-Direction (pursuit of meaningful and coherent short and long-term goals; utilization of prosocial and constructive internal standards of behavior; capacity to productively self-reflect), Empathy (appreciation and comprehension of others' motivations and experiences; tolerance of differing perspectives; understanding of the effects of one's behavior on others), and Intimacy (duration and depth of positive connection with others; capacity and desire for closeness; and mutuality of regard reflected in interpersonal behavior). The incapacity to pursue fundamental tasks in adult life, for example meaningful and close intimate relationships, is central to the conceptualization of Personality Disorder (Krueger et al., 2007). This conceptualization of personality pathology in terms of the lack of adaptive capacities, and thus maladaptive personality functioning, has opened research areas in order to further clarify this relationship (Verheul et al., 2008).

2.2.2 Research on personality functioning and maladaptive personality

In light of a dimensional understanding of personality, numerous models were developed over the last years, under the assumption that personality pathology, as well as the severity of this pathology, can be comprehended via maladaptive behavior associated with self and in interpersonal relations (Berghuis, Kamphuis, & Verheul, 2014). Alongside with the models, several instruments were also developed, such as the Dimensional Assessment of Personality Pathology – Basic Questionnaire (DAPP-BQ; van Kampen, 2002), the General Assessment of Personality Disorders (GAPD;

Berghuis, Kamphuis, Verheul, Larstone, & Livesley, 2013) and the Severity Indices of Personality Problems (SIPP-118; Verheul, Andrea, Berghout, Dolan, Busschbach, van der Kroft, Bateman, & Fonagy, 2008).

The Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008) is a questionnaire that measures the severity of the generic and changeable components of Personality Disorders. It is based on the assumption that personality is a changeable entity, being sensitive to variations in personality functioning, as changeable components of personality are considered adaptive capacities. They relate to the dynamic organization of personality regarding self and relationships regulation, which include aspects such as impulse regulation, representations of self and others, affect, coping strategies, identity, as well as acquired skills. The SIPP-118 then focuses on adaptive capacities, assuming an inverse relation between the severity of personality pathology and the level of an individual's adaptation, a premise that relies on the notion that personality pathology can be conceptualized as a deficiency in the development of adaptive capacities which would allow individuals to cope with life challenges and developmental tasks. Notwithstanding, this instrument also relies on the assumption that specific personality traits are different than a general level of adaptation, as it measures common aspects of personality pathology, which go beyond specific categories or types of Personality Disorders per se. Lastly, the SIPP-118 also considers a dimensional approach to personality pathology, in which an adaptation-maladaptation continuum is somewhat independent of particular personality functioning styles, therefore personality pathology is conceptualized as being comprised of types of personality pathology and changeable components, which are continuous with adaptive personality functioning (Verheul et al. 2008). Perceiving these adaptive capacities as dimensional phenomena means that more severe personality pathology is associated with less adaptive capacities, therefore associated with more severe personality problems (Lien & Arnevik, 2016).

The scale was developed by selecting 118 items from a pool of 265, guaranteeing 16 clinically interpretable and internally consistent facets (Verheul et al., 2008). These facets were then clustered into five higher order domains, interpreted as 1) Self-control (including emotional regulation and effortful control); 2) Identity Integration (including self-respect, stable self-image, self-reflexive functioning, enjoyment, and purposefulness); 3) Relational Capacities (including intimacy, enduring relationships,

and feeling recognized); 4) Responsibility (including trustworthiness and responsible industry); and 5) Social Concordance (including aggression regulation, frustration tolerance, respect, and cooperation). In the development of the scale, the authors found intercorrelations between the factors ranging from .27 to .60. Findings regarding concurrent validity indicated that 12 out of 16 facet scores were the lowest in a sample of individuals with Personality Disorders, intermediate scores were found in a psychiatric outpatient sample, and the highest scores were found in a community sample (Verheul et al., 2008).

In their study, Feenstra, Hutsebaut, Verheul and Busschbach (2011) compared the SIPP-118 scores of a patient and a non-patient sample of adolescents, as well as adolescents with Personality Disorders and those without, also exploring the relationship between SIPP-118 scores and other clinical instruments, such as the Symptom Checklist-90-Revised; (SCL-90-R; Derogatis, 1975) and the Dimensional Assessment of Personality Pathology – Basic Personality; (DAPP–BQ; Livesley & Jackson, 2002). Their results showed strong negative associations between the SIPP-118 scores and the DAPP-BQ dimension scores, specifically Self-Control correlating most strongly with Affect Lability, Identity Integration with Identity Problems, Relational Capacities with Interpersonal Disesteem, and Responsibility correlating most with Passive Oppositionality. They also found that the domain scores of the SIPP-118 were negatively correlated with the global score of psychiatric symptomatic distress.

Berghuis et al. (2014) examined the associations of general personality dysfunction and specific personality traits in relation to the presence and severity of Personality Disorders in a clinical sample, using the Revised NEO Personality Inventory (NEO PI–R; Costa & McCrae, 1992), the Dimensional Assessment of Personality Pathology-Basic Questionnaire (DAPP–BQ; Livesley & Jackson, 2009), the General Assessment of Personality Disorder (GAPD; Livesley, 2006) and the Severity Indices of Personality Problems (SIPP-118). The results showed that all measures predicted the presence and severity of DSM-IV personality pathology, in particular the GAPD and SIPP-18, which predicted most specific personality dimensional scores over and above the DAPP-BQ and the NEO-PI-R. Their study also found correlations between NEO-PI-R factors (Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness) and the SIPP-118 domains, in particular Self-

Control was positively correlated with Conscientiousness ($r = .56$), Agreeableness ($r = .43$), Extraversion ($r = .24$) and negatively correlated with Neuroticism (($r = -.72$); Relational Capacities was positively correlated with Extraversion ($r = .59$), Conscientiousness ($r = .41$), Agreeableness ($r = .33$), Openness ($r = .19$), and negatively correlated with Neuroticism ($r = -.60$); Identity Integration was positively correlated with Conscientiousness ($r = .56$), Extraversion ($r = .48$), Agreeableness ($r = .27$), and negatively correlated with Neuroticism ($r = -.76$); Responsibility was positively correlated with Conscientiousness ($r = .78$), Agreeableness ($r = .45$), Extraversion ($r = .15$) and negatively correlated with Neuroticism ($r = -.48$); lastly, Social Concordance was positively correlated with Agreeableness ($r = .58$), Conscientiousness, ($r = .36$), Extraversion ($r = .32$), and negatively correlated with Neuroticism ($r = -.58$).

A study by Rossi, Debast and van Alphen (2016) examined 381 Dutch speaking adults (171 older adults and 210 younger adults) to address the measurement of DSM-5 criterion A and compare the convergent/divergent validity of criterion A and criterion B in older and younger age groups. Specifically, this study looked at validity differences between personality functioning, as assessed by the SIPP-SV (Short SIPP-118) and pathological traits, as assessed by the PID-5 and the DAPPQ across age groups. The results showed that the SIPP-SV domains Identity Integration, Relational Capacities, Responsibility, Self-Control, and Social Concordance were corroborated as higher order domains, but also that in older adults, personality functioning was more strongly associated with Psychoticism, Disinhibition and Antagonism compared to younger participants. The correlations found between the PID-5 and the SIPP-SV domains mostly showed small to medium effect sizes, which confirmed that both levels of personality functioning and maladaptive personality traits each have unique variance, whilst also being associated as expected. Specifically, Negative Affectivity was the domain more associated with personality functioning in both age groups, with large correlations present with Self-Control and Identity Integration. These particularly large correlations underline the fact that it may be difficult to disentangle Personality Functioning and maladaptive personality in some instances.

To the best of our knowledge, there is currently only one study examining the relationship between the alternative model of personality for the DSM-5 and the personality functioning domains measured by the SIPP (Rossi et al., 2016). This study

has used the 220-item version of the PID-5, which has been criticized for being a lengthy and onerous instrument, potentially causing fatigue on research participants and service users (van Alphen et al., 2015). With these limitations in mind, Maples et al. (2015) developed a shorter, 100-item version of the PID-5 (PID-5-SF) to measure the 5 domains and the 25 trait facets, concluding that the two measures are practically identical across different criteria. In the development of the abridged measure, analyses by Maples et al. (2015) showed that the PID-5-SF yielded adequate internal consistency, with Cronbach's alpha coefficients ranging from .89 to .91 for the domains and from .74 to .88 for the trait facets. The factor structure of the 100-item PID-5 was also very similar to its original form, with congruency coefficients ranging from .93 to .99. Other studies (Bach et al., 2016; Thimm, Jordan, & Bach, 2016b; Díaz-Batanero et al., 2019) have also found that this shorter version showed similar psychometric properties to those of the 220-item PID-5, including a five-factor structure, suggesting that the PID-5-SF could be an adequate and less burdensome alternative to the original version. That said, evidence of the psychometric properties of this measure is still limited, highlighting the need to further inspect it.

2.2.3 Conclusion

As the dimensional model proposes an alternative assessment and classification of personality that is also characterized by significant impairments in self- and interpersonal functioning, it is pertinent to further examine the relationships between the personality traits and domains of the DSM-5 model and personality functioning across different samples. Furthermore, as psychological science has faced criticism for a potential lack of reproducibility in its studies, it is also pertinent to aim for the replication of findings using the alternative model as its use in conceptualizing and diagnosing Personality Disorders in future editions of the DSM is argued by experts in the field. Overall, the study described in this chapter aims to replicate the findings of Rossi et al. (2016) using a shorter and more practical measure, expanding on the examination of the linear relationships between Personality Functioning and maladaptive Personality.

2.3 Aims and hypotheses

The following study looked at the links between the five DSM-5 personality domains and twenty-five trait facets as measured by the PID-5-SF, and five domains of personality functioning as measured by the SIPP-SV, namely Self-Control, Identity Integration, Relational Capacities, Responsibility and Social Concordance. Based on the research just presented, we expected to verify the negative associations between maladaptive personality and personality functioning.

The first aim of the study was to inspect the factor structure of the PID-5-SF, a developed measure which has not been used to the same extent as the full version of the PID-5, expecting to find a five-factor structure. One of the most highlighted criticisms of the dimensional model relates to the onerous and unpractical qualities of the full 220 item version of the PID-5, hence we will aim to inspect the factorial structure of the 100-item version in an attempt to offer evidence that this less burdensome version measures maladaptive personality adequately and reliably.

The second aim of the study was to answer our research questions: firstly, by verifying the findings of Rossi et al. (2016) using this short version of the PID-5 (PID-5-SF). Secondly, by expanding their correlational findings with the inclusion of regression analyses to allow us to further understand the extent of joint and unique associations of multiple predictors and how much variance they account for. In sum, in this study we expected to confirm the factor structure of the PID-5-SF, replicate the findings of Rossi et al. (2016) using a short version of the PID-5 (*i*), as well expand on this findings by including regression analyses in our study (*ii*). Specifically, the following were expected:

(i) Negative correlations between maladaptive personality traits facets and domains, and personality functioning domains, particularly Negative Affectivity with Self-Control and Identity Integration;

(ii) Maladaptive personality domains negatively predicting personality functioning, particularly Negative Affectivity explaining a moderate to large amount of variance of Self-Control and Identity Integration.

2.4 Method

2.4.1 Participants

A sample of 503 participants took part of this study. A total of 213 participants participated voluntarily online, and a total of 290 participants were undergraduate students at Goldsmiths, University of London, taking part in this study via an online platform in exchange for course credits. All the participants gave informed consent and were debriefed after the completion of the instruments. Ages ranged from 18 to 61 years old ($M = 25.96$, $SD = 9.02$), 66.4% (334) of the participants identified as female, 33.2% (167) as male and 0.4% (2) as other. The Department of Psychology Ethics Committee at Goldsmiths provided ethical approval for the study.

2.4.2 Measures

Personality Inventory for the DSM-5 (PID-5-SF)

For this study, the 100-item version of the Personality Inventory for the DSM-5 (PID-5; Krueger, Derringer, Markon, Watson, & Skodol, 2012), developed by Maples, Carter, Crego, Core et al. (2015), was employed, assessing the same 25 personality trait facets (e.g., Anhedonia, Emotional Lability, Hostility, etc.), organized within 5 broader trait domains (Negative Affect, Detachment, Antagonism, Disinhibition and Psychoticism). Maples et al. (2015) used item-response theory-based analyses to establish a reduced set of 100 items that could also measure the 5 trait domains and the 25 trait facets, showing that the correlational profiles of the original PID-5 and the reduced 100-item version were practically identical across different criteria. The Cronbach alpha values for this measure were as following: Negative Affectivity, $α = .87$; Detachment, $α = .90$; Antagonism, $α = .91$; Disinhibition, $α = .86$; and Psychoticism, $α = .85$.

The Severity Indices of Personality Problems – Short Version (SIPP-SV)

The Severity Indices of Personality Problems – Short Version (SIPP-SV; Verheul, Andrea, Berghout, Dolan, Busschbach, van der Kroft, Bateman, & Fonagy, 2008; Appendix B) is a 60-item questionnaire that measures the severity of the generic and changeable components of Personality Disorders, encompassing 5 domains (Self-

control, Identity Integration, Responsibility, Relational Capacities, and Social Concordance). The participants are asked to answer on a 4-points scale to what extent they agree with the presented statement, with the four response categories being: 1 = fully disagree, 2 = partly disagree, 3 = partly agree, 4 = fully agree. The Cronbach's alpha values for this scale were as follows: Self-control, $\alpha = .90$; Identity Integration, $\alpha = .92$; Responsibility, $\alpha = .89$; Relational Capacities, $\alpha = .85$; and Social Concordance, $\alpha = .84$.

2.4.3 Procedure

Data from the 213 participant sample were collected online, where participants volunteered to complete the questionnaires on an online platform. No compensation was offered in return for participation and participants were given debrief information upon completing the questionnaires.

The undergraduate participants ($N = 290$) were asked to complete the questionnaires in groups in a classroom environment in exchange for course credits. They were also given a debrief information sheet with contacts for relevant organizations in case participants felt upset by the nature of any questions. Participants also had the opportunity to ask questions about the study and their participation, via email or personally at the time of data collection.

2.4.4 Statistical analysis

A confirmatory factor analysis (CFA) was used to test the 5-factor structure of the 100-item PID-5 (PID-5-SF) in this sample. The model was fit using the *lavaan* package version 0.6-5 (Rosseel, 2012) in statistical programming language and environment R version 3.6.1 (R Core Team, 2019). Maximum likelihood estimation with Full Information Maximum Likelihood (FIML) was used for missing data. Latent factors were standardized allowing for free estimation of all factor loadings.

Goodness of fit of the PID-5-SF factor solution was evaluated with the Root Mean Square Error of Approximation (RMSEA), recognized as one of the most informative and useful criteria for CFA, as it includes a built-in correction for model complexity and is therefore adjusted for parsimony. Cut-offs for the interpretation of values RMSEA as suggested by Lai & Green (2016) were the following: (a) values of

.05 (Browne & Cudeck, 1992) or .06 (Hu & Bentler, 1999) suggest "good" fit; (b) values between .05 and .10 suggest "less than acceptable" fit (Browne & Cudeck, 1992; MacCallum, Browne, and Sugawara, 1996); and (c) values larger than .10 suggest "bad" fit (Browne & Cudeck, 1992). Confidence intervals for the RSMEA were also calculated to provide more information regarding model fit than a point estimate alone.

Standardized Root Mean Square Residual (SRMS) was also calculated, albeit recognized as a positively biased measure (with a bias greater for small sample sizes and for low degrees of freedom), with no penalty for model complexity. A value less than .08 is generally considered a good fit (Hu & Bentler, 1999). Comparative Fit Index (CFI) was also calculated, as it is one of the fit indices least effected by sample size, with values closer to 1 indicating good fit (Hu and Bentler, 1999). Lastly, if the factor loading was at least $|.32|$, items were considered to significantly load on a factor (Tabachnick & Fidell, 2013).

Correlations between the PID-5-SF and SIPP-SV domains were calculated and interpreted according to Cohen's r effect sizes (Cohen, 2009; .10 small, .30 medium and .50 large). Type I error rate was adjusted using a Bonferroni correction, with the conventional $\alpha = .05$ being divided by the number of tests.

Additionally, a series of multiple regressions was conducted to predict the five personality trait domains from the five SIPP-SV domains of personality functioning, with the predictors entered simultaneously. Percent contributions were calculated to inspect the percentage of variance explained for each predictor, alongside with Relative Importance, a method of averaging sequential sums of squares over all orderings of regressors, which is deemed more appropriate for observational data with correlated predictors (Lindeman, Merenda, & Gold, 1980). Metrics were normalized to sum to 100%. Analyses were conducted in R version 3.6.1, using the *lm()* function for linear regression modeling, the *relaimpo* package (Grömping, 2006) for Relative Importance analyses, and regression outputs were produced using the package *stargazer* (Marek, 2018).

2.5 Results

2.5.1 Descriptive statistics

The table 2.1 below shows the descriptive statistics (means and standard deviations) for the PID-5 and SIPP-SV domains. Significant differences in the scores the PID-5 trait domains Antagonism and Disinhibition were found, with males scoring higher. Significant differences were also found in the scores of the SIPP-SV domain Responsibility, with females scoring significantly higher.

Table 2.1 – *Means, standard deviations and Cronbach's alphas for the PID-5 trait domains and SIPP-SV domains*

	Total		Males		Females				
	M	*SD*	*M*	*SD*	*M*	*SD*	*t*	*p*	*α*
Neg. Affect	1.29	.44	1.25	.47	1.31	.42	-1.33	.181	.87
Detachment	.88	.53	.90	.59	.87	.49	.461	.645	.90
Antagonism	.80	.53	.91	.59	.74	.48	3.28	**.001**	.91
Disinhibition	1.17	.38	1.25	.41	1.13	.35	3.25	**.001**	.86
Psychoticism	.88	.58	0.91	.66	.86	.52	.84	.399	.85
Self-Control	3.05	.64	3.06	.70	3.05	.60	.12	.902	.90
I. Integration	3.02	.70	3.04	.72	3.01	.68	.48	.629	.92
Responsibility	3.01	.62	2.86	.67	3.09	.58	-3.99	**< .001**	.89
R. Capacities	2.89	.59	2.86	.62	2.90	.57	-.69	.490	.85
S. Concordance	3.20	.51	3.11	.55	3.24	.48	-2.67	.008	.84

N = 503; significant t-tests in bold at Bonferroni-corrected *α* = .005

2.5.2 Confirmatory factor analysis

The model fit was not excellent, with a Comparative Fit Index (CFI) of .79, a Standardized Root Mean Square Residual (SRMR) of .09 and a Root Mean Square Error of Approximation (RMSEA) of .10, 90% CI [.098, .108]. However, the full five factor model fit the data significantly better than a single-factor solution, $\chi^2(10) = 697.78$, $p < .001$. As expected, all the indicators except Restricted Affectivity and Rigid Perfectionism (which are reversed coded and interpreted as lack of Restricted Affectivity and lack of Rigid Perfectionism) all yielded significant positive factor loadings, with acceptable values above |.32| with the exception of Restricted Affectivity. These are displayed on Table 2.2 and mapped on Figure A. Factor 1

represents Negative Affect, Factor 2 represents Detachment, Factor 3 represents Antagonism, Factor 4 represents Disinhibition, and Factor 5 represents Psychoticism.

Table 2.2 – *Factor loadings*

Latent Factor	Indicator	B	SE	Wald statistic	β
Factor 1	Anxiousness	0.504	0.035	14.541	0.629
Factor 1	Emotional Lability	0.545	0.032	17.054	0.702
Factor 1	Hostility	0.453	0.029	15.437	0.647
Factor 1	Perseveration	0.494	0.025	19.575	0.77
Factor 1	Restricted Affectivity	-0.256	0.031	-8.324	-0.388
Factor 1	Separation Insecurity	0.471	0.033	14.408	0.613
Factor 1	Submissiveness	0.364	0.029	12.52	0.546
Factor 2	Anhedonia	0.644	0.028	23.278	0.861
Factor 2	Depressivity	0.671	0.028	23.746	0.873
Factor 2	Intimacy Avoidance	0.319	0.03	10.81	0.479
Factor 2	Suspiciousness	0.400	0.025	15.75	0.659
Factor 2	Withdrawal	0.412	0.028	14.758	0.62
Factor 3	Attention Seeking	0.441	0.029	14.993	0.635
Factor 3	Callousness	0.482	0.027	17.689	0.717
Factor 3	Deceitfulness	0.509	0.023	21.952	0.833
Factor 3	Grandiosity	0.500	0.028	17.916	0.725
Factor 3	Manipulativeness	0.551	0.027	20.588	0.798
Factor 4	Distractibility	0.389	0.035	11.254	0.504
Factor 4	Impulsivity	0.427	0.029	14.717	0.635
Factor 4	Irresponsibility	0.450	0.025	18.272	0.735
Factor 4	Rigid Perfectionism	-0.334	0.029	-11.436	-0.503
Factor 4	Risk Taking	0.463	0.03	15.385	0.658
Factor 5	Eccentricity	0.379	0.036	10.382	0.476
Factor 5	Perceptual Dysregulation	0.550	0.024	22.65	0.865
Factor 5	U. B. and Experiences	0.591	0.029	20.066	0.794

Note: B = coefficient; SE = standard error; β = standardized coefficient; all loadings are significant at $p < .001$
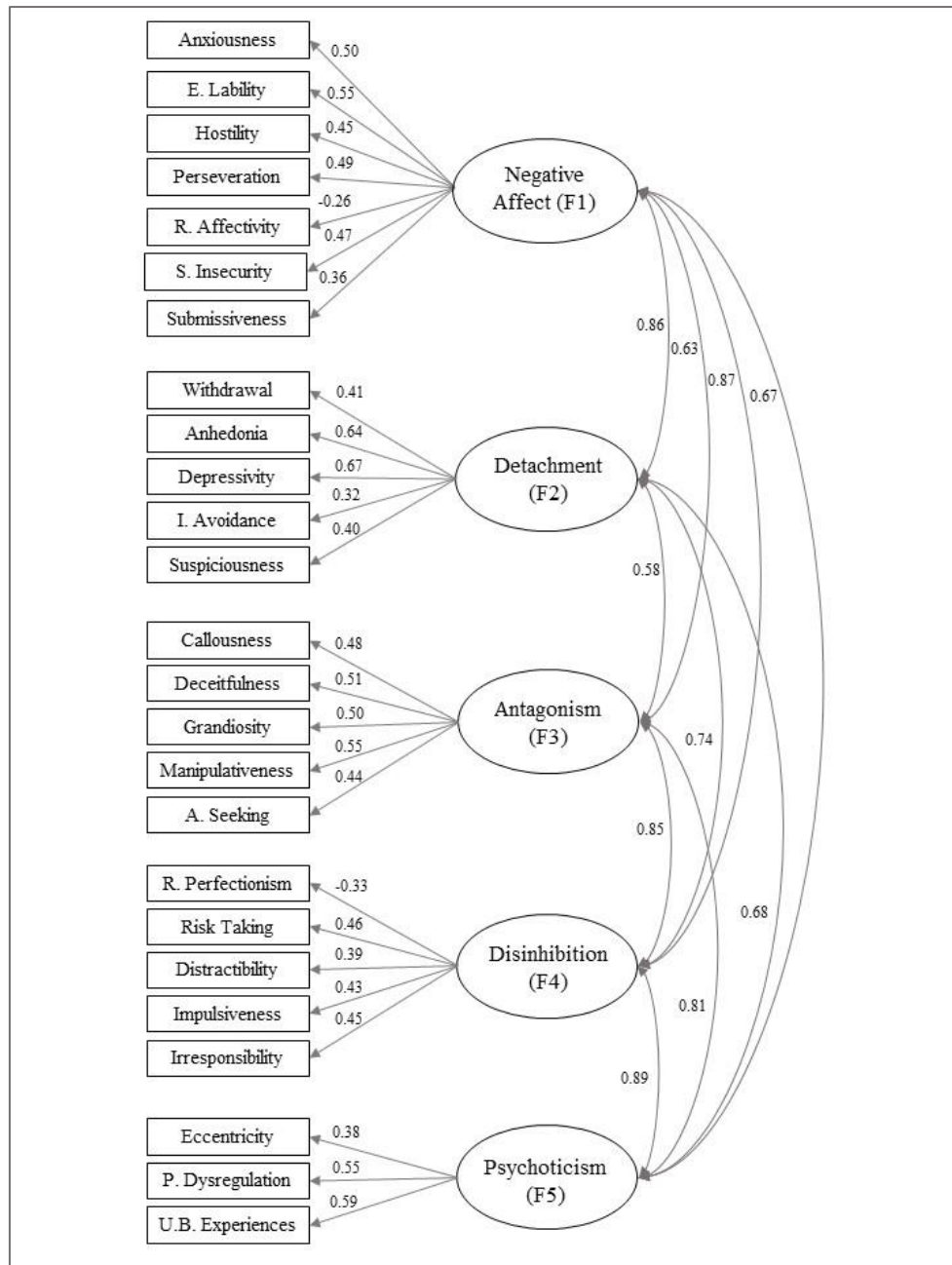
Figure A – Five-factor model of the 100-item PID-5

2.5.3 Correlations

Zero-order correlations between the PID-5 trait domains (Negative Affectivity, Detachment, Antagonism, Disinhibition and Psychoticism) and the SIPP-SV domains (Self-Control, Identity Integration, Responsibility, Relational Capacities, and Social Concordance) were run. Table 2.3 below shows these correlations, all negative and significant, ranging from -.19 (Antagonism and Identity Integration) to -.63 (Negative

Affectivity and Self-Control). All maladaptive personality domains are negatively associated with Personality Functioning domains.

Table 2.3 – *Zero-order correlations between the PID-5 trait domains and the SIPP-SV domains*

	Self-Control	Identity Integration	Responsibility	Relational Capacities	Social Concordance
Neg. Affect	-.63	-.52	-.47	-.35	-.48
Detachment	-.53	-.61	-.52	-.61	-.54
Antagonism	-.40	-.19	-.41	-.22	-.53
Disinhibition	-.53	-.33	-.62	-.28	-.42
Psychoticism	-.53	-.40	-.47	-.41	-.51

Note: All correlations significant at p < .001

Similarly, zero-order correlations between the 25 PID-5 trait facets, trait domains and the SIPP-SV domains were run. Table 2.4 (below) depicts these correlations, which were predominantly significant (at a corrected $\alpha = .001$) and negative. Some expected exceptions occurred, namely positive weak to moderate correlations between (lack of) Restricted Affectivity and the SIPP-SV domains, as well as between (lack of) Rigid Perfectionism and the SIPP-SV domains. The correlations between Attention Seeking and Identity Integration, as well as between Attention Seeking and Relational Capacities were non-significant.

Table 2.4 – *Zero-order correlations between the PID-5 trait facets and the SIPP-SV domains*

	Self-Control	Identity Integration	Responsibility	Relational Capacities	Social Concordance
Anxiousness	**-.38**	**-.49**	**-.34**	**-.36**	**-.31**
Emo. Lability	**-.60**	**-.50**	**-.41**	**-.38**	**-.46**
Hostility	**-.60**	**-.41**	**-.43**	**-.31**	**-.55**
Perseveration	**-.53**	**-.43**	**-.55**	**-.36**	**-.46**
Rest. Affectivity	.09	**.17**	**.31**	**.36**	**.24**
Sep. Insecurity	**-.41**	**-.28**	**-.33**	**-.21**	**-.33**
Submissiveness	**-.23**	**-.24**	**-.27**	**-.20**	**-.21**
Anhedonia	**-.47**	**-.66**	**-.48**	**-.51**	**-.48**
Depressivity	**-.47**	**-.65**	**-.46**	**-.47**	**-.46**
Int. Avoidance	**-.28**	**-.31**	**-.32**	**-.42**	**-.26**
Suspiciousness	**-.50**	**-.36**	**-.45**	**-.41**	**-.52**
Withdrawal	**-.33**	**-.46**	**-.32**	**-.51**	**-.39**
Att. Seeking	**-.31**	-.08	**-.31**	-.07	**-.35**
Callousness	**-.35**	**-.22**	**-.31**	**-.24**	**-.42**
Deceitfulness	**-.37**	**-.24**	**-.45**	**-.25**	**-.48**
Grandiosity	**-.29**	**-.11**	**-.26**	**-.16**	**-.42**
Manipulativeness	**-.30**	**-.14**	**-.32**	**-.20**	**-.41**
Distractibility	**-.43**	**-.45**	**-.54**	**-.35**	**-.34**
Impulsivity	**-.47**	**-.19**	**-.42**	**-.20**	**-.32**
Irresponsibility	**-.47**	**-.30**	**-.56**	**-.31**	**-.45**
Rig. Perfectionism	**.30**	**.28**	**.22**	**.27**	**.30**
Risk Taking	**-.39**	**-.15**	**-.37**	**-.17**	**-.34**
Eccentricity	**-.42**	**-.35**	**-.41**	**-.41**	**-.41**
Per. Dysregulation	**-.44**	**-.33**	**-.36**	**-.31**	**-.46**
U. B. Experiences	**-.41**	**-.29**	**-.34**	**-.28**	**-.35**

Note: Correlations significant at p < .001 in bold

2.5.4 Regressions for PID-5 predicting SIPP-SV domains

A series of multiple regressions were run to predict the SIPP-SV domains from the PID-5 trait domains. The first regression was run to predict the domain of Self-control from Negative Affect, Detachment, Antagonism, Disinhibition and Psychoticism. The assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality of residuals were met for all the regression analyses. Results are summarized in Table 2.5 (below)

Table 2.5 – *Summary of multiple regression analyses for the SIPP-SV domains*

	Self-Control β (SE)	Identity Integration β (SE)	Responsibility β (SE)	Relational Capacities β (SE)	Social Concordance β (SE)
Constant	**4.387**** (0.076)	**3.963**** (0.081)	**4.274**** (0.077)	**3.422**** (0.076)	**3.957**** (0.064)
Neg. Affect	**-0.532**** (0.060)	**-0.328**** (0.063)	-0.114 (0.060)	0.047 (0.059)	**-0.187**** (0.050)
Detachment	**-0.168**** (0.057)	**-0.840**** (0.060)	**-0.347**** (0.057)	**-0.722**** (0.056)	**-0.256**** (0.048)
Antagonism	0.0002 (0.056)	**0.329**** (0.060)	-0.067 (0.057)	**0.212**** (0.056)	**-0.314**** (0.047)
Disinhibition	**-0.279**** (0.072)	0.037 (0.076)	**-0.669**** (0.073)	0.006 (0.072)	0.001 (0.061)
Psychoticism	**-0.200**** (0.058)	-0.103 (0.061)	-0.109 (0.058)	**-0.173**** (0.057)	-0.061 (0.049)
Observations	441	440	440	441	441
R^2	0.515	0.537	0.481	0.427	0.455
Adjusted R^2	0.510	0.532	0.475	0.430	0.449
Residual Std. Error	0.454 (df = 435)	0.483 (df = 434)	0.459 (df = 434)	0.453 (df = 435)	0.385 (df = 435)
F Statistic	**92.518**** (df = 5; 435)	**100.732**** (df = 5; 434)	**80.433**** (df = 5; 434)	**67.514**** (df = 5; 435)	**72.734**** (df = 5; 435)

Note: β = Std coefficient; SE = Std Error; *$p < .05$; **$p < .01$

The maladaptive personality trait domains significantly predicted Self-control, adj. $R^2 = .51$ $F(5, 435) = 92.52$, $p < .001$. Negative Affect, Detachment, Disinhibition and Psychoticism were significant negative predictors of Self-control, $p < .01$. The PID-5 trait domains also significantly predicted Identity Integration, explaining approximately 53% of the variance, adj. $R^2 = .53$, $F(5, 434) = 100.73$, $p < .001$. Negative Affect, Detachment were significant negative predictors of Identity Integration, $p < .01$, and Antagonism was a significant positive predictor, $p < .01$. Equally, the PID-5 domains significantly predicted Responsibility, adj. $R^2 = .47$, $F(5, 434) = 80.43$, $p < .01$. Detachment and Disinhibition were significant negative predictors of Responsibility, $p < .01$. Relational Capacities was significantly predicted by maladaptive personality domains, adj. $R^2 = .43$, $F(5, 435) = 67.51$, $p < .01$. Detachment, and Psychoticism were significant negative predictors of Relational Capacities, whereas Antagonism was a positive predictor, $p < .01$. Lastly, a multiple regression was run to predict the domain of Social Concordance from Negative Affect, Detachment, Antagonism, Disinhibition and Psychoticism. These variables significantly predicted the Social Concordance domain, explaining approximately 45% of the variance, adj. $R^2 = .45$, $F(5, 438) = 72.73$, $p < .01$. Negative Affectivity,

Detachment and Antagonism were significant negative predictors of Social Concordance, $p < .01$.

Table 2.6 (below) displays the Percent Contributions and Relative Importance percentages for each of the predictors of each SIPP-SV domains. When predicting Self-Control, Negative Affect had the highest relative importance (36.2%) explaining the variance of this domain. The other significant predictors in the model had similar relative importance percentages, ranging from 17.9% (Disinhibition) to 18.7% (Detachment and Psychoticism). When predicting Identity Integration, Detachment had the highest relative importance (57.5%) explaining the variance, followed by Negative Affectivity with 21.6%. When predicting Responsibility, Disinhibition had the highest relative importance (37.7%) explaining the variance, followed by Detachment with 24.5%. When predicting Relational Capacities Detachment had the highest relative importance (65.2%) explaining the variance of this domain, followed by Psychoticism with 17.2%. Antagonism, the significant positive predictor in the model, contributed 5.1%. Lastly, when predicting Social Concordance, Antagonism had the highest relative importance (29.0%) explaining the variance, followed by Detachment with 27.2%.

Table 2.6 – *Relative Importance, sum of squares and percentage contribution of the predictors of the SIPP-SV domains*

Self-Control	Relative Importance (%)	Sum of Squares	% Contribution
Negative Affect	36.20%	75.26	40.68%
Detachment	18.70%	10.1	5.46%
Antagonism	8.40%	2.49	1.35%
Disinhibition	17.90%	5.01	2.71%
Psychoticism	18.70%	2.48	1.34%

Identity Integration	Relative Importance (%)	Sum of Squares	% Contribution
Negative Affect	21.60%	59.19	27.10%
Detachment	57.50%	50.01	22.90%
Antagonism	5.10%	7.5	3.40%
Disinhibition	4.30%	0	0.00%
Psychoticism	11.50%	0.66	0.30%

Responsibility	Relative Importance (%)	Sum of Squares	% Contribution
Negative Affect	13.90%	39.65	22.50%
Detachment	24.50%	21.52	12.20%
Antagonism	10.80%	4.7	2.60%
Disinhibition	37.70%	18.8	10.70%
Psychoticism	12.90%	0.02	0.01%

Relational Capacities	Relative Importance (%)	Sum of Squares	% Contribution
Negative Affect	8.00%	18.61	11.70%
Detachment	65.20%	47.16	29.70%
Antagonism	5.10%	1.55	0.90%
Disinhibition	4.30%	0.09	0.06%
Psychoticism	17.20%	1.85	1.20%

Social Concordance	Relative Importance (%)	Sum of Squares	% Contribution
Negative Affect	16.60%	21.17	22.90%
Detachment	27.20%	15.9	13.40%
Antagonism	29.00%	10.5	8.90%
Disinhibition	9.00%	0.01	0.01%
Psychoticism	18.20%	0.23	0.19%

2.6 Discussion

Consistent with findings in the PID-5-SF development study (Maples et al., 2015), scores from the PID-5-SF demonstrate strong internal consistency, supporting

the use of a shorter version of the PID-5. The number of items is a significant part of the coefficient alpha calculation, yet the PID-5-SF has comparable reliability to the PID-5 despite the substantial decrease in this number (from 220 to 100).

The model fit for the factor structure of the PID-5-SF fell short of meeting the acceptable criteria, not replicating the findings of Maples et al. (2015) and Bach et al. (2015). Although goodness of fit was not excellent, it is important to note that whilst fit indices can be a helpful guide, results should also be examined regarding the theory behind. Furthermore, the use of rules of thumb for fit indices is a highly debated topic, with experts arguing for their complete abandonment and others recommending their usefulness yet warning that a strict adherence to recommended cut-off values can lead to instances of Type I error in which an incorrect rejection of an acceptable model occurs (Marsh et al., 2004). Previous studies using CFA with personality inventories (e.g., Hopwood & Donnellan, 2010) also did not meet the suggested cut-off criteria in their analysis of personality data, and some authors suggest that the complexity of personality data may play a role in the misfit. Furthermore, it can be argued that simple structure confirmatory factor analysis (CFA), despite its advantages, can be less adequate than exploratory factor analytical approaches for this type of data. The latter have been used in the past for the PID-5-SF (e.g., Bach et al., 2015) in lieu of CFA as some authors (see Hopwood & Donnellan, 2010) suggest that personality traits often yield meaningful factor cross-loadings. In our confirmatory model, loadings were all above the recommended value of |0.32| for all traits, with the exception of Restricted Affectivity, which loaded negatively on the Negative Affectivity factor as expected, albeit with a loading below -0.32, indicating that a 5 factor structure akin to the one found with PID-5 data could be adequate.

These findings highlight the need for further investigation into the factor structure of this shortened measure. Equally, it is important to note this shortcoming when interpreting the results from this study, as the model fit did not meet the acceptable criteria and we cannot confirm adequate psychometric properties for this measure when it comes to factorial structure. Thus, the results from this study should be interpreted with caution. However, the high internal consistency found suggest that the PID-5-SF could be an appropriate less burdensome alternative to the 220-item PID-5, adding to the evidence that this shorter version of the PID-5 can reliably assess maladaptive personality with a less onerous questionnaire. This is particularly relevant in the usage of the instrument in clinical settings, as fatigue due to extensive interviews or tests in

mental health settings has also been evidenced (van Alphen et al., 2015) and has been one of the concerns expressed by critical voices of the alternative model for Personality Disorders.

The results from this study also suggest a negative relationship between the Personality Functioning domains some aspects of maladaptive personality, which aligns with the fact that the SIPP-SV focuses on adaptive capacities, assuming an inverse relation between the severity of personality pathology and the level of an individual's adaptation (Lien & Arnevik, 2016). In particular, all correlations between the Personality Functioning domains and the PID-5 trait domains were negative and particularly strong between Negative Affectivity and Self-Control, Detachment and Identity Integration, Disinhibition and Responsibility, Detachment and Relational Capacities, and between Social Concordance and Detachment and Antagonism. These results match those of Rossi et al. (2016), which also showed significant correlations between the SIPP-SV domains and maladaptive personality. Their study also found Negative Affectivity to be particularly strongly associated with Self-Control and Identity Integration, but their results also yielded similar associations to the ones found in this study in regard to Detachment and Identity Integration, Disinhibition and Responsibility, Detachment and Relational Capacities, and Social Concordance and Antagonism.

As the PID-5 trait domains can be understood as the maladaptive variants of the FFM, the results from this study also align with those described by Berghuis et al. (2014), in which positive significant correlations were found between the SIPP-118 domains and the Five-Factor Model domains assessed by the NEO-PI-R. In fact, Berghuis et al. (2014) found Self-Control to be mostly negatively associated with Neuroticism (which conceptually encompasses many features of the PID-5 Negative Affectivity); Identity Integration to be mostly correlated with Extraversion (the opposite of Detachment); Responsibility to be mostly correlated with Conscientiousness (the opposite of Disinhibition); Relational Capacities to be mostly correlated with Extraversion (the opposite of Detachment); and Social Concordance to be mostly correlated with Agreeableness (the opposite of Antagonism). The results from our study point out in the same direction, as significant negative correlations were found between the Personality Functioning domains and the corresponding opposite

maladaptive personality trait domains, underlining the fact that the DSM-5 model for personality pathology can be understood as an extension of the FFM.

From a conceptual perspective, aspects of Disinhibition, such as orientation toward immediate gratification, impulsive behavior, were strongly and negatively associated with Responsibility, which pertains to setting goals and achieving said goals but also includes aspects such as trustworthiness and responsible industry. Aspects of Detachment, which relate to the avoidance of socio-emotional experience, including both withdrawal from interpersonal interactions and restricted affective experience and expression, were mostly negatively associated with an individual's Relational Capacities, a factor linked with the capability to communicate with others, take care of them, and the ability to understand these contacts in a long-term setting. Antagonism, a domain that refers to behaviors that put one at odds with other people, but also a callous antipathy toward others, was mostly negatively associated with Social Concordance, a factor that regards one's ability to value someone's identity, work together with other people and suppress aggressive impulses towards others. Negative Affectivity, a domain that refers to experiences of high levels of a vast range of negative emotions, such as anxiety and depression, was mostly negatively associated with Self-Control, a factor that refers to one's capacity to use, tolerate and control one's impulses and emotions. Psychoticism, which relates to the exhibition of odd, culturally incongruent, unusual or eccentric behaviors and cognitions, was also mostly negatively associated with Self-Control.

Results also showed a negative relationship between the vast majority of maladaptive trait facets and personality functioning domains, suggesting again that personality pathology and adaptive personality functioning features are indeed inversely related. These relationships reinforce the rationale that personality pathology can be conceptualized in terms of the lack of adaptive capacities, supporting the idea that the dysfunction of adaptive capacities forms the core components of Personality Disorders, in which severe personality pathology is associated with less adaptive capacities (Lien & Arnevik, 2016). Importantly, these correlations found between the PID-5 and the SIPP-SF align with those found by Rossi et al. (2016) and also showed small to medium effect sizes, confirming that both levels of maladaptive personality traits and personality functioning are associated as expected whilst each have unique variance. However, it is important to note that personality pathology and personality

functioning may also be difficult to disentangle empirically, as a few of the trait facets yielded high correlations with personality functioning domains (e.g., Emotional Lability or Hostility with Self-Control, with an effect size of -.60).

The results from the regression analyses also showed that maladaptive personality can significantly and negatively predict Personality Functioning. Specifically, Negative Affectivity, Detachment, Disinhibition and Psychoticism were significant negative predictors of Self-control, with Negative Affectivity being the strongest predictor contributing the most to the explained variance (36.2%). Negative Affectivity and Detachment were significant negative predictors of Identity Integration, with Detachment being the strongest predictor (57.5%). In this model Antagonism was also found to be a positive predictor of Identity Integration, albeit contributed 5.1% to the variance of this domain. Negative Affectivity, Detachment and Disinhibition were significant negative predictors of Responsibility, with Disinhibition being the strongest predictor and contributing 37.7% to the explained variance. Detachment and Psychoticism were significant negative predictors of the Relational Capacities domain, with Detachment being the strongest predictor, while Antagonism emerged as a positive predictor of this domain (contributing about 5.1% to the explained variance). Lastly, Negative Affectivity, Detachment and Antagonism were significant negative predictors of Social Concordance, with Antagonism being the strongest predictor.

Based on the findings of Rossi et al. (2016) we expected Negative Affectivity to explain a moderate to large amount of variance of Self-Control and Identity Integration. These findings were verified, as Negative Affectivity contributed 36.2% to the variance of Self-Control, and 21.6% to the variance of Identity Integration, but the strongest predictor of this personality functioning domain was in fact Detachment (contributing 57.5%). Further research may be needed to clarify how Detachment impacts Identity Integration, but particular aspects of this maladaptive domain (such as withdrawal from meaningful relationships) could potentially play a role. Conversely, Antagonism was found to positively predict Identity Integration and Relational Capacities, which is an unexpected finding as it does not align with previous research. One potential explanation for this relates to how self-report tools, such as the ones employed in this study, may be better suited to measure internalizing problems (which often cause subjective distress) than externalizing problems (such as Grandiosity, for example, a

trait facet belonging to the Antagonism domain), which are potentially better measured by informant reports (see Rossi et al., 2014). Equally, trait facets such as Grandiosity, may also mean that individuals overestimate their relationships and social functioning.

This study evidenced that not only there are negative associations between maladaptive personality and adaptive capacities, but also that maladaptive personality can successfully negatively predict them. The dimensions of the SIPP-SV (with the exception of Responsibility) relate to the criterion A domains of self- and interpersonal functioning. The correlational patterns found in our study replicated the results by Rossi et al. (2016), who also argue that the SIPP-SV is a potential measure of impairment of personality functioning (criterion A). This is a useful finding for clinical practice, as the SIPP-SV can be used as a screening tool for the presence of potential personality pathology. Treatment decisions can be made by assessing domains of personality functioning with the SIPP-SV, which can also be used as an outcome measure for the effects of these treatments in regards to the levels of personality functioning of an individual. By using a short instrument, such as the SIPP-SV, as a screening tool for personality functioning, it creates an opportunity to develop a step-wise diagnostic approach for the DSM-5 alternative model, an approach which would address the criticism of the burdensome aspect of extensive tests and interviews to evaluate interpersonal and intrapersonal functioning alongside the five maladaptive traits and their facets amongst often vulnerable populations in mental health settings. If this approach is employed, a second phase with a more detailed evaluation could be undertaken when there is an indication of impaired personality functioning; in this instance, a shorter version of the PID-5 would be employed to measure the five personality trait domains and their associated facets.

Overall, these results reinforce the conceptualization of personality pathology as being fundamentally interpersonal, in a way that the core features of personality pathology are related to impairments in 'self' and 'interpersonal' functioning (Skodol, 2012), in how individuals relate to others and depict an adaptive functioning (Hopwood et al., 2013). It also provides evidence in support of an integrative approach to the assessment and conceptualization of Personality Disorders (Hopwood et al., 2011). Small or medium effect sizes in the correlational analyses underline that there is unique variance of maladaptive personality and personality functioning, supporting a view that

both are related and capture aspects of personality pathology, but can also be defined separately. Furthermore, clinical efforts in the treatment and management of Personality Disorders could also focus on an integrative multidimensional approach (Paris, 1999) for this psychopathology, in particular by assessing and strengthening adaptive capacities in a therapeutic context. In light of the findings described in this chapter, which have replicated previous research, the SIPP-SV emerges as a promising instrument for assessing the criterion A of the DSM-5.

This study represented the first step of this Thesis in the exploration of how maladaptive personality is related to adaptive functioning and, importantly, how individuals relate to others. In the next chapter of this Thesis, these links will be further explored by inspecting how maladaptive personality is related to specific relationship patterns as conceptualized by attachment styles.

2.7 Limitations and future directions

These findings should be considered in light of some limitations. The sample was composed of adults who volunteered to participate, therefore representing a convenient study group, introducing a potential bias due to under-representation of sub-groups in the sample. All the participants were also nonclinical volunteers, which limits the generalization of these findings to clinical populations. Clinical samples are also needed to explore which domains of personality functioning encompass general personality pathology related to Personality Disorders and which levels of personality functioning can be more specific predictors of particular Personality Disorders. Nonetheless, psychological studies have historically used non-clinical samples (in particular undergraduate students). A review conducted by Gallander Wintre, North, and Sugar (2001) estimated that the prevalence of undergraduate students in psychological research is 68%, with no significant decrease in this practice over the past few decades. Personality research has also produced studies which focus on non-clinical samples, even when addressing personality pathology, e.g., Bagge and Trull (2003) in their psychometric study of Personality Disorder Symptoms in a non-clinical sample. As the alternative model for Personality Disorders in the DSM-5 aims to conceptualize personality pathology on a continuum, it is pertinent to investigate the associations of maladaptive personality across different samples, comparing results in an effort to ascertain whether the model works universally in its conceptualization of

personality (and specifically maladaptive personality). It also explores sub-clinical maladaptive personality, an aspect seldom addressed by research in this field. Additionally, an important consideration highlighted by the findings of Thurston et al. (2008) is that a large proportion of the general community may indeed experience mental health difficulties, many are receiving therapy, and these instances are seldom screened for by researchers.

We also relied exclusively on self-report measures for both independent and dependent variables, using only a single measure for each construct. Common method variance can inflate correlations between maladaptive personality and personality function which can lead to overestimating the amount of overlap between criteria A and B. Notwithstanding, self-report measures remain the most preferred way of assessing personality traits (Vazire, 2006; Kagan, 2007). Additionally, the PID-5-SF was not shown to have good psychometric properties, as the model fit for the factor structure fell short of meeting the acceptable criteria, inviting some caution when interpreting the findings of the study.

These limitations stress the need to replicate and further investigate the connections examined in the study described in this chapter. Future research should not only further explore the associations of maladaptive personality traits and personality dysfunction in the classification and assessment of Personality Disorders, but also study clinical populations in order to understand how personality functioning and maladaptive personality traits are related in that context.

2.8 Conclusion

This study contributes to the conceptualization of personality pathology as being characterized by significant impairments in self and interpersonal functioning, by ascertaining negative associations between maladaptive personality traits and domains, and adaptive capacities. Results suggested that negative correlations between personality functioning and maladaptive personality occur, but also found that maladaptive personality can significantly and negatively predict personality functioning capacities. This study contributes to the growing research making use of the DSM-5 Alternative Model for Personality Disorders using a shorter and less

burdensome version (PID-5-SF) of its operationalizing instrument, highlighting that the need for more research into its validity so that more robust findings can be drawn.

Chapter Three

Maladaptive personality and attachment domains

3.1 Overview

The study outlined in this chapter sought to investigate the links between attachment and personality pathology. Specifically, it examined the associations between two attachment dimensions (Attachment Anxiety and Attachment Avoidance) and the DSM-5 personality trait domains and trait facets in two samples: one comprised of 138 undergraduate students, and a community sample of 198 participants. Using the Experiences in Close Relationships Revised (ECR-R) to assess the attachment dimensions and the Personality Inventory for the DSM-5 (PID-5) to measure the trait domains and trait facets, the following statistical analyses were conducted: correlations between the attachment dimensions and the five trait domains; correlations between the attachment dimensions and the twenty five personality trait facets; and regression predicting Attachment Anxiety and Attachment Avoidance from the five PID-5 trait domains, examining the moderation effect of gender. Strong positive correlations between Attachment Anxiety and Negative Affectivity, and between Attachment Avoidance and Detachment were found. The results also showed that Personality trait domains were significant predictors of the attachment dimensions across the two samples.

3.2 Introduction

The previous chapter started the examination of the relationship between maladaptive personality and experiences in close relationships, with findings reinforcing the conceptualization of personality pathology as being fundamentally interpersonal. It found support for the fact that the core features of personality pathology are related to impairments in 'self' and 'interpersonal' functioning, impacting how individuals relate to others. In this chapter, the impact of maladaptive personality on how individuals relate to each other will be further inspected, extending the focus to particular patterns of relationships, conceptualized by attachment styles.

3.2.1 Attachment and its operationalization

Attachment is one of the conceptual frameworks regarding close relationships. Attachment theory has its foundation in the early interactions between a child and a caregiver, postulating that the emotional bond developed between the infant and the caregiver would be central for the development of identity, intrapersonal regulation and interpersonal attitudes (Bowlby, 1973, 1977). Bowlby argued that this attachment bond is an intricate behavioral system aimed at protecting the child from danger, in the sense that the infant would pursue safety and security from a caregiver. Arguably optimal, this adaptive attachment can be disrupted when the needs of the child are not met by a caregiver, allowing for other attachment styles to develop.

Based on Bowlby's conceptualization of these attachment differences, Ainsworth, Blehar, Waters, and Wall (1978) developed a paradigm known as the 'Strange Situation', in which separation and reunion situations between a child and its caregiver occurred. Observing the child's behavior in these episodes, Ainsworth and colleagues were able to classify three attachment styles: secure, anxious-ambivalent, and avoidant. Later, Main and Solomon (1986, 1990) identified a fourth attachment style known as disorganized-disoriented. Infants with an anxious-ambivalent attachment style show increased distress when separated from their caregivers, needing continuous attention and closeness from them. Children who display avoidant attachment behavior do not exhibit distress when separated from the caregiver, ignoring them upon their return, showing the same behavior towards a strange person and the caregiver. As for a disorganized-disoriented attachment, children falling into this category tend to present disoriented and confused behavior. Researchers van IJzendoorn and Kroonenberg (1988) conducted a meta-analysis of Strange Situation research studies, addressing data from over 2,000 children, and concluded that the four abovementioned attachment behavior categories could be found across the reviewed research.

In terms of operationalizing attachment, the first developed measurement of adult attachment was the Adult Attachment Interview (AAI, George, Kaplan, & Main, 1996; Hesse, 2008), which codes predictive clues in the interview (e.g., idealization and coherence) and aims to ascertain how childhood experiences have impacted the adult's interpersonal aspects. The AAI categorizes adult attachment in terms of four types, akin

to the ones found in infant attachment: secure/autonomous, avoidant/dismissing, anxious/preoccupied (aligned with ambivalent/resistant), and unclassified. As is observed in infant attachment, a category of unresolved/disorganized can also be found, when applicable.

There is also an array of self-report measures that assess adult attachment and their current behaviors and attitudes towards significant others or romantic partners. Typically, self-report measures of adult attachment yield scores on dimensions of attachment anxiety and attachment avoidance, sometimes offering four categories (Bartholomew & Horowitz, 1991). In their review, Ravitz, Maunder, Hunter, Sthankiya, and Lancee (2010) found 29 commonly used attachment measures to show strong psychometric qualities.

The Experiences in Close Relationships (ECR) instrument (Brennan, Clark, & Shaver, 1998), which is used in the studies presented in this chapter, was developed via the principal component analysis of 323 attachment items from 60 self-report attachment measures, completed by over 1,000 undergraduate students. This analysis showed factors related to attachment anxiety and attachment avoidance, and items were then selected to correlate highly with both dimensions of attachment. This scale assesses individual differences with respect to attachment-related anxiety (the extent to which individuals are insecure *versus* secure about the responsiveness and availability of romantic partners) and attachment-related avoidance (the extent to which people are uncomfortable being close to others *versus* secure depending on other individuals). The revised version Experiences in Close Relationships Revised (ECR-R) was developed to improve item-response properties (Sibley, Fischer, & Liu, 2005). According to Ravtiz et al. (2010), both the ECR and the ECR-R are vastly used as a measure of romantic attachment and to study the relationships between attachment and psychopathology.

3.2.2. Romantic attachment

Attachment styles are often used in relationship research and this extension of attachment theory to the adult close relationship domain has been important in the production of sophisticated empirical evidence, providing research with valuable tools to understand the psychology of romantic love, couple relationships and sexual

behavior (Del Giudice, 2011). Research shows, for example, that these styles remain relatively stable during a person's life, with a 68%-75% correspondence between the attachment style present during childhood and the one exhibited in adult life (Fonagy et al., 2010). Several studies have also evidenced that a secure attachment style promotes more intimacy in romantic relationships, whereas an insecure attachment style is linked to less positive romantic relationships in adulthood (Collins et al., 2002; Nickerson and Nagle, 2005; Nosko, Tieu, Lawford, & Pratt, 2011; Tarabulsy et al., 2012; Karakurt, Keiley, & Posada, 2013). Research has also noted that individuals with an anxious attachment style perpetuate the same bond within their romantic relationships (Pascuzzo, Cyr, & Moss, 2013).

However, it is important to note that romantic attachment research may have a blind spot when it comes to sex differences, arising from the origins of attachment theory and from early studies which show almost no sex differences in parent-infant attachment (Del Giudice, 2011). For example, a review by Bakermans-Kranenburg and van IJzendoorn (2009) using data from the Adult Attachment Interview suggested that parent-infant attachment styles do not present gender differences nor vary according to culture or language. However, Del Giudice (2011) conducted a meta-analysis with two-dimensional romantic attachment questionnaires (ECR/ECR-R and the AAQ – Adult Attachment Questionnaire) data from 66,132 participants covering several world regions. Their results showed that large gender and cultural differences exist when it comes to romantic attachment styles found in women and men in most regions (with the exception of East Asia). In particular, they found that males showed lower anxiety and higher avoidance than females, with substantial heterogeneity between studies. They also found that these sex differences appeared to be larger in community samples than in college samples.

Furthermore, research has evidenced a large array of correlations between adult attachment and relational/social outcomes such as couple stability, mate selection, infidelity and multiple sexual behaviors (Mikulincer & Shaver, 2007; Del Giudice, 2009). These findings may challenge the sex-neutral model, as several (if not all) of the outcomes associated with attachment have different benefits and fitness costs for males and females, particularly when cultural factors (such as expected gender roles) come into play (Del Giudice, 2011; Wongpakaran, Wongpakaran, & Wedding, 2012). This highlights the need to consider gender as a potentially important aspect of the relationship between romantic attachment and its correlates.

3.2.3. Attachment and personality

Although mostly focused on Borderline Personality Disorder (BDP), research has established associations between Personality Disorders and attachment disturbance, particularly insecure attachment (Levy et al., 2015). As previously stated, personality pathology implies interpersonal dysfunction; therefore, an attachment-based research approach on personality pathology is pertinent. Research data suggests that attachment disturbances are particularly important risk factors for several Personality Disorders, particularly Borderline Personality Disorder (Levy et al., 2006).

However, by focusing mostly on one type of personality pathology, research has neglected the variation of relationships between attachment and personality, opening an area that needs further investigation. Moreover, with the emergent dimensional model for the DSM-5, it is relevant to examine these links under a new conceptualization of Personality Disorder.

According to Levy (2005), the links between specific Personality Disorders and attachment patterns are relatively unclear despite the prevalent association between attachment insecurity and general personality pathology. However, both interview-based and self-report research have shown relationships between anxious attachment and Histrionic Personality Disorder, Dependent Personality Disorder, and Avoidant Personality Disorder. Similarly, studies have unveiled associations between dismissing attachment and Paranoid Personality Disorder, Narcissistic Personality Disorder, Antisocial Personality Disorder and Schizoid Personality Disorder. Lastly, there are also reported relationships between anxious attachment and Schizotypal Personality Disorder, Paranoid Personality Disorder, Avoidant Personality Disorder, Borderline Personality Disorder, Obsessive-Compulsive Personality Disorder and Narcissistic Personality Disorder (Levy, 2005). According to Bakermans-Kranenburg and van IJzendoorm (2009), Personality Disorders with an internalizing dimension, such as Borderline Personality Disorder, are more associated with unresolved or preoccupied attachment, while disorders with externalizing features, such as Antisocial Personality Disorder, are more associated with a dismissing attachment style.

Research tends to inspect the relationships between specific Personality Disorder essential features and attachment dimensions. Specifically, Borderline

Personality Disorder's essential feature is defined as 'a pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity' (APA, DSM-IV-TR, 2000, p. 706). Brennan and Shaver (1998a) found that approximately 70% of the participants in their study had a BPD diagnosis and an insecure attachment style. Similarly, Fossati et al. (2001) established significant differences in attachment disturbances between Borderline Personality Disorder patients from non-clinical participants and other psychiatric patients with no Personality Disorder. Assessing BPD features in a non-clinical population using the Personality Assessment Inventory-Borderline Features Scale (PAIBOR, Morey, 1991), Nickell, Waubdy, and Trull (2002) ascertained that these features were moderately and negatively correlated with a secure attachment style, but positively correlated with avoidant and anxious/ambivalent attachment. Furthermore, in their review of attachment studies with Borderline patients, Agrawal, Gunderson, Holmes, and Lyons-Ruth (2004) found that every study reviewed showed strong associations between BPD features and insecure attachment, with unresolved, preoccupied, and fearful being the most characteristic.

3.2.4. Attachment and dimensional models

In terms of specific personality traits and their relationship to attachment dimensions, Shaver and Brennan (1992) reported correlations between the Big Five traits (Openness, Consciousness, Extraversion, Agreeableness and Neuroticism) and attachment styles. In their study, Attachment Anxiety was positively associated with Neuroticism (conceptually similar to the PID-5 Negative Affectivity), as expected, and Attachment Avoidance was negatively correlated with Extraversion and Agreeableness, the adaptive variants of PID-5 Detachment and Antagonism, respectively.

Studies by Griffin and Bartholomew (1994), Shaver et al., (1996), and Carver (1997) have found Attachment Avoidance to be positively correlated with Neuroticism and negatively with Conscientiousness. According to a review by Noftle and Shaver (2005), which analysed the results from several studies addressing the relationships between attachment and the Big Five traits, results showed that Attachment Security (i.e. low scores on Attachment Anxiety and Attachment Avoidance) is moderately and positively correlated with Agreeableness and Extraversion, modestly and positively

correlated with Conscientiousness, moderately and negatively correlated with Neuroticism, and not correlated with Openness. As for Attachment Anxiety, the results from the studies tended to show moderate to strong correlations with Neuroticism and no correlations with Openness. Regarding Attachment Avoidance, this dimension has been found to be modestly to moderately and negatively correlated with both Agreeableness and Extraversion, albeit not correlated with Openness.

Noftle and Shaver (2006) presented their results that suggested negative correlations between Attachment Security and Neuroticism, whereas positive moderate correlations were found between Attachment Security and Extraversion, Agreeableness and Conscientiousness. These same authors also ascertained moderate to strong correlations between Neuroticism and Attachment Anxiety, as well as moderate negative correlations between Attachment Anxiety and Extraversion, Agreeableness and Conscientiousness. As for Attachment Avoidance, moderate negative correlations were found with Extraversion and Agreeableness.

With the development of the dimensional model for the DSM-5, research has focused on finding convergence between the DSM-5 domains and the Five-Factor model, with data indicating that the five DSM-5 domains from the trait model can be understood as maladaptive variants of a general personality structure (Hopwood et al., 2012; Gore & Widiger, 2013; De Fruyt et al., 2013). A recent study by Fossati et al. (2015) has addressed the relationships between attachment dimensions and the DSM-5 trait model, as assessed by the Personality Inventory for the DSM-5 (PID-5). In their study with 480 Italian non-clinical adults, results suggested a meaningful relationship between maladaptive personality traits and adult attachment styles. In this study, a series of multiple regressions indicated that all maladaptive personality trait domains and trait facets (except Risk Taking) were significantly predicted by attachment styles, as assessed by the Attachment Style Questionnaire (ASQ; Feeney et al., 1994). Particularly, the results indicated that adult attachment styles were also more associated with maladaptive personality domains than adaptive personality domains, with all PID-5 trait domains showing substantial significant relationships with ASQ attachment scales.

3.2.5 Conclusion

Considering that research focused on particular personality traits and their relationship to attachment is limited, especially considering the dimensional model for the DSM-5, it is important and pertinent to examine the links between these constructs. While the study by Fossati et al. (2015) investigated these links, making use of a different Attachment measure, one of their aims was to investigate if attachment could predict maladaptive personality. The studies described in this chapter aimed to understand if maladaptive personality could predict romantic attachment, taking into account the potential effect of gender.

3.3 Aims and hypotheses

The following 2 studies described in this chapter were designed to investigate the relationships between personality trait domains and trait facets from the PID-5 and Anxiety and Avoidance Attachment dimensions. Research inspecting these links is still limited and has yet to explore how these relationships occur across different groups and samples. Furthermore, the research discussed above has noted that culture and gender may play a role in the way attachment occurs and correlates to other variables, with gender, cultural, and sample differences reported, often with mixed results. To this end, this chapter details two studies undertaken with two samples: an undergraduate sample and a community sample. We aimed to examine the relationship between attachment and maladaptive personality in each of the samples, comparing the results in order to understand how this relationship occurs in two different groups. Although research has shown measurement invariance for personality using the Five-Factor Model across different samples (Behrend, Sharek, Meade, & Wiebe, 2011), research with the PID-5 is still limited. The inclusion of a potentially more diverse sample (community sample) would add another layer of scrutiny in the relationship between maladaptive personality and attachment, examining differences (if any) in this relationship across different groups.

Specifically, they examined how the two attachment dimensions, operationalized by the ECR-R, and the PID-5 trait domains and trait facets were associated (*i, ii*), and how much variance of the attachment dimensions was explained

by maladaptive personality (*iii*) in a sample of undergraduate students and in a more general adult nonclinical sample, exploring the moderation effect of gender. Given the previous literature described above, it was expected that:

(i)   Attachment Anxiety would relate most strongly with the Negative Affectivity domain; this is specifically driven by the Separation Anxiety trait facet.

(ii)   Attachment Avoidance would relate most strongly with the Detachment domain; this is specifically driven by the Intimacy Avoidance trait facet.

(iii)   Maladaptive personality domains would significantly predict Attachment.

Study 1

3.4 Method

3.4.1 Participants

A sample of 138 undergraduate Psychology students studying at Goldsmiths, University of London, volunteered to participate in this study for course credit. Age ranged from 17 to 45 years ($M = 20.73$, $SD = 4.16$). 26.8% of the participants were male, 68.1% were female, and 5.1% did not specify their gender. Ethical approval for the study was provided by the Department of Psychology Ethics Committee at Goldsmiths.

3.4.2 Measures

Personality Inventory for the DSM-5 (PID-5)

This study uses the original 220-item version of the PID-5. Despite the criticism related to its length (as discussed in Chapter One of this Thesis), the psychometric properties of the full PID-5 have been explored further than other versions of this measure, making it a potentially more robust instrument and, consequently, providing a greater degree of confidence in the interpretation of findings. Additionally, it is hoped

that by using different versions of the measure, this Thesis fully explores the options for the operationalization of the DSM-5 dimensional model.

The PID-5 is a 220-item self-rated personality trait assessment scale for adults aged 18 and older. It assesses twenty five personality trait facets, which include Anhedonia, Anxiousness, Attention Seeking, Callousness, Deceitfulness, Depressivity, Distractibility, Eccentricity, Emotional Lability, Grandiosity, Hostility, Impulsivity, Intimacy Avoidance, Irresponsibility, Manipulativeness, Perceptual Dysregulation, Perseveration, Restricted Affectivity, Rigid Perfectionism, Risk Taking, Separation Insecurity, Submissiveness, Suspiciousness, Unusual Beliefs and Experiences, and Withdrawal. Each trait facet consists of 4 to 14 items (Cronbach's alpha values were all larger than .74, with the exception of Suspiciousness which had a value of .55; see Table 3.1). Each item asks the participant to rate how well the item describes him or her generally on a 4-point scale (the response categories for the items are 0 = very false or often false; 1 = sometimes or somewhat false; 2 = sometimes or somewhat true; 3 = very true or often true). In order to compute the five broader trait domains (i.e. Negative Affectivity, Detachment, Antagonism, Disinhibition and Psychoticism), specific triplets of trait facets are then combined. The scales are scored so that higher scores on a particular trait facet or trait domain equates to greater dysfunction. The Cronbach's alpha values for the Personality Trait domains and Personality trait facets are displayed in Table 2.1.

ECR-R – Experiences in Close Relationships Revised

The ECR-R is a revised version of Brennan, Clark, and Shaver's (1998) Experiences in Close Relationships (ECR) questionnaire (Appendix C). Both the ECR and the ECR-R were designed to assess individual differences regarding attachment-related anxiety (i.e., the extent to which people are insecure versus secure about the responsiveness and availability of romantic partners) and attachment-related avoidance (i.e., where people are uncomfortable being close to others versus secure depending on others). The ECR-R is a 36-item questionnaire, where 18 items comprise the attachment-related anxiety scale (sample item: 'I'm afraid that I will lose my partner's love') and the other 18 items comprise the attachment-related avoidance scale (sample item: 'I am nervous when my partner gets close to me'). Each item is rated by the

individual on a 7-point scale, where 1 represents 'strongly disagree' and 7 corresponds to 'strongly agree'. This questionnaire produces a score for attachment-related anxiety ($\alpha = .93$) and for attachment-related avoidance ($\alpha = .93$). Higher scores on these scales equate to greater attachment-related anxiety and avoidance. In this sample, the two domains are moderately positively correlated ($r = .30, p < .01$).

3.4.3 Procedure

Participants were asked to complete the following two questionnaires in groups in a classroom environment. They were also given a debrief information sheet, which included contacts for relevant organizations in case participants felt upset by the nature of any questions in the instruments. Participants also had the opportunity to ask questions about the study and their participation, personally and via email.

3.4.4 Statistical analysis

Descriptive statistics were produced for the PID-5 trait domains and trait facets, with differences between gender groups examined with independent-sample t-tests and effect sizes (Cohen's d). The trait scores were also compared to an empirical student sample comprised of 2,461 participants (Wright et al., 2012) using Welch t-tests to account for different sample sizes. Although past research using the Five-Factor Model evidenced measurement invariance of personality traits across samples (Behrend, Sharek, Meade, & Wiebe, 2011), the comparisons between samples for maladaptive personality measured by the PID-5 are limited.

Pearson correlations between the PID-5 domains and Attachment domains were calculated and interpreted according to Cohen's r effect sizes (Cohen, 2009; .10 small, .30 medium and .50 large). Type I error rate was adjusted using a Bonferroni correction for analyses, with the conventional $\alpha = .05$ being divided by the number of tests.

Hierarchical multiple regressions were conducted to predict Attachment Anxiety and Attachment Avoidance from the PID-5 domains, controlling for age and gender. Moderation analyses were also conducted to examine the interaction of gender by fitting a multiple regression model with the interaction term as a predictor. Additionally, multiple regression analyses were conducted to evaluate if the Attachment Domains were significantly predicted by the PID-5 trait facets, with

predictors entered simultaneously. Percent contributions were calculated to inspect the percentage of variance explained for each predictor, alongside with Relative Importance, a method of averaging sequential sums of squares over all orderings of regressors, which is deemed more appropriate for observational data with correlated predictors (Lindeman, Merenda, & Gold, 1980).

Analyses were conducted in R version 3.6.1 (R Core Team, 2019), using the *lm( )* function for linear regression modeling, *relaimpo* (Grömping, 2006) for Relative Importance analyses, and the regression outputs were produced using the package *stargazer* (Marek, 2018).

3.5 Results

3.5.1 Descriptive statistics and zero-order correlations

Table 3.1 (below) displays the means, standard deviations and Cronbach's alphas for the personality trait facets, personality traits domains, and attachment dimensions in the sample. Independent-samples t-tests were conducted to determine if any gender differences were present, with results showing that males scored significantly higher on Callousness, $t(125) = 3.29$, $p = .001$; Deceitfulness, $t(124) = 3.53$, $p = .001$; and Restricted Affectivity, $t(126) = 3.36$, $p = .001$.

Table 3.1 – *Means, standard deviations and Cronbach's alphas for the personality trait facets, personality trait domains, and attachment dimensions.*

	M_{males}	SD_{males}	$M_{females}$	$SD_{females}$	t	df	p	Alpha
Anhedonia	1.16	0.45	0.94	0.52	2.27	125	.025	.74
Anxiousness	1.26	0.64	1.36	0.7	-0.78	125	.440	.87
Attention Seeking	1.07	0.66	0.87	0.73	1.39	123	.168	.90
Callousness	0.79	0.5	0.49	0.44	**3.29***	125	**.001**	.87
Deceitfulness	1.09	0.56	0.71	0.54	**3.53***	124	**.001**	.83
Depressivity	0.87	0.69	0.7	0.65	1.31	122	.192	.93
Distractibility	1.33	0.63	1.11	0.64	1.70	124	.091	.86
Eccentricity	1.27	0.77	0.93	0.74	2.33	124	.022	.95
Emotional Lability	0.96	0.58	1.17	0.64	-1.69	124	.093	.82
Grandiosity	0.76	0.61	0.62	0.62	1.13	123	.261	.79
Hostility	1.95	0.51	0.96	0.55	0.89	124	.375	.79
Impulsivity	1.19	0.72	0.97	0.73	1.51	125	.133	.86
Intimacy Avoidance	0.74	0.59	0.81	0.67	-0.49	125	.625	.80
Irresponsibility	0.95	0.65	0.7	0.51	2.36	125	.020	.75
Manipulativeness	1.16	0.8	0.79	0.73	2.54	125	.012	.87
Perceptual Dys.	0.81	0.58	0.7	0.57	0.98	126	.329	.87
Perseveration	1.04	0.54	0.95	0.59	0.82	124	.415	.84
Restricted Affectivity	1.28	0.66	0.85	0.65	**3.36***	126	**.001**	.82
Rigid Perfectionism	0.96	0.66	0.93	0.64	0.26	123	.795	.88
Risk Taking	1.58	0.53	1.38	0.52	1.87	120	.064	.84
Separation Insecurity	0.85	0.68	0.97	0.71	-0.80	123	.426	.85
Submissiveness	1.22	0.72	0.98	0.71	1.67	126	.098	.79
Suspiciousness	1.07	0.38	1.08	0.5	-0.18	123	.855	.55
Unusual Beliefs	0.76	0.67	0.56	0.57	1.67	125	.097	.85
Withdrawal	0.97	0.53	0.8	0.63	1.43	124	.155	.88
Negative Affectivity	1.02	0.57	1.16	0.59	-1.27	123	.208	.82
Detachment	0.96	0.41	0.85	0.51	1.13	124	.259	.77
Antagonism	0.98	0.56	0.71	0.56	2.46	123	.015	.86
Disinhibition	1.14	0.56	0.93	0.52	2.02	123	.045	.79
Psychoticism	0.92	0.55	0.72	0.58	1.72	122	.088	.86
Attachment Anxiety	3.01	1.09	3.23	1.26	-0.92	127	.357	.93
Attachment Avoidance	3.27	1.14	3.47	1.28	-0.80	126	.427	.93

N = 138; N_{males} = 37, $N_{females}$ = 94; M = mean, SD = Standard Deviation, df = degrees of freedom, t = t-test statistic

* Significant at α = .0015 (Bonferroni correction applied)

Additionally, the mean scores of the PID-5 trait facets for this study were compared against the mean scores from the comparator sample, with results summarized in Table 3.2 (below). Out of the 25 comparison, 6 were statistically significant. The non-negligible differences were found in the Anhedonia, Intimacy

Avoidance, Irresponsibility, Attention Seeking, Manipulativeness and Submissiveness trait facets. Participants in this study scored significantly higher than the comparator sample participants in the trait facets of Anhedonia, Intimacy Avoidance and Irresponsibility, and significantly lower in the scores of Attention Seeking, Manipulativeness and Submissiveness.

Table 3.2 – *Means and standard deviations of the PID-5 trait facets for the study and comparator samples*

	Study sample (n = 138)		Comparator sample (n = 2461)			
	M	*SD*	*M*	*SD*	*t*	*p*
Anhedonia	1.01	0.52	0.72	0.59	-6.24	**< .001**
Anxiousness	1.33	0.68	1.39	0.71	0.99	.323
Attention Seeking	0.94	0.7	1.22	0.66	4.49	**< .001**
Callousness	0.59	0.48	0.46	0.45	-3.06	.003
Deceitfulness	0.83	0.59	0.85	0.58	0.38	.704
Depressivity	0.75	0.66	0.55	0.57	-3.39	.009
Distractibility	1.17	0.64	1.13	0.67	-0.70	.485
Eccentricity	1.04	0.76	1.06	0.76	0.30	.768
Emotional Lability	1.14	0.64	1.11	0.71	-0.52	.601
Grandiosity	0.67	0.61	0.82	0.59	2.76	.007
Hostility	0.98	0.53	1.03	0.57	1.06	.293
Impulsivity	1.04	0.72	0.94	0.65	-1.57	.118
Intimacy Avoidance	0.80	0.65	0.53	0.57	-4.71	**< .001**
Irresponsibility	0.78	0.56	0.52	0.48	-5.27	**< .001**
Manipulativeness	0.91	0.77	1.11	0.69	2.94	**< .001**
Perceptual Dysregulation	0.73	0.57	0.65	0.5	-1.60	.112
Perseveration	0.99	0.58	1.04	0.58	0.97	.344
Restricted Affectivity	0.96	0.67	0.93	0.65	-0.51	.613
Rigid Perfectionism	0.95	0.63	1.12	0.65	3.02	.003
Risk Taking	1.44	0.52	1.42	0.52	-0.43	.671
Separation Insecurity	0.93	0.69	1.08	0.66	2.44	.016
Submissiveness	1.05	0.72	1.26	0.66	3.31	**< .001**
Suspiciousness	1.08	0.46	0.99	0.53	-2.17	.031
Unusual Beliefs	0.63	0.6	0.66	0.57	0.57	.573
Withdrawal	0.85	0.6	0.74	0.59	-2.06	.041

M = mean, *SD* = Standard Deviation; t = Welch test statistic; significant correlations at Bonferroni corrected α = .002 in bold

Table 3.3 depicts the zero-order correlations and the descriptive statistics for the PID-5 Personality trait domains, ECR-R dimensions, as well as gender and age in the sample. Attachment Anxiety and Negative Affectivity are strongly and positively

correlated. Attachment Anxiety also correlated moderately and positively with Detachment, Disinhibition and Psychoticism. There was a strong positive correlation between Attachment Avoidance and Detachment, and Attachment Avoidance also correlated moderately and positively with Disinhibition. Moreover, the personality trait domains from the PID-5 are all strongly correlated with each other, with the exception of two correlations that could be considered moderate in magnitude: Antagonism and Negative Affectivity, and Antagonism and Detachment. As seen in Table 3.3, age and gender are largely uncorrelated with the personality and attachment style scales.

Table 3.3 - *Zero-order correlations and descriptive statistics for the personality trait domains, attachment dimensions, age and gender*

	1	2	3	4	5	6	7	8
1. N. Affectivity	-							
2. Detachment	.45**	-						
3. Antagonism	.30**	.34**	-					
4. Disinhibition	.50**	.52**	.41**	-				
5. Psychoticism	.58**	.57**	.51**	.73**	-			
6. A. Anxiety	.56**	.27**	-.01	.23**	.25**	-		
7. A. Avoidance	.98	.45**	-.14	.18*	.15	.30**	-	
8. Age	.03	-.07	-.02	-.08	-.10	.04	.07	-
9. Gender	.03	-.11	-.21	-.16	-.15	.13	.11	.02
Mean Study 1	1.13	0.89	0.79	0.99	0.79	3.14	3.39	20.73
SD Study 1	0.58	0.49	0.58	0.54	0.57	1.21	1.24	4.16

N = 138, * Correlation is significant at the .05 level (2-tailed), ** Correlation is significant at the .01 level (2-tailed). Gender was coded 1 for males and 2 for females.

Table 3.4 below depicts the zero-order correlations between the Attachment Dimensions and the twenty-five Personality Trait Facets of the PID-5. Overall, Attachment Anxiety correlates significantly and positively with seven trait facets, whereas Attachment Avoidance correlates significantly and positively with seven trait facets. It is worth highlighting that the two PID-5 trait facets that prima facie would appear to be most strongly related to romantic attachment issues, Separation Insecurity and Intimacy Avoidance, were each only strongly positively related to one of the Attachment dimensions, rather than being related to both Attachment dimensions.

Table 3.4 – *Zero-order correlations between the PID-5 trait facets and attachment dimensions*

	Att. Anxiety		Att. Avoidance	
	r	*p*	*r*	*p*
Anhedonia	**.32**	**< .001**	.26	.003
Anxiousness	**.52**	**< .001**	.20	.019
Attention Seeking	.15	.083	-.15	.094
Callousness	-.02	.815	.02	.788
Deceitfulness	.00	.956	-.05	.552
Depressivity	**.46**	**< .001**	.24	.007
Distractibility	**.30**	**.001**	.23	.009
Eccentricity	.25	.003	.14	.103
Emotional Lability	**.35**	**< .001**	.02	.780
Grandiosity	.02	.865	-.24	.006
Hostility	.14	.104	.01	.933
Impulsivity	.11	.217	.07	.432
Intimacy Avoidance	.07	.428	**.53**	**< .001**
Irresponsibility	.15	.085	.17	.058
Manipulativeness	-.05	.561	-.09	.297
Perceptual Dysregulation	**.30**	**.001**	.16	.070
Perseveration	.23	.007	.20	.022
Restricted Affectivity	.09	.298	.26	.003
Rigid Perfectionism	.15	.089	-.08	.350
Risk Taking	.07	.428	-.03	.767
Separation Insecurity	**.57**	**< .001**	.02	.792
Submissiveness	.26	.003	-.01	.896
Suspiciousness	.19	.031	.23	.007
Un. Beliefs and Experiences	.09	.281	.12	.179
Withdrawal	**.29**	**.001**	**.29**	**.001**

N= 138 ; Correlations significant at the .002 level (2-tailed) in bold, Bonferroni correction applied

3.5.2 Regression analyses

Table 3.5 shows the results of the hierarchical regression models used to determine how well the PID-5 Domains predict Attachment Anxiety and Attachment Avoidance, respectively. In these analyses, we controlled for gender and age in the first step of the models and added the five PID-5 domains in the second step of the model. For Attachment Anxiety, the first step of the model was non-significant, $F(2, 115) = .253$, $p = .777$. The second step of the model was significant, $R^2 = .353$, $\Delta R^2 = .348$, $F(7, 110) = 8.561$, $p < .001$. In this model, Negative Affectivity was a significant positive

predictor of Attachment Anxiety, $\beta = .622$, $p < .001$, with no other PID-5 trait domains being significant predictors. For Attachment Avoidance, the first step of the model was also non-significant, $F(2, 115) = .834$, $p = .437$. The second step of the model was significant, $R^2 = .305$, $\Delta R^2 = .291$, $F(7, 110) = 6.897$, $p < .001$. In this model, Detachment was a significant positive predictor of Attachment Avoidance, $\beta = .555$, $p < .001$, and Antagonism was a significant and negative predictor, $\beta = -.287$, $p < .05$. VIF and Tolerance values indicated no multicollinearity issues for both regression models.

Table 3.5 – *Multiple regression summary for personality trait domains predicting the attachment dimensions*

	Anxiety			Avoidance		
	β	R^2	ΔR^2	β	R^2	ΔR^2
Step 1		.004	.004		.014	.014
Gender	.63			.084		
Age	.20			.084		
Step 2		**.353****	**.348****		**.305****	**.291****
Gender	-.044			.119		
Age	-.004			.131		
Neg. Affect	**.622****			-.168		
Detachment	.104			**.555****		
Antagonism	-.171			**-.287****		
Disinhibition	-.02			.069		
Psychoticism	-.05			.046		

N = 138, β = Standardized coefficients, R^2 = R squared, ΔR^2 = change in R squared, * p < .05, ** p < .01

Table 3.6 (below) displays the Percent Contributions and Relative Importance percentages for each of the predictors of Attachment Anxiety and Attachment Avoidance. Negative Affect had a relative importance of 72.2% in the Attachment Anxiety model, being the most relevant predictor, whereas Detachment had a relative importance percentage of 64.3% on the Attachment Avoidance models. Both these predictors had substantially higher contributions to the explained variance than any other predictors in the model.

Table 3.6 – *Relative Importance, sum of squares and percentage contribution of the predictors of Attachment Anxiety and Attachment Avoidance*

Anxiety	Relative Importance (%)	Sum of Squares	% Contribution
Gender	1.2%	0.70	0.40%
Age	0.2%	0.07	0.04%
Negative Affect	72.2%	55.58	31.61%
Detachment	9.4%	0.37	0.21%
Antagonism	3.9%	4.98	2.83%
Disinhibition	5.5%	0.20	0.11%
Psychoticism	7.6%	0.13	0.07%

Avoidance	Relative Importance (%)	Sum of Squares	% Contribution
Gender	3.4%	1.33	0.72%
Age	3.9%	1.31	0.70%
Negative Affect	3.1%	0.66	0.35%
Detachment	64.3%	41.66	22.42%
Antagonism	17.4%	10.83	5.83%
Disinhibition	3.7%	0.87	0.47%
Psychoticism	4.3%	0.12	0.07%

Additionally, gender was examined as a moderator of the relationship between Negative Affectivity and Attachment Anxiety, and between Detachment, Antagonism and Attachment Avoidance (Table 3.6 and Table 3.7). For Attachment Anxiety, the model was significant, $R^2 = .33$, $F(3, 119) = 19.55$, $p < .001$, but none of the predictors were significant. Equally, for Attachment Avoidance, the model was significant, $R^2 = .29$, $F(5, 116) = 9.402$, $p < .001$, but none of the predictors were significant.

Table 3.7 – *Moderation analysis for the predictors of Attachment Anxiety*

	Attachment Anxiety	
	Main Effects	*Interaction*
	β (SE)	*β (SE)*
Constant	**1.864****	**2.137****
	(0.234)	(0.353)
Negative Affect	**1.181****	**0.912****
	(0.157)	(0.304)
Gender (female)	0.039	-0.348
	(0.204)	(0.427)
Negative Affect * Gender (female)		0.366
		(0.355)
Observations	123	123
R^2	0.324	0.330
Adjusted R^2	0.313	0.313
Residual Std. Error	1.015 (df = 120)	1.015 (df = 119)
F Statistic	**28.775***** (df = 2; 120)	**19.549***** (df = 3; 119)

Note: *SE* = Standard Error; *p <.05; **p <.01

Table 3.8 – *Moderation analysis for the predictors of Attachment Avoidance*

	Attachment Avoidance	
	Main Effects	*Interaction*
	β (SE)	*β (SE)*
Constant	**2.539****	**2.645****
	(0.297)	(0.558)
Detachment	**1.413****	**1.280***
	(0.215)	(0.496)
Antagonism	**-0.681****	-0.658
	(0.184)	(0.343)
Gender (female)	0.221	0.095
	(0.223)	(0.610)
Detachment*Gender		0.164
		(0.552)
Antagonism*Gender		-0.033
		(0.407)
Observations	122	122
R^2	0.288	0.288
Adjusted R^2	0.270	0.258
Residual Std. Error	1.076 (df = 118)	1.085 (df = 116)
F Statistic	**15.898***** (df = 3; 118)	**9.402***** (df = 5; 116)

Note: $^{*}p<.05; ^{**}p<.01$

Lastly, multiple regression analyses were conducted to predict the Attachment dimensions from the PID-5 trait facets. In the Attachment Anxiety model, predictors explained about 50% of the variance, $R^2 = .49$, $F(27, 85) = 3.056$, $p < .001$, with Separation Insecurity being a significant positive predictor. In the Attachment Avoidance model, predictors explained about 55% of the variance, $R^2 = .55$, $F(27, 85) = 3.876$, $p < .001$, with Grandiosity and Submissiveness being negative predictors, and Intimacy Avoidance and Restricted Affectivity being positive predictors. Table 3.9 below displays the results for both models.

Table 3.9 *–Regression results for the PID-5 trait facets as predictors of Attachment Anxiety and Attachment Avoidance*

	Attachment Anxiety β (SE)	Attachment Avoidance β (SE)
Constant	**1.765**** (0.902)	**2.416**** (0.868)
Anhedonia	0.023 (0.380)	-0.188 (0.366)
Anxiousness	0.295 (0.315)	0.310 (0.304)
Attention Seeking	0.339 (0.241)	0.159 (0.232)
Callousness	-0.244 (0.444)	-0.140 (0.427)
Deceitfulness	-0.209 (0.352)	-0.405 (0.339)
Depressivity	0.445 (0.426)	0.336 (0.410)
Distractibility	0.162 (0.280)	0.344 (0.269)
Eccentricity	0.011 (0.246)	0.042 (0.236)
Emotional Lability	-0.073 (0.294)	0.019 (0.283)
Grandiosity	-0.171 (0.277)	**-0.755**** (0.267)
Hostility	-0.020 (0.324)	-0.267 (0.312)
Impulsivity	-0.114 (0.248)	0.189 (0.239)
Intimacy Avoidance	-0.025 (0.202)	**0.785**** (0.195)
Irresponsibility	0.150 (0.390)	0.104 (0.375)
Manipulativeness	-0.152 (0.251)	0.396 (0.242)
Perceptual Dysregulation	0.478 (0.425)	0.155 (0.409)
Perseverance	-0.463 (0.357)	0.136 (0.344)
Restricted Affectivity	-0.026 (0.236)	**0.516*** (0.227)
Rigid Perfectionism	-0.084 (0.239)	-0.267 (0.230)
Risk Taking	0.212 (0.284)	-0.474 (0.273)
Separation Insecurity	**0.543**** (0.227)	-0.247 (0.219)
Submissiveness	-0.128 (0.219)	**-0.562**** (0.210)
Suspiciousness	-0.064 (0.295)	0.027 (0.284)
Unusually Beliefs	-0.344 (0.293)	-0.070 (0.282)
Withdrawal	0.380 (0.391)	-0.096 (0.376)
Gender	0.143 (0.279)	0.129 (0.269)
Age	0.014 (0.025)	0.044 (0.024)
Observations	113	113
R^2	0.493	0.552
Adjusted R^2	0.331	0.409
Residual Std. Error (df = 85)	1.000	0.962
F Statistic (df = 27; 85)	**3.056****	**3.876****

Note: $^*p<.05$; $^{**}p<.01$

Study 2

3.6 Method

3.6.1 Participants

A sample of 198 adult participants from the UK volunteered to participate by completing an online survey. Information regarding a possible Personality Disorder diagnosis was not provided. The participants were recruited through social media platforms, forums and email, where they were asked to follow a link to access the online survey. They did not receive any compensation for their participation. Age ranged from 18 to 59 years (M = 27.83, SD = 7.20). 37.9% (75) of the participants were male, 61.6% (122) were female and 0.5% (1) identified as other. Regarding marital status, 51% (101) described themselves as being single, 46.5% (92) were in a relationship (including married and in a civil partnership), 2% (4) were divorced, 2% (4) and 0.5% (1) were widowed. Ethical approval for the study was provided by the Department of Psychology Ethics Committee at Goldsmiths.

3.6.2 Measures and procedure

In this study we used the same measures as described above in Study 1, the PID-5 and the ECR-R. The Cronbach's alpha values for the ECR-R scales were .91 for Attachment Anxiety and .93 for Attachment Avoidance. The Cronbach's alpha values for the PID-5 Personality trait domains and facets are shown in Table 2.5. There were no significant differences between the PID-5 trait domains and trait facets, or ECR-R Attachment scores between participants in Study 1 and participants in Study 2.

Participants could access a debrief information page once their participation was over, which included contacts for relevant organizations in case they felt upset by the nature of any questions in the instruments. Participants were also given an email contact to ask any further questions regarding the study or their participation.

3.6.3 Statistical analysis

Descriptive statistics were produced for the PID-5 domains and trait facets, with differences between gender groups examined with independent-sample t-tests and effect sizes (Cohen's *d*). The trait facets scores were compared to an empirical community sample comprised of 925 participants (Bach et al., 2015). To compare the mean scores, Welch t-tests were employed as to account for different sample sizes and unequal variances.

Pearson correlations between the PID-5 domains and Attachment domains were calculated and interpreted according to Cohen's *r* effect sizes (Cohen, 2009; .10 small, .30 medium and .50 large). Type I error rate was adjusted using a Bonferroni correction for analyses, with the conventional $\alpha = .05$ being divided by the number of tests.

Hierarchical multiple regressions were conducted to predict Attachment Anxiety and Attachment Avoidance from the PID-5 domains. Moderation analyses were also conducted to examine the interaction of gender by fitting a multiple regression model with the interaction term as a predictor. Additionally, multiple regression analyses were conducted to evaluate if the Attachment Domains were significantly predicted by the PID-5 trait facets, with predictors entered simultaneously. Percent contributions were calculated to inspect the percentage of variance explained for each predictor, alongside with Relative Importance, a method of averaging sequential sums of squares over all orderings of regressors, which is deemed more appropriate for observational data with correlated predictors (Lindeman, Merenda, & Gold, 1980).

Analyses were conducted in R version 3.6.1 (R Core Team, 2019), using the *lm( )* function for linear regression modelling, *relaimpo* (Grömping, 2006) for Relative Importance analyses, and regression outputs were produced using the package *stargazer* (Marek, 2018).

3.7 Results

3.7.1 Descriptive statistics and zero-order correlations

Table 3.10 displays the means, standard deviations and Cronbach's alphas for the personality trait facets, personality traits domains, and attachment dimensions in the sample. Independent-sample t-tests were also conducted to determine if any gender

differences were present for Attachment Anxiety and Avoidance, as well as for the five personality trait domains. Males scored significantly higher on the Antagonism trait domain, $t(195) = 5.26$, $p < .0001$. As for the attachment dimensions, we found a significant difference in the scores of Attachment Anxiety, with males scoring higher, $t(195) = 4.35$, $p < .0001$. On the personality trait facets level, results showed significant gender differences in the means of 6 trait facets, with males scoring higher on Attention Seeking, Deceitfulness, Eccentricity, Grandiosity, Manipulativeness, and Suspiciousness.

Table 3.10 – *Means, standard deviations and Cronbach's alphas for the personality trait facets, personality trait domains, and attachment dimensions*

	M_{males}	SD_{males}	$M_{females}$	$SD_{females}$	t	df	p	Alpha
Anhedonia	1.06	0.65	0.91	0.62	1.59	195	.111	.86
Anxiousness	1.48	0.78	1.34	0.72	1.20	195	.230	.90
Attention Seeking	1.23	0.76	0.78	0.61	**4.56***	195	**< .001**	.91
Callousness	0.47	0.39	0.34	0.31	2.75	195	.007	.79
Deceitfulness	0.93	0.53	0.59	0.43	**4.92***	195	**< .001**	.80
Depressivity	0.77	0.62	0.72	0.72	0.46	195	.649	.94
Distractibility	1.21	0.74	1.05	0.67	1.51	195	.132	.89
Eccentricity	1.5	0.77	1.01	0.85	**4.06***	195	**< .001**	.96
Emotional Lability	1.28	0.71	1.22	0.7	0.57	195	.568	.85
Grandiosity	0.96	0.61	0.67	0.59	**3.29***	195	**.001**	.81
Hostility	1.1	0.57	1	0.61	1.23	195	.219	.84
Impulsivity	1	0.6	0.88	0.63	1.34	195	.182	.81
Intimacy Avoidance	0.62	0.6	0.63	0.63	-0.12	195	.904	.79
Irresponsibility	0.74	0.47	0.57	0.47	2.46	195	.015	.64
Manipulativeness	1.19	0.68	0.77	0.56	**4.69***	195	**< .001**	.77
Perceptual Dys.	0.74	0.51	0.63	0.54	1.41	195	.161	.85
Perseveration	1.06	0.56	0.98	0.57	1.04	195	.300	.82
Restricted Affectivity	1.11	0.62	0.91	0.66	2.08	195	.039	.81
Rigid Perfectionism	1.3	0.69	1.17	0.77	1.23	195	.219	.92
Risk Taking	1.37	0.61	1.16	0.5	2.66	195	.009	.87
Separation Insecurity	1.07	0.68	0.79	0.61	2.97	195	.003	.83
Submissiveness	1.14	0.61	1.03	0.7	1.10	195	.275	.79
Suspiciousness	1.21	0.44	1	0.41	**3.34***	195	**.001**	.42
Unusual Beliefs	0.86	0.61	0.65	0.66	2.17	195	.031	.84
Withdrawal	0.98	0.62	0.93	0.62	0.57	195	.571	.89
Negative Affectivity	1.28	0.62	1.12	0.55	1.83	195	.068	.78
Detachment	0.88	0.47	0.82	0.5	0.89	195	.376	.69
Antagonism	1.03	0.51	0.68	0.41	**5.26***	195	**< .001**	.75
Disinhibition	0.98	0.49	0.83	0.5	2.05	195	.042	.76
Psychoticism	1.03	0.53	0.76	0.61	3.13	195	.002	.82
Attachment Anxiety	3.89	1.14	3.15	1.16	**4.35***	195	**< .001**	.91
Attachment Avoidance	3.19	1.18	3.07	1.25	0.64	195	.522	.93

N = 198; N_{males} = 75, $N_{females}$ = 122; M = mean, SD = Standard Deviation, df = degrees of freedom, t = t-test statistic

* Significant at α = .0015 (Bonferroni correction applied)

Additionally, the mean scores of the PID-5 trait facets for this study were compared against the mean scores from the comparator sample, with results

summarized in Table 3.11 (below). Out of the 25 comparison, 3 were non-significant. Participants in this study score significantly higher in all trait facets except Attention Seeking, Manipulativeness and Risk Taking.

Table 3.11 – *Means and standard deviations of the PID-5 trait facets for the study and comparator samples*

	Study sample (n = 198)		Comparator sample (n = 925)			
	M	**SD**	**M**	**SD**	**t**	**p**
Anhedonia	0.96	0.63	0.71	0.55	5.18	**< .001**
Anxiousness	1.39	0.75	0.91	0.68	8.3	**< .001**
Attention Seeking	0.95	0.71	0.88	0.59	1.29	.196
Callousness	0.39	0.35	0.20	0.31	7.07	**< .001**
Deceitfulness	0.72	0.05	0.44	0.49	1.697	**< .001**
Depressivity	0.74	0.68	0.40	0.5	6.66	**< .001**
Distractibility	1.10	0.71	0.66	0.64	8.05	**< .001**
Eccentricity	1.19	0.86	0.52	0.64	1.04	**< .001**
Emotional lability	1.24	0.7	0.89	0.67	6.43	**< .001**
Grandiosity	0.78	0.61	0.48	0.49	6.48	**< .001**
Hostility	1.04	0.6	0.67	0.55	7.988	**< .001**
Impulsivity	0.93	0.62	0.63	0.58	6.25	**< .001**
Intimacy Avoidance	0.62	0.61	0.36	0.5	5.61	**< .001**
Irresponsibility	0.64	0.47	0.37	0.41	7.49	**< .001**
Manipulativeness	0.93	0.64	0.81	0.6	2.42	.016
Perceptual Dysregulation	0.67	0.53	0.32	0.38	8.82	**< .001**
Perseveration	1.00	0.57	0.57	0.52	9.78	**< .001**
Restricted Affectivity	0.99	0.65	0.68	0.56	6.23	**< .001**
Rigid Perfectionism	1.22	0.74	0.82	0.64	7.06	**< .001**
Risk Taking	1.24	0.55	1.13	0.46	2.62	.009
Separation Insecurity	0.89	0.65	0.61	0.61	5.55	**< .001**
Submissiveness	1.07	0.67	1.03	0.68	0.76	.448
Suspiciousness	1.08	0.43	0.53	0.55	1.55	**< .001**
Unusual beliefs	0.73	0.65	0.29	0.42	9.13	**< .001**
Withdrawal	0.95	0.62	0.54	0.53	8.65	**< .001**

M = mean, *SD* = Standard Deviation; t = Welch test statistic; significant correlations at Bonferroni corrected α = .002 in bold

Table 3.12 depicts the zero-order correlations between the personality trait domains and attachment dimensions, as well as the descriptive statistics for each of the scales. A strong and positive correlation between Attachment Anxiety and Negative Affectivity was found. Moderate and positive correlations were found between

Attachment Anxiety and the following personality trait domains: Detachment, Antagonism, Disinhibition and Psychoticism. Regarding Attachment Avoidance, and similarly to the results in Study 1, this dimension correlates strongly and positively with Detachment, and weakly and positively with Disinhibition. The five personality trait domains were positively correlated, with effect sizes varying from moderate to strong, except for the relationship between Antagonism and Detachment, which were not significantly correlated.

Table 3.12 - *Zero-order correlations and descriptive statistics for the personality trait domains, attachment dimensions, age and gender*

	1	2	3	4	5	6	7	8
1. Neg. Affectivity	-							
2. Detachment	**-33****	-						
3. Antagonism	**.27****	.12	-					
4. Disinhibition	**.52****	**.34****	**.39****	-				
5. Psychoticism	**.52****	**.42****	**.40****	**.58****	-			
6. A. Anxiety	**.62****	**.36****	**.27****	**.38****	**.38****	-		
7. A. Avoidance	-.03	**.52****	-.02	**.17***	.13	**.17***	-	
8. Age	**-.30****	**-.20****	-.13	-.10	**-.24****	-.10	**.16***	-
9. Gender	-.10	-.06	**.33****	-.14	**-.20****	**.27****	-.07	.06
Mean Study 2	1.17	0.84	0.81	0.89	0.86	3.42	3.12	27.83
SD Study 2	0.58	0.49	0.48	0.5	0.59	1.21	1.23	7.2

*N = 198, * Correlation is significant at the .05 level (2-tailed), ** Correlation is significant at the .01 level (2-tailed). Gender was coded 1 for males and 2 for females. SD = Standard Deviation*

Table 3.13 below displays the zero-order correlations between the attachment dimensions and the twenty-five personality trait facets of the PID-5. Overall, Attachment Anxiety correlated positively with 15 personality trait facets, whereas Attachment Avoidance correlated positively with 4 trait facets. Attachment Anxiety correlated most strongly with Perseveration, Separation Insecurity, Anxiousness, Depressivity and Emotional Lability. As for attachment Avoidance, there were significant positive correlations with Anhedonia, Intimacy Avoidance, Restricted Affectivity, and Withdrawal.

Table 3.13 – *Zero-order correlations between the PID-5 trait facets and attachment dimensions*

	Attachment Anxiety		Attachment Avoidance	
	r	*p*	*r*	*p*
Anhedonia	**.34**	**< .001**	**.24**	**< .001**
Anxiousness	**.55**	**< .001**	-.01	.902
Attention Seeking	**.33**	**< .001**	-.06	.412
Callousness	.03	.630	.16	.026
Deceitfulness	**.34**	**< .001**	.13	.064
Depressivity	**.53**	**< .001**	.17	.016
Distractibility	**.40**	**< .001**	.15	.039
Eccentricity	**.40**	**< .001**	.13	.059
Emotional Lability	**.45**	**< .001**	.01	.928
Grandiosity	.15	.031	-.06	.390
Hostility	.20	.005	.08	.234
Impulsivity	.21	.002	.10	.170
Intimacy Avoidance	.20	.005	**.60**	**< .001**
Irresponsibility	**.34**	**< .001**	.20	.005
Manipulativeness	.21	.003	-.09	.183
Perceptual Dysregulation	**.35**	**< .001**	.15	.030
Perseveration	**.56**	**< .001**	.12	.081
Restricted Affectivity	.11	.115	**.37**	**< .001**
Rigid Perfectionism	**.35**	**< .001**	-.01	.941
Risk Taking	-.05	.517	-.03	.644
Separation Insecurity	**.56**	**< .001**	-.08	.238
Submissiveness	**.28**	**< .001**	-.05	.502
Suspiciousness	**.40**	**< .001**	.10	.176
Unusual Beliefs and Experiences	.22	.002	.06	.406
Withdrawal	**.31**	**< .001**	**.38**	**< .001**

N= 198; Correlations significant at the .002 level (2-tailed) in bold, Bonferroni correction applied

3.7.2 Regression analyses

Table 3.14 shows the results from two hierarchical regression models with the PID-5 trait domains predicting Attachment Anxiety and Attachment Avoidance, respectively. In these analyses, as in Study 1, we controlled for gender and age in the first step of the model and then added the five PID-5 domains to the second step of the

model. For Attachment Anxiety, the first step with the control variables was significant, $R^2 = .03$, $F(2, 195) = 8.254$, $p < .001$; the second step of the model was also significant, $R^2 = .46$, $\Delta R^2 = .32$, $F(7, 190) = 22.865$, $p < .001$. Overall, Negative Affectivity was a significant positive predictor of Attachment Anxiety, $\beta = .547$, $p < .001$, as well as Detachment, $\beta = .183$, $p < .05$. Gender was a significant yet negative predictor, $\beta = -.189$, $p < .05$ in this step of the model.

For Attachment Avoidance, the first step of the model with the control variables was non-significant, $F(2, 195) = 2.949$, $p = .055$. The second step of the model was significant, $R^2 = .35$, $\Delta R^2 = .32$, $F(7, 190) = 14.747$, $p < .001$. In this step, Detachment was a significant positive predictor of Attachment Avoidance, $\beta = .561$, $p < .001$, as was Disinhibition, $\beta = -.287$, $p < .05$. Negative Affectivity, however, was a significant negative predictor, $\beta = -.292$, $p < .001$. Lastly, Age was also a significant negative predictor of Attachment Avoidance, $\beta = -.127$, $p < .05$. VIF and Tolerance values indicated no multicollinearity issues for both regression models.

Table 3.14 – *Multiple regression summary for personality trait domains predicting the attachment dimensions*

	Anxiety			Avoidance		
	β	R^2	ΔR^2	β	R^2	ΔR^2
Step 1		.078**	.078**		.029	.029
Gender	.063**			-.061		
Age	.02			-.157**		
Step 2		.457**	.379**		.352**	.323**
Gender	-.189**			-.077		
Age	.051			-.127*		
N. Affect	.547**			-.292**		
Detachment	.183**			.561**		
Antagonism	.059			-.101		
Disinhibition	.017			.202*		
Psychoticism	-.044			-.074		

N = 198, β = Standardized coefficients, R^2 = R squared, ΔR^2 = change in R squared, * p < .05, ** p < .01

Table 3.15 below displays the Percent Contributions and Relative Importance percentages for each of the predictors of Attachment Anxiety and Attachment Avoidance. Negative Affect had a relative importance of 52.4% in the Attachment Anxiety model, being the most relevant predictor, whereas Detachment had a relative importance percentage of 74.1% in the Attachment Avoidance models. Both these predictors had higher contributions to the explained variance than any other predictors in the model, but Gender and Detachment also had a relative importance of above 10% in the Anxiety model.

Table 3.15 – *Relative Importance, sum of squares and percentage contribution of the predictors of Attachment Anxiety and Attachment Avoidance*

Anxiety	Relative Importance (%)	Sum of Squares	Percent Contribution (%)
Gender	11.2%	25.32	8.86%
Age	0.6%	1.21	0.42%
Negative Affect	53.4%	96.16	33.63%
Detachment	12.7%	8.22	2.87%
Antagonism	4.3%	0.43	0.15%
Disinhibition	9.7%	0.01	0.00%
Psychoticism	8.0%	0.33	0.12%

Avoidance	Relative Importance (%)	Sum of Squares	Percent Contribution (%)
Gender	0.5%	0.62	0.21%
Age	6.0%	8.59	2.93%
Negative Affect	8.4%	0.97	0.33%
Detachment	74.1%	84.87	28.94%
Antagonism	1.5%	0.78	0.27%
Disinhibition	6.6%	5.57	1.90%
Psychoticism	2.8%	0.79	0.27%

Additionally, gender was examined as a moderator of the relationship between Negative Affectivity, Detachment and Attachment Anxiety, and between Negative Affectivity, Detachment, Disinhibition and Attachment Avoidance. The interaction model for Attachment Anxiety was overall significant, $R^2 = .46$, $F(5, 191) = 32.67$, $p < .001$, and while Negative Affectivity and Detachment remained significant positive predictors, the interactions with gender were non-significant. Equally, the Attachment

Avoidance interaction model was overall significant, $R^2 = .35$, $F(7, 189) = 14.37$, $p < .001$, but none of the interaction predictors were significant. Tables 3.16 and 3.17 (below) display the comparisons between Main Effects models and Interaction models.

Table 3.16 – *Moderation analysis for the predictors of Attachment Anxiety*

	Attachment Anxiety	
	Main Effects	*Interaction*
	β (SE)	*β (SE)*
Constant	**2.116****	**1.925****
	(0.190)	(0.270)
Negative Affect	**1.096****	**1.042****
	(0.118)	(0.180)
Detachment	**0.427****	**0.721****
	(0.140)	(0.235)
Gender (female)	**-0.540****	-0.248
	(0.133)	(0.338)
Negative Affect*Gender		0.080
		(0.238)
Detachment*Gender		-0.453
		(0.292)
Observations	197	197
R^2	0.454	0.461
Adjusted R^2	0.446	0.447
Residual Std. Error	0.899 (df = 193)	0.898 (df = 191)
F Statistic	**53.511**** (df = 3; 193)	**32.669**** (df = 5; 191)

Note:	*$^*p < .05$; $^{**}p < .01$*

Table 3.17– *Moderation analysis for the predictors of Attachment Avoidance*

	Attachment Avoidance	
	Main Effects	*Interaction*
	β (SE)	*β (SE)*
Constant	**2.376****	**2.877****
	(0.222)	(0.327)
Negative Affect	**-0.596****	**-0.906****
	(0.150)	(0.225)
Detachment	**1.426****	**1.464****
	(0.161)	(0.264)
Disinhibition	0.316	0.174
	(0.175)	(0.272)
Gender (female)	-0.071	**-0.872***
	(0.151)	(0.401)
Negative Affect * Gender		0.565
		(0.300)
Detachment * Gender		-0.071
		(0.332)
Disinhibition * Gender		0.194
		(0.355)
Observations	197	197
R^2	0.325	0.347
Adjusted R^2	0.311	0.323
Residual Std. Error	1.016 (df = 192)	1.006 (df = 189)
F Statistic	**23.092**** (df = 4; 192)	**14.370**** (df = 7; 189)

Note: $^{*}p < .05;\ ^{**}p < .01$

Multiple regression analyses were also conducted to predict the attachment dimensions from the PID-5 trait facets. In the Attachment Anxiety model, predictors explained about 60% of the variance, $R^2 = .60$, $F(27, 169) = 9.306$, $p < .001$, with Depressivity, Intimacy Avoidance, Separation Insecurity and Withdrawal being significant positive predictors, and Callousness being a negative predictor. In the Attachment Avoidance model, predictors explained about 50% of the variance, $R^2 = .49$, $F(27, 169) = 5.891$, $p < .001$, with Anxiousness a being negative predictor, and

Intimacy Avoidance and Restricted Affectivity being positive predictors. Table 3.18 below displays the results for both models.

Table 3.18 *–Regression results for the PID-5 trait facets as predictors of Attachment Anxiety and Attachment Avoidance*

	Attachment Anxiety	Attachment Avoidance
	β (SE)	β (SE)
Constant	**1.979**** (0.415)	**3.101**** (0.476)
Anhedonia	-0.261 (0.163)	0.153 (0.187)
Anxiousness	0.204 (0.141)	**-0.418*** (0.161)
Attention Seeking	0.187 (0.135)	-0.029 (0.155)
Callousness	**-0.634*** (0.259)	-0.267 (0.297)
Deceitfulness	0.031 (0.203)	0.447 (0.232)
Depressivity	**0.470**** (0.176)	-0.056 (0.201)
Distractibility	0.036 (0.143)	-0.129 (0.164)
Eccentricity	0.162 (0.122)	-0.031 (0.140)
Emotional Lability	0.071 (0.139)	0.041 (0.160)
Grandiosity	-0.133 (0.146)	-0.220 (0.167)
Hostility	-0.204 (0.139)	0.040 (0.160)
Impulsivity	0.116 (0.148)	0.177 (0.170)
Intimacy Avoidance	**0.273*** (0.132)	**1.037**** (0.152)
Irresponsibility	-0.019 (0.203)	0.160 (0.233)
Manipulativeness	0.279 (0.149)	-0.218 (0.171)
Perceptual Dysregulation	-0.374 (0.214)	0.311 (0.245)
Perseverance	0.315 (0.201)	0.126 (0.231)
Restricted Affectivity	0.068 (0.126)	**0.335*** (0.145)
Rigid Perfectionism	0.142 (0.116)	-0.114 (0.133)
Risk Taking	-0.196 (0.145)	-0.060 (0.166)
Separation Insecurity	**0.541**** (0.135)	0.187 (0.154)
Submissiveness	-0.132 (0.108)	-0.129 (0.124)
Suspiciousness	0.105 (0.189)	0.053 (0.217)
Unusual Beliefs	-0.160 (0.144)	-0.374 (0.165)
Withdrawal	**0.263*** (0.152)	0.081 (0.174)
Gender	**-0.463**** (0.142)	-0.115 (0.163)
Age	0.008 (0.009)	-0.015 (0.010)
Observations	197	197
R^2	0.598	0.485
Adjusted R^2	0.534	0.403
Residual Std. Error (df = 169)	0.825	0.945
F Statistic (df = 27; 169)	**9.306****	**5.891****

Note: $^{*}p < .05;$ $^{**}p < .01$

3.8 Discussion

Across these two studies, we sought to examine the relationships between the PID-5 trait domains and trait facets, and the Anxiety and Avoidance attachment dimensions from the ECR-R. We expected Attachment Anxiety to correlate positively and significantly with the Negative Affectivity domain from the PID-5, and we expected Attachment Avoidance to correlate positively and significantly with the Detachment domain from the PID-5. At the trait facet level, we hypothesized that Attachment Anxiety would correlate particularly strongly with Separation Anxiety, and Attachment Avoidance would correlate particularly strongly with Intimacy Avoidance, given the conceptual overlap between these trait facets and the two attachment styles. We indeed found that Attachment Avoidance correlated positively and significantly with Detachment. Research by Mikulincer, Dolev, and Shaver (2004) showed that less-secure individuals may incorrectly dismiss their partners' signs of care and affection, therefore failing to engage in intimacy-promoting and support seeking behavior, in a way that can be described as the avoidant individual's typical pattern of interpersonal appraisals and behavior. In study 1 we found a significant relationship between Attachment Avoidance and Intimacy Avoidance. The results for Study 2 confirmed this relationship and also showed correlations between this Attachment dimension and Intimacy Avoidance, Restricted Affectivity and Withdrawal. These three personality trait facets belong to the Detachment trait domain, which we found to be linked to Attachment Avoidance, both empirically and conceptually. Supporting our findings, Noftle and Shaver (2006) found negative correlations between Attachment Avoidance and Extraversion (the reverse pole of Detachment) and with Conscientiousness (the reverse of pole of Disinhibition, a personality trait domain that we found to be moderately and positively correlated with Attachment Avoidance in both studies). According to Thompson (1999), these findings and our strong correlation between Attachment Avoidance and Detachment fit the research evidence on infant-parent attachment, which suggests a link between parental coolness/rejection and infant avoidance.

Our findings for Study 1 and Study 2 also showed a strong positive correlation between Attachment Anxiety and Negative Affectivity. Negative Affectivity is described in the DSM-5 as frequent and intense experiences of high levels of a wide range of negative emotions such as depression, anxiety, shame, guilt, anger, worry, as

well as their interpersonal and behavioral manifestations (e.g., dependency and self-harm, respectively) (APA, 2013). Noftle and Shaver (2006) found that Attachment Anxiety was particularly strongly related to Neuroticism, especially the depression, anxiety and vulnerability facets (which resemble the PID-5 trait facets from Negative Affectivity), as anxious attachment takes place when a person feels inadequately loved, as well as lacking control of interpersonal events. Thompson (1999) claims that anxious attachment happens when a parental caregiver is unpredictable or unreliable, therefore causing the infant to remain vigilant and feel vulnerable. Moderate and positive correlations were also found between Attachment Anxiety and Detachment, Disinhibition and Psychoticism across both studies, and between Attachment Anxiety and Antagonism in Study 2.

The existing literature largely supports these results, in which we found relations between Attachment Anxiety and personality trait facets on the Negative Affectivity domain. In both studies, we found correlations between Attachment Anxiety and Separation Insecurity, Anxiousness and Emotional Lability. We also found in both studies a strong correlation between Attachment Anxiety and Depressivity. Shaver and Brennan (1992) also showed that Attachment Anxiety was highly correlated with the depression facet of Neuroticism. Both these findings and our results match the conceptualization of the attachment dimension as a negative model of self, as described by Bartholomew (1990).

In order to determine how the PID-5 trait domains compare in predicting both Attachment Anxiety and Avoidance, we performed hierarchical regression analyses, controlling for gender and age. Both studies found that Negative Affectivity was a significant predictor of Attachment Anxiety. In Study 2, Detachment was also a positive predictor of Attachment Anxiety. Both studies found Detachment to be a significant predictor of Attachment Avoidance. Regarding the other PID-5 domains, we found different results in the two studies. In Study 1, Antagonism was a negative predictor of Attachment Avoidance, which was not verified in Study 2, where Negative Affectivity was a negative predictor. Moreover, in Study 2, we found that Disinhibition was also a positive predictor, yet not as strong as Detachment. In the same study, age was found to be a negative predictor of Attachment Avoidance. In both our studies, we also found Negative Affect to significantly predict Attachment Anxiety. In the second study, the PID-5 domains explained almost 50% of the variance in our second

regression model predicting this attachment style, with Negative Affect and Detachment being significant predictors. This also aligns with the results from Fossati et al. (2015), in which similar explained variances were found in the relationship between these two domains and insecure attachment styles. Similarly, Detachment also showed meaningful relationships with Avoidant styles of attachment in these authors' research, which we also encountered across both of our studies, albeit accompanied by different predictors. In study 1, Detachment and Antagonism explained about 30% of the variance of Attachment Avoidance, whereas on Study 2, 35% of the variance was explained by Negative Affect, Detachment and Disinhibition. Interestingly, Antagonism and Negative Affect were positive predictors whereas Detachment and Disinhibition were negative predictors, with the former showing the highest coefficient. Fossati et al. (2015) also found a negative yet small association between Antagonism and Discomfort to Closeness, as well as a negative association between Negative Affectivity and Confidence in Self and Others. At a trait facet level, Fossati et al. (2015) found other negative associations between aspects of Avoidant Attachment and Antagonism (e.g., Attention Seeking and Relationships as Secondary to Achievement). In Study 2, Antagonism does not significantly predict Attachment Avoidance, but Disinhibition is a positive predictor. These differences could potentially be attributed to different characteristics of the sample, one being a student sample and the other being a general population one.

To quantify the relative contributions of the regressors to the model's total explanatory value, the Relative Importance indicator was calculated following the method of averaging sequential sums of squares over orderings of regressors as described in Lindeman, Merenda and Gold (1980). This method is deemed more adequate than the regular implementation of the percentual contribution of each regressor when dealing with correlated data such as personality data. By looking at the Relative Importance, we found similar results across both studies: in the Attachment Anxiety models, Negative Affect had the highest relative importance, contributing the most in the model (72.2% in Study 1, 53.4% in Study 2); in the Attachment Avoidance models, Detachment was the highest contributor with 64.3% relative importance on Study 1 and 74.1% on Study 2. Interestingly, by looking at the contributions of the predictors which were not found significant in both studies on the Attachment Avoidance model, Antagonism has a Relative Importance of 17% in Study 1, but

Disinhibition only achieves 4% on Study 2, suggesting that Antagonism characteristics may be more impactful in Attachment Avoidance than Disinhibition ones. Overall, these findings highlight the predictive quality of these PID-5 domains on Attachment dimensions, particularly Negative Affect and Detachment.

On a trait facet level, results from both studies had significant regression models of both Attachment Anxiety and Attachment Avoidance being predicted by the trait facets. In both studies Separation Insecurity was found to be a significant predictor of Attachment Anxiety, and in both studies Intimacy Avoidance and Restricted Affectivity were positive predictors of Attachment Avoidance. In study 1, Grandiosity and Submissiveness were found to negatively predict Attachment Avoidance, which was not verified in Study 2. Grandiosity is a trait facet encompassed by the Antagonism domain, which was also found to be a negative predictor of Attachment Avoidance in Study 1 with a Relative Importance of 17%. Conversely, Anxiousness (a trait facet from Negative Affect) was found to be a negative predictor of Attachment Avoidance in Study 2. In study 2, Depressivity (a Negative Affect trait facet) and Withdrawal were also found to significantly and positively predict Attachment Anxiety, whereas Callousness was found to be a negative predictor. These trait-level regression analyses extend the results of the domain-level models and offer some insight into which traits are associated with Attachment domains. As expected, trait facets from the Detachment domain such as Restricted Affectivity and Intimacy Avoidance were positive predictors of Attachment Avoidance, whereas traits from the Negative Affect domain such as Separation Insecurity and Depressivity were positive predictors of Attachment Anxiety. These findings can be particularly useful to clinicians when devising treatment strategies for patients with Personality Disorders with particular configurations of trait facets, as they could have an insight into how they relate to significant others and how consequent issues could be worked on.

We also compared the mean scores of the PID-5 trait facets for this study against the mean scores from comparator samples. In Study 1, 6 statistically significant differences were found, with participants from our undergraduate sample scoring significantly higher than the comparator sample participants in the trait facets of Anhedonia, Intimacy Avoidance and Irresponsibility, and significantly lower in the scores of Attention Seeking, Manipulativeness and Submissiveness. When comparing the sample from Study 2 to another empirical sample, differences were found across

22 trait facets, with our participants scoring significantly higher in all trait facets except Attention Seeking, Manipulativeness and Risk Taking. As the dimensional model for the DSM-5 is a somewhat recent development, more research is needed to understand how cultural differences and personality are connected. Our empirical comparator samples were not collected in the United Kingdom, which may indicate that there is a degree of variability across cultures.

In Study 2 we found gender differences across the Antagonism domain, which seems to match some research on gender differences across the Big Five. Namely, a paper by Weisberg, DeYoung, and Hirsh (2011) found that women reported higher Big Five Extraversion, Agreeableness (which opposes to PID-5 Antagonism) and Neuroticism. In this second study, we also found that male participants scored higher in the Attachment Anxiety dimension, which seems to contradict the findings depicted on a meta-analysis of sex differences in the avoidance and anxiety dimensions of adult romantic attachment performed by Del Giudice (2011). In this paper, males generally present higher avoidance and lower anxiety, although this author claims that web-based and college samples show smaller results for sex differences.

As for the PID-5 personality trait facets, the results for Study 1 presented gender differences, with men showing significantly higher scores of Callousness, Deceitfulness, and Restricted Affectivity. Similarly to what happened in Study 1, we found gender differences across personality trait facets on Study 2, with men showing significantly higher scores on Attention Seeking, Deceitfulness, Eccentricity, Grandiosity, Manipulativeness, and Suspiciousness. Out of these six personality trait facets, four belong to the Antagonism domain, one belongs to the Detachment domain, and one to the Psychoticism domain. Previous research by Furnham and Trickey (2011), albeit not following the DSM-5 new criteria, found gender differences on most disorders, especially with males scoring higher on Schizoid and Antisocial Personality Disorders (DSM-IV). In light of the DSM-5 criteria, our study shows that males score higher on certain personality trait facets associated with the Antisocial Personality Disorder (such as Manipulativeness and Deceitfulness), Schizotypal Personality Disorder (such as Eccentricity), and even Narcissistic Personality Disorders (such as Attention Seeking and Grandiosity). However, with respect to the moderation role of gender in the association between maladaptive personality and attachment, our results suggested no effect of gender in this relationship.

Regarding the etiology of Personality Disorders, as some researchers have suggested, there is increasing attention to the correlates of these disorders, albeit very little has been explored. Researchers such as Brennan, Clark and Shaver (1998) insisted on the importance of the link between Personality Disorders and insecure, disorganized and unresolved adult attachment patterns. In our studies, we examined these relations as the interaction between the individual and their environment plays an important role in the development of Personality Disorders (Laulik et al., 2013).

Research by Rosenstein & Horowitz (1996) found links between preoccupied attachment and diagnosis of Histrionic, Borderline, Obsessive-compulsive or Schizotypal Personality Disorders. The DSM-5 suggests that Personality Disorders are characterized by pathological personality traits that can be assessed with measures such as the PID-5. For the Borderline Personality Disorder, the pathological personality traits lie in the domain of Negative Affectivity (particularly Emotional Lability, Anxiousness, Separation Insecurity, and Depressivity). Our results show a strong and positive correlation between Attachment Anxiety and Negative Affectivity, as well as strong and positive correlations between Attachment Anxiety and the mentioned personality facets. Moreover, Borderline Personality Disorder is also characterized by the Disinhibition domain, which also has a positive correlation with Attachment Anxiety in our results. These findings seem to comply with the links followed by the mentioned paper that associates Attachment Anxiety with Borderline Personality Disorder. As for the Obsessive-Compulsive Personality Disorder, the DSM-5 suggests the presence of Rigid Perfectionism and the Negative Affectivity domain, both of which have positive correlations with Attachment Anxiety (the latter in particular). Similarly, the correlations between Psychoticism and Negative Affectivity (present in the Schizotypal Personality disorder) with Attachment Anxiety are also present.

Regarding Attachment Avoidance and considering that research has shown links between this Attachment domain and Antisocial and Narcissistic Personality Disorders (see Rosenstein & Horowitz, 1996), our results also seem to match these findings. Positive associations were found between Attachment Avoidance and with Detachment and its trait facets, specifically Withdrawal, Intimacy Avoidance and Anhedonia, all characteristic of the Avoidant Personality Disorder.

Overall, Attachment domains were characterized by significant relationships with maladaptive personality domains, particularly Attachment Anxiety with Negative

Affectivity, and Attachment Avoidance with Detachment, with these PID-5 trait domains explaining over 50% of the observed score variance of Attachment dimensions. The DSM-5 Alternative Model of Personality Disorders, as operationalized by the PID-5, is an important tool that could help practitioners and clinicians consider how Personality Disorders impact the way individuals behave and experience relationships with significant others, particularly among those who have diagnoses of Personality Disorders with particular incidence of trait facets belonging to the Detachment and Negative Affect trait domains. Furthermore, there is an increasing amount of interest for the clinical applications of attachment theory, particularly for individuals with a Personality Disorder diagnosis. The associations uncovered by the studies in this chapter contribute to a better understanding of how particular aspects of maladaptive personality relate to attachment, offering potential insight into the development of attachment-based interventions for Personality Disorders as conceptualized by the alternative model.

By looking at the specific way individuals relate to each other, as conceptualized by attachment styles, this study adds further evidence to the interpersonal component of personality pathology which we began to explore in Chapter Two. This study offers another layer of specificity in the exploration of the relationships between maladaptive personality and experiences in close relationships, highlighting the links between personality pathology and how individuals bond and connect with one another. In the next chapter of this Thesis, we will investigate these links further by addressing specific characteristics of close relationships such as satisfaction and intimacy, and how maladaptive personality is related to these crucial aspects of close relationships.

3.9 Limitations and future directions

The findings described in this chapter should be considered in light of some limitations. The samples used in these studies were composed of adults who volunteered to participate, therefore representing a convenient study group, introducing a potential bias due to under-representation of sub-groups in the sample. That said, there is evidence that personality assessment tools show measurement invariance across different types of samples (Behrend, Sharek, Meade, & Wiebe, 2011) and results from data collected in person versus collected online have shown to be similar

(Paolacci, Chandler, & Ipeirotis, 2010).

Furthermore, as all participants were nonclinical volunteers, generalizations of these findings to clinical populations cannot be made. However, as the alternative model for Personality Disorders in the DSM-5 attempts to conceptualize personality pathology in a continuum, it is important to explore the associations of maladaptive personality across different samples. It also provides the opportunity to explore sub-clinical maladaptive personality.

Although self-report measures to assess personality remain the most preferred way to assess personality traits (Vazire, 2006; Kagan, 2007), these studies also relied exclusively on self-report measures of adult attachment, which limits the generalization of the results to interview-based, implicit measures. Attachment can arguably be assessed well using interviews, albeit this procedure often involves a substantial amount of training which may not be available or feasible for some researchers.

Such limitations emphasize the need to further extensions and replications of this study. Future research could make use of interview-based measures of adult attachment, as well as clinical samples to further investigate the links between attachment and maladaptive personality.

3.10 Conclusion

These findings indicate that attachment dimensions are associated with maladaptive personality traits and maladaptive personality appears to be a significant predictor of attachment. Strong positive correlations between Attachment Anxiety and Negative Affectivity, and between Attachment Avoidance and Detachment were found. The results also showed that personality trait domains were significant predictors of the Attachment dimensions. This study adds to the literature by accentuating the links between relational variables, such as attachment, and personality pathology. Moreover, our findings match those found using the Five-Factor Model, adding more evidence to the idea that the alternative model in the DSM-5 can be understood in relation to the FFM.

Chapter Four

Maladaptive personality, satisfaction and intimacy in romantic relationships.

4.1 Overview

The study outlined in this chapter sought to investigate how pathological personality traits are related to relationship variables (intimacy and satisfaction) in a community sample. Specifically, it addressed the links between the DSM-5 personality trait domains and trait facets, and five domains of Intimacy (Emotional, Social, Intimacy, Intellectual and Recreational), as well as their relationship with Satisfaction in a romantic relationship and Break Up Reasons. Additionally, it examined how Intimacy mediated the relationship between maladaptive personality and Satisfaction. Results suggested that Intimacy and maladaptive personality are negatively associated, with Detachment contributing to lower levels of Intimacy in a relationship, but also found to be a negative predictor of how many relationships individuals have, how long they have been single and how satisfied they are in their current relationship. Intimacy was also found to fully mediate the relationship between maladaptive personality and satisfaction in a romantic relationship. Additionally, moderate associations between some maladaptive personality trait domains and trait facets, and common breakup reasons were found.

4.2 Introduction

In the previous chapter, we continued to explore the relationships between maladaptive personality and experiences in close relationships, specifically by looking at how maladaptive personality is related to attachment styles. Throughout this Thesis, our studies have explored the proposed conceptualization of personality pathology in the DSM-5 which defines personality pathology in terms of 'self' and 'interpersonal' functioning (Skodol, 2012), with results supporting this conceptualization.

As pointed out by Krueger et al. (2007), the incapacity to pursue fundamental tasks in adult life, such as close and meaningful intimate relationships, is essential to

the conceptualization of Personality Disorders. Thus, the study described in this chapter aims to further investigate how maladaptive personality relates to how individuals specifically experience their close relationships with a focus on two crucial and inherent aspects of romantic relationships: intimacy and satisfaction.

4.2.1 Interpersonal relationships and personality

Interpersonal relationships are a core part of human experience and research on interpersonal functioning has become more important over the years. Associations between personality and relational variables have been explored by research, as personality plays a role in the way we relate to others. Research has established links between personality pathology and relationship functioning, with studies showing consistent negative associations between categorical Personality Disorder symptoms and relationship variables. According to Craig (2003), the romantic relationships of individuals with a Personality Disorder are characterized by disagreement and conflict. Conversely, previous research has focused mostly on the associations between relationship functioning and specific categorical Personality Disorder diagnoses, in particular Borderline and Antisocial Personality Disorders. Adults with Borderline Personality Disorder experience a higher number of breakups of important relationships (Labonte & Paris, 1993) and this diagnosis is associated with low relationship satisfaction (South, Turkheimer, & Oltmanns, 2008; Bouchard, Sabourin, Lussier, & Villeneuve, 2009), and higher emotional loss and negative impact on both negative and positive experiences initiated by dating partners (Bahtia et al., 2013). Studies have also found that Borderline Personality Disorder symptoms predicted 4-year romantic dysfunction, including partner satisfaction, abuse, and conflicts (Daley, Burge, & Hammen, 2000). Antisocial Personality Disorder has also been linked to negative relationship functioning, namely negative associations with relationship satisfaction (Humbad, Donnellan, Iacono, & Burt, 2010). Moreover, studies have also found that Personality Disorder symptoms are associated with marital functioning (South et al., 2008) and aspects of daily functioning such as quality of interactions, overall relationship sentiment, and serious conflicts with one's spouse. In the DSM-5 conceptualization of Personality Disorders, individuals that present a diagnosis of Antisocial Personality Disorder exhibit pathological personality trait facets encompassed by the Antagonism and Disinhibition trait domains, whereas individuals

with Borderline Personality Disorder also exhibit pathological personality trait facets encompassed by these two trait domains, as well as trait facets belonging to the Negative Affectivity trait domain.

4.2.2 Trait level approaches

However, on a personality trait level, research on relationships has mostly been focused on the Five-Factor Model, as assessed by the Revised NEO Personality Inventory (NEO-PI-R, Costa & McCrae, 1992), examining links between its domains (i.e., Openness, Consciousness, Extraversion, Agreeableness, and Neuroticism) and relational variables, particularly satisfaction, stability and intimacy. Satisfaction in a relationship is an important part of an individual's overall life satisfaction, making it one of the most studied relationship variables. Intimacy is also a relevant aspect of a relationship, therefore its links to personality have also been studied (White, Hendrick and Hendrick, 2004). In general, Neuroticism has usually been associated with greater dissatisfaction in relationships, whereas Openness, Extraversion (opposite of PID-5 Detachment) and Agreeableness (opposite of PID-5 Antagonism) have been more associated with greater satisfaction (Botwin, Buss, & Shackelford, 1997; Nemechek & Olson, 1999).

According to Donnellan, Conger and Bryant (2004) research has suggested that personality traits have been associated with marital stability, relationship satisfaction and mate selection. Results point out that Neuroticism seems to be particularly problematic to relationships (Claxton, O'Rourke, Smith, & De Long, 2011), with some studies indicating that spouses scoring higher on the Neuroticism domain are more likely to divorce and report relational dissatisfaction (Karney & Bradbury, 1995; Shiota & Levenson, 2007). Furthermore, the results from a meta-analysis conducted by Heller, Watson and Ilies (2004) suggest that Neuroticism is the personality trait most strongly related to marital dissatisfaction. Shaver and Brennan (1992) also suggest that Neuroticism is associated with shorter relationships. In their study, Shaver and Brennan (1992) also found openness to ideas, values and aesthetics, as well as general Openness, to be associated with a decreased relationship length. Karney and Bradbury (1995) also found that Openness was negatively related to marital satisfaction and stability.

Conscientiousness (opposed to PID-5 Disinhibition) has been found to be positively associated with relationship stability (Karney & Bradbury, 1995), relationship satisfaction (Karney & Bradbury, 1995; Kwan, Bond, & Singelis, 1997), and also relationship length (Shaver & Brennan, 1992). Similarly, Extraversion (opposed to PID-5 Detachment) has been found to be related with relationship satisfaction (Kelly & Conley, 1987; Karney & Bradbury, 1995). As for Agreeableness, (opposed to PID-5 Antagonism) research suggests that this factor is positively associated with relationship satisfaction as well (Karney & Bradbury, 1995; Kelly & Conley, 1987; Kwan et al., 1997). Orzeck and Lung (2005) suggested that couples with high scores of Agreeableness were more committed in their romantic relationships, therefore more highly satisfied with their relationships.

Shiota and Levenson (2007) suggested that individuals perceived as more extraverted by their partners reported higher levels of satisfaction in their relationships. However, research is not unanimous when it comes to Extraversion, as the study by Orzeck and Lung (2005) showed that less committed participants were more likely to be perceived as highly extraverted by their partners and also by themselves, suggesting that Extraversion might enable less investment in a romantic relationship, leading to diminished satisfaction.

In a more recent investigation, White, Hendrick and Hendrick (2004) conducted a study to examine the associations between personality variables from the Five-Factor Model and close relationship variables, including relationship intimacy and satisfaction. The authors found that Neuroticism was negatively associated with and also predictive of intimacy and satisfaction in a relationship. Similarly, they found positive associations between intimacy and satisfaction with Agreeableness (the adaptive variant of PID-5 Antagonism) and Extraversion (adaptive variant of PID-5 Detachment). In this study, Conscientiousness was also found to be positively correlated with relationship intimacy for male participants. An even more recent meta-analysis by Malouff, Thorsteinsson, Schutte, Bhullar, and Rooke (2010) looked at 19 samples with a total of 3,848 participants, showing significant correlations between four of the Five-Factor Model personality factors and the level of relationship satisfaction, namely low Neuroticism, high Conscientiousness, high Agreeableness and high Extraversion. In the DSM-5 paradigm, high levels of relationship satisfaction

could be negatively associated with high Negative Affectivity (similar to Neuroticism), high Antagonism and high Detachment.

4.2.3 Links with the DSM-5 dimensional model

Recently, Decuyper, Gistelinck, Vergauwe, Pancorbo, and DeFruyt (2018), examined the associations between PID-5 traits and relationship functioning in intimate couples for the first time. Using the Relationship Assessment Scale (RAS; Decuyper et al., 2012; Hendrick et al., 1998), the Revised Dyadic Adjustment Scale (RDASL; Busby, Christensen, Crane, & Larson, 1995) and the Maudsley Marital Questionnaire (MMQ; Arrindell, Boelens, & Lambert, 1983) to assess relationship satisfaction, their study showed that Negative Affectivity and Detachment had the most consistent negative associations with relationship satisfaction and adjustment, with couples exhibiting higher self- and partner ratings of Detachment and Negative Affectivity also reporting less relationship satisfaction and adjustment. Specifically, the study found that men with higher self-rated Negative Affectivity reported less relationship satisfaction on both the RAS and the MMQ total score, as well as less relationship adjustment on the RDAS. This effect was also found significant in women, but only in the prediction of the MMQ total score. Similarly, higher self-ratings of Detachment were associated with lower relationship satisfaction (RAS and MMQ scores) and adjustment for both genders. Less consistent associations were found for Disinhibition, with self-rated Disinhibition in men being negatively associated with the RDAS and the RAS total scores reported by their partners, and self-rated Disinhibition in women being also negatively associated with relationship adjustment in men. Regarding Psychoticism, the results showed that women with higher scores on this trait domain were less satisfied in their romantic relationship (as assessed by the MMQ), and self-reported Psychoticism in men was negatively associated with partner-reported relationship adjustment. Lastly, Antagonism was found to be unrelated to romantic functioning, with results showing that this trait domain was not significantly associated with either relationship adjustment nor relationship satisfaction.

4.2.4 Conclusion

The existing literature addressing the associations between personality and aspects of relationships suggests that personality plays a role in how individuals experience their relationships, particularly in terms of satisfaction and intimacy. However, the research exploring these associations is limited and mostly focused on either DSM-IV diagnostic criteria and is therefore constrained to a problematic categorical classification, or focused the Five-Factor Model of personality, which does not fully account for maladaptive personality (particularly in relation to Openness vs Psychoticism). Therefore, while there is evidence that maladaptive personality has an impact on satisfaction and intimacy, these links are also yet to be fully explored using a dimensional approach. Decuyper et al. (2018) addressed the associations between maladaptive personality and satisfaction, but the relationship with other aspects previously evidenced to be impacted by personality (e.g., intimacy) was not explored. Furthermore, the dimensional conceptualization of personality in the DSM-5 is rooted on the paradigm that personality pathology is interpersonal, characterized by deficits in intimacy. This aspect highlights the need to assess how criterion A and criterion B impact satisfaction in romantic relationships, with a particular focus on unpacking this chain of relations, by specifically looking at whether the effect of criterion B in satisfaction is mediated by criterion A.

4.3 Aims and hypotheses

The following study sought to investigate the links between personality pathology and relationship variables such as intimacy and satisfaction. Specifically, this study aimed to examine the associations between maladaptive personality and romantic relationship variables in light of the DSM-5 Alternative Model for Personality Disorders by looking at the links between DSM-5 personality trait domains and trait facets, one measure of Intimacy (assessing five higher-order domains: Emotional, Social, Intellectual, Sexual and Recreational Intimacy), one measure of Satisfaction in a romantic relationship and a Break Up Reasons scale. The use of three instruments to assess relational variables aimed to improve the understanding of the disadvantageous effects of pathological traits on relationship functioning.

Based on the reviewed literature, we expected to find negative associations between maladaptive personality and intimacy, satisfaction and breakup reasons.

Specifically, we expected higher levels of maladaptive traits to be related to lower levels of satisfaction and intimacy. Given that research has shown detrimental effects of the FFM trait Neuroticism in relationship satisfaction (e.g., Malouff et al., 2010) and results also described links between low Agreeableness and negativity in couples (Donnellan, Conger, & Bryant, 2004), it was hypothesized that negative associations would be found between both Satisfaction and Intimacy with Negative Affect and Antagonism. Also, given that Detachment relates to the avoidance of social interactions and intimacy, negative associations between relationship functioning and this trait domain were also expected (*i*, *ii*). Lastly, it was hypothesized that the effect of maladaptive personality on relationship satisfaction is mediated by intimacy (*iii*). In sum, the following were expected:

(*i*). A negative association between maladaptive personality trait domains and facets, and all levels of Intimacy;

(*ii*). A negative association between maladaptive personality trait domains and facets, and Satisfaction in a romantic relationship;

(*iii*) The negative effect of maladaptive personality on Satisfaction is mediated by Intimacy.

4.4 Method

4.4.1 Participants

A sample of 306 participants was recruited via social media platforms and also via advertising at Goldsmiths, University of London. All the participants volunteered to participate in this study and completed the questionnaires on Qualtrics. All participants were debriefed and offered contacts if they required further information about the project. Age ranged from 18 to 63 years ($M = 28.81$, $SD = 8.99$). In this sample, 37.6% (115) of the participants were male, 61.4% (188) were female, and 1% (3) identified as other.

Regarding relationship status, 69% (211) of the participants were in a relationship (defined as 'the one you would have with a boyfriend, girlfriend, partner, husband/wife, in which all parts experience a feeling from an emotional attraction towards one another, intimacy (emotional and/or physical) and often sexual attraction'), whereas

31% (95) were single. For the participants in a relationship, the duration of the relationships ranged from less than one month to 44 years ($M = 61.07$ months, $SD = 77.41$). Single participants reported the length of their latest relationship ($M = 24.06$ months, $SD = 37.50$) and how long they had been single ($M = 32.11$ months, $SD = 56.53$). All participants also reported on the number of relationships they had experienced, including the current one if applicable ($M = 3.71$, $SD = 3.01$). In terms of sexual orientation, 59.5% (182) of the participants described themselves as heterosexual, 25.8% (79) as gay, 10.5% (32) as bisexual, 2% (6) as lesbian, 1% (3) as questioning/unknown, 0.7% (2) as asexual, 0.3% (1) as pansexual and 0.3% (1) as other. The Ethics Committee from the Department of Psychology at Goldsmiths provided ethical approval for the study.

4.4.2 Measures

Personality Inventory for the DSM-5 (PID-5-SF)

For this study, the 100-item version of the Personality Inventory for the DSM-5 (PID-5-SF; Krueger, Derringer, Markon, Watson, & Skodol, 2012) was employed, as it is a shorter and less burdensome version of the PID-5, that can reliably and efficiently assess personality traits. Despite potential shortcomings related to factor validity (as explored in Chapter Two), as participants were completing a larger number of instruments for this study, a shorter version of the PID-5 was used to reduce participant fatigue. This version was developed by Maples, Carter, Crego, Core et al. (2015), and assesses the same 25 personality trait facets e.g., Anhedonia, Emotional Lability, Hostility, etc.), organized within 5 broader domains (Negative Affect, Detachment, Antagonism, Disinhibition and Psychoticism). Maples et al. (2015) used item-response theory-based analyses to establish a reduced set of 100 items that could also measure the 5 domains and the 25 traits, showing that the correlational profiles of the original PID-5 and the reduced 100-item version were practically identical across different criteria. The Cronbach alpha values for this measure were as following: Negative Affectivity, $\alpha = .72$.; Detachment, $\alpha = .81$.; Antagonism, $\alpha = .80$; Disinhibition, $\alpha = .72$; and Psychoticism, $\alpha = .76$.

Couples Satisfaction Index (CSI)

The Couples Satisfaction Index (Funk & Rogge, 2007; Appendix D) is a 32-item questionnaire that measures the participants' satisfaction in a relationship. This scale has a variety of items with different formats and response scales, in which participants are asked to rate the statement in a Likert-type scale. Ratings refer to agreement, veracity or frequency of the statement in the item (e.g., I sometimes wonder if there is someone else out there for me; Do you enjoy your partners' company?). A satisfaction score is then computed by averaging the item results. The Cronbach alpha value for this measure was $\alpha = .91$.

Personal Assessment of Intimacy in Relationships (PAIR)

The Personal Assessment of Intimacy in Relationships (Schaefer & Olson, 1981; Appendix E) is a 36-item questionnaire on a 5-point Likert scale (from 1 – Does not describe me/my relationship at all, to 5 – Describes me/my relationship very well), which measures relationship intimacy, organized in five different factors and one 'faking' scale (Emotional Intimacy, Social Intimacy, Sexual Intimacy, Intellectual Intimacy, and Recreational Intimacy). Emotional Intimacy items regard feelings of closeness, ability to share those feelings and being supported; Social Intimacy relates to social networks and having common friends with a partner; Sexual Intimacy includes aspects such as touching, sexual and physical closeness, and sharing affection; Intellectual Intimacy relates to the sharing of experiences and ideas about work and life; lastly, Recreational Intimacy involves the sharing of common pastimes, activities and experiences. Participants were asked to refer to their current relationship when answering this measure. The Cronbach alpha values for the PAIR factors were as following: Emotional Intimacy, $\alpha = .86$; Social Intimacy, $\alpha = .73$; Sexual Intimacy, $\alpha = .83$; Intellectual Intimacy, $\alpha = .81$; and Recreational Intimacy, $\alpha = .76$.

Breakup Reasons Scale (BRS)

The Breakup Reasons Scale (Field, Diego, Pelaez, Deeds, & Delgado, 2010; Appendix F) is a 20-item questionnaire that assesses the explanations for romantic breakups within 4 categories (Intimacy, Affiliation, Sexuality and Autonomy), with each item rated on a 4-point Likert scale. The Intimacy domain includes aspects such as poor communication, distrust, unreciprocated love, non-caring behavior,

diminishing apathy, arguments, infidelity, and hypersensitivity. The Affiliation domain encompasses aspects such as boredom, lack of time together, dissimilar interests, dissimilar traits, diminishing fun, diminishing excitement, and increasing time during other activities. The Sexuality domain regards aspects such as sexual dissatisfaction, diminishing physical attraction, and diminishing physical affection. Lastly, the Autonomy domain includes aspects related to problems maintaining self-independence and control issues. Participants were instructed to report to their latest breakup when answering this measure, rating each reason according to how much it contributed to the breakup (e.g., '*Lack of time together*'). The Cronbach alpha values for the BRS categories were as following: Intimacy, $\alpha = .81$; Affiliation, $\alpha = .82$; Sexuality, $\alpha = .82$; and Autonomy, $\alpha = .72$.

4.4.3 Procedure

Data from this sample was collected online, where participants volunteered to complete the questionnaires on an online platform. No compensation was offered in return for participation and participants were given debrief information upon completing the questionnaires.

4.4.4 Statistical analysis

Descriptive statistics were produced for the PID-5 domains and trait facets, Satisfaction scores, Intimacy domain scores and Break Up Reasons dimensions. Pearson zero-order correlations between the PID-5 trait domains and trait facets and relational variables were calculated and interpreted according to Cohen's *r* effect sizes (Cohen, 2009; .10 small, .30 medium and .50 large). Type I error rate was adjusted using a Bonferroni correction, with the conventional $\alpha = .05$ being divided by the number of tests.

Multiple linear regressions were also employed to predict relationship variables (Relationship Length, Last Relationship Length and Single Time). A quasi-Poisson regression with robust standard error estimation was conducted to predict the Number of Relationships from the PID-5 domains. A quasi-Poisson model allows for a better modelling of an overdispersed count variable and robust standard errors for parameter estimates control mild violation of the distribution assumption that the variance equals

the mean (Cameron & Trivedi, 2009). Significance values and 95% confidence intervals were also computed. Analyses were conducted in R version 3.6.1 (R Core Team, 2019), using the *lm()* function for regression modelling, specifying the quasi-Poisson family when appropriate, as well as the package *sandwich* (Zeileis, 2006) to calculate robust estimates and confidence intervals.

For the analyses regarding the relationship of the PID-5 trait domains with Satisfaction and Intimacy domains, participants that were single were excluded from the analyses, as they were responding in relation to a previous relationship when filling out the measures. Independent sample t-tests confirmed that these participants reported significantly lower scores for Satisfaction and all the Intimacy domains, with all $p < .001$. In total, excluding as well those who had never been in a relationship, the total amount of participants for these analyses was $N = 211$. Multiple regressions were then conducted to predict Intimacy Domain scores from the PID-5 trait domains and from the trait facets, controlling for age and with predictors entered simultaneously. Equally, multiple regression analyses were conducted to evaluate if the Satisfaction scores were significantly predicted by the PID-5 trait domains and trait facets, controlling for age and with predictors entered simultaneously. Percent contributions were calculated to inspect the percentage of variance explained for each predictor, alongside with Relative Importance, a method of averaging sequential sums of squares over all orderings of regressors, which is deemed more appropriate for observational data with correlated predictors (Lindeman, Merenda, & Gold, 1980). Analyses were conducted in R version 3.6.1 (R Core Team, 2019), using the *lm()* function for linear regression modeling, *relaimpo* (Grömping, 2006) for Relative Importance analyses, and regression outputs were produced using the package *stargazer* (Marek, 2018).

A Structural Equation Modelling (SEM) analysis on the data to inspect the mediation effect of Intimacy in the relationship between Personality and Satisfaction was conducted using the package *lavaan* (Rosseel, 2012) in R 3.6.1 using a Maximum Likelihood parameter estimation. Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and Standardized Root Mean Square Residual (SRMSR) were used to assess model fit and interpreted as per the recommendation of Hu and Bentler (1990) for SEM: CFI and TLI ≥ .90, and SRMSR < .08. The significance of the indirect effect was tested using bootstrapping procedures, where unstandardized direct effects were computed for each of 1,000 bootstrapped samples, with 95% confidence intervals computed by

determining indirect effects at the 2.5[th] and 97.5[th] percentiles. A diagram was plotted using the package *semPlot* (Epskamp, 2019).

4.5 Results

4.5.1 Descriptive statistics and zero-order correlations

The table 4.1 below shows the descriptive statistics and Cronbach's alpha (α) for the PID-5 domains, Satisfaction, Intimacy domains, and Breakup Reasons factors for the whole sample.

Table 4.1 – *Means, standard deviations and Cronbach's alphas for the PID-5 trait domains and facets, CSI Satisfaction, PAIR Intimacy domains, and Breakup reasons factors*

	M	*SD*	*α*		*M*	*SD*	*α*
Negative Affect	1.29	0.46	.72	**Disinhibition**	1.11	0.39	.72
Anxiousness	1.52	0.80	.85	Distractibility	1.40	0.82	.89
Emotional Lability	1.11	0.79	.86	Impulsivity	0.96	0.70	.83
Hostility	0.88	0.74	.85	Irresponsibility	0.56	0.54	.68
Preservation	1.09	0.69	.78	Rigid Perfect.	1.90	0.77	.83
Restricted Affectivity	2.11	0.75	.84	Risk Taking	0.75	0.64	.82
Separation Insecurity	1.10	0.81	.82				
Submissiveness	1.23	0.64	.81	**Psychoticism**	0.72	0.56	.76
				Eccentricity	1.33	0.87	.89
Detachment	0.69	0.54	.81	Perceptual Dys.	0.31	0.46	.69
Anhedonia	0.76	0.76	.89	Unusual Beliefs	0.53	0.64	.73
Depressivity	0.57	0.73	.90				
Intimacy Avoidance	0.56	0.65	.82	Satisfaction	3.49	1.15	.91
Suspiciousness	0.72	0.61	.69				
Withdrawal	0.86	0.75	.86	Emotional Int.	3.76	0.93	.86
				Social Int.	3.35	0.89	.73
Antagonism	0.70	0.49	.80	Sexual Int.	3.73	0.94	.83
Attention Seeking	1.08	0.77	.89	Intellectual Int.	3.83	0.87	.81
Callousness	0.31	0.51	.85	Recreational Int.	3.84	0.77	.76
Deceitfulness	0.67	0.64	.79				
Grandiosity	0.53	0.64	.82	Intimacy Issues	2.16	0.74	.81
Manipulativeness	0.92	0.69	.82	Affiliation Issues	2.06	0.75	.82
				Sexuality Issues	1.96	0.92	.82
				Autonomy Issues	1.97	1.01	.72

Table 4.2 below summarizes the correlations between the PID-5 trait domains and the relationship variables of Satisfaction, Intimacy and Break Up Reasons for the whole sample. Detachment was significantly and negatively correlated with all the Intimacy domain scores as well as Satisfaction scores, with effect sizes ranging from -.27 (with Sexual Intimacy) to -.40 (with the total relationship Satisfaction score). Disinhibition was also found to be weakly ($r = -.17$) and negatively correlated with the Satisfaction score, as well as with the Intellectual Intimacy domain. A positive and weak correlation between the Intimacy Issues from the BRS and Disinhibition was also found.

Table 4.2 – *Zero-order correlations between the PID-5 trait domains and CSI Satisfaction, PAIR Intimacy domains, and Breakup reasons factors.*

	Negative Affect		Detachment		Antagonism		Disinhibition		Psychoticism	
	r	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*
Satisfaction	-.13	.02	**-.40**	**< .001**	-.07	.23	**-.17**	**< .001**	-.03	.57
PAIR										
Emotional	-.19	> .001	**-.36**	**< .001**	-.09	.12	-.16	.01	-.10	.07
Social	-.04	.48	**-.34**	**< .001**	-.06	.32	-.09	.13	-.07	.19
Sexual	-.09	.11	**-.27**	**< .001**	.07	.26	-.03	.66	-.09	.11
Intellectual	-.15	.01	**-.30**	**< .001**	-.12	.04	**-.17**	**< .001**	-.08	.19
Recreational	-.07	.22	**-.32**	**< .001**	-.08	.15	-.07	.24	.01	.81
BRS										
Intimacy	.12	.03	.09	.12	.12	.04	**.17**	**< .001**	.10	.10
Affiliation	-.04	.49	-.05	.38	.04	.44	.03	.57	.00	.97
Sexuality	.01	.80	.01	.85	.09	.13	.09	.11	.02	.70
Autonomy	**.18**	**< .001**	.03	.65	.04	.48	.11	.05	.16	.01

Note: r = Pearson's effect size; significant correlations at .001 highlighted in bold

4.5.2 PID-5 and relational variables

Results also showed a moderate positive significant correlation between the Number of Relationships and Age, $r = .335$, $N = 297$, $p < .001$, therefore the correlations between the Number of Relationships and the PID-5 domains and traits were calculated controlling for age. The following were significant: Number of Relationships and Detachment, $r = -.15$, $N = 306$, $p = .007$; Restricted Affectivity, $r = .145$, $N = 306$, $p = .011$; Submissiveness, $r = -.11$, $N = 306$, $p = .039$; Depressivity, $r = -.13$, $N = 306$, $p = $

.022; Intimacy Avoidance, $r = -.17$, $N = 306$, $p = .002$; Withdrawal, $r = -.13$, $N = 306$, $p = .022$; and Unusual Beliefs and Experiences, $r = .12$, $N = 306$, $p = .03$.

Relationship Length (for participants in a current relationship) correlated moderately and negatively with Separation Insecurity, $r = -.17$, $N = 210$, $p = .012$. Past Relationship Length (for Single participants) correlated moderately and positively with Withdrawal, $r = .25$, $N = 86$, $p = .017$. No other significant relationships were found.

Lastly, Single Time (for single participants) was also found to be correlated with the following PID-5 domains and traits: Detachment, $r = .33$, $N = 87$, $p = .002$; Hostility, $r = .274$, $N = 87$, $p = .010$; Anhedonia, $r = .35$, $N = 87$, $p = .001$; Intimacy Avoidance, $r = .35$, $N = 87$, $p = .001$; Withdrawal, $r = .41$, $N = 87$, $p < .001$.

A regression predicting Relationship Length from PID-5 domains was non-significant, $F (5, 204) = 1.080$, $p = .373$. Similarly, a regression predicting Last Relationship Length from PID-5 domains was non-significant, $F (5, 80) = .692$, $p = .692$, p = .631.

A quasi-Poisson regression with robust standard error estimation was conducted to predict the Number of Relationships from the PID-5 trait domains. Detachment and Psychoticism are associated with having fewer relationships, whereas age is associated with having more. Regression coefficients, standard errors, Wald test statistics and significance values are displayed on Table 4.3 below.

Table 4.3 – *Summary of quasi-Poisson regression analysis for number of relationships predicted from the PID-5 trait domains.*

	β	Robust SE	Lower CI	Upper CI	Wald	p
(Intercept)	**0.52**	**0.19**	**0.14**	**0.90**	**3.53**	**< .001**
Age	**0.03**	**0.00**	**0.02**	**0.03**	**9.88**	**< .001**
Negative Affect	0.12	0.09	-0.05	0.30	1.60	0.11
Detachment	**-0.35**	**0.12**	**-0.58**	**-0.11**	**-5.17**	**< .001**
Antagonism	0.05	0.15	-0.25	0.34	0.66	0.51
Disinhibition	-0.12	0.13	-0.37	0.12	-1.35	0.18
Psychoticism	**0.20**	**0.17**	**-0.14**	**0.55**	**3.27**	**< .001**

Note: β = standardized coefficient; SE = standard error; CI = confidence interval; significant predictors in bold

Equally, a quasi-Poisson regression was conducted to predict the number of relationships from the PID-5 trait facets, although the only predictor found to be significant was Age. A regression to predict Single Time (i.e., how long participants had been single for) from the PID-5 trait domains was significant, explaining 31% of the variance, $F(7, 81) = 6.72$, $p < .05$. Detachment and Age were significant positive predictors of Single Time. Regression coefficients and standard errors can be found on Table 4.4 below.

Table 4.4 – *Summary of multiple regression analysis for single time from the PID-5 trait domains.*

	Single Time β (SE)
Age	**3.195**[**] (0.597)
Gender	-1.640 (11.114)
Negative Affect	-6.112 (14.336)
Detachment	**24.820**[*] (10.778)
Antagonism	7.220 (12.832)
Disinhibition	-2.550 (15.133)
Psychoticism	-11.350 (11.534)
Constant	**-63.233**[**] (25.993)
Observations	89
R^2	0.368
Adjusted R^2	0.313
Residual Std. Error	46.860 (df = 81)
F Statistic	**6.725**[**] (df = 7; 81)

Note: β = standardized coefficient; SE = standard error; [*]$p < .05$; [**]$p < .01$

A linear regression was conducted to predict Single Time from the PID-5 trait facets. The regression model was significant and explained 42% of the variance. Age, Anhedonia and Withdrawal were positive predictors of Single Time, whereas Suspiciousness and Distractibility were negative predictors. Regression coefficients and standardized errors are displayed on Table 4.5 (below).

Table 4.5 – *Summary of multiple regression analysis for single time from the PID-5 trait facets.*

	Singe Time β (SE)
Age	**2.310** (0.695)
Gender	3.638 (13.328)
Anxiousness	0.095 (9.701)
Emotional Lability	2.140 (10.563)
Hostility	-2.586 (10.622)
Perseveration	9.417 (12.325)
Restricted Affectivity	5.551 (8.769)
Separation Insecurity	11.907 (8.628)
Submissiveness	7.647 (9.434)
Anhedonia	**30.104** (12.730)
Depressivity	-27.241 (13.006)
Intimacy Avoidance	6.898 (8.863)
Suspiciousness	**-28.583** (13.693)
Withdrawal	**35.223** (10.256)
Attention Seeking	3.902 (9.131)
Callousness	10.638 (11.642)
Deceitfulness	12.188 (12.525)
Grandiosity	-9.083 (11.728)
Manipulativeness	2.363 (11.326)
Distractibility	**-20.663** (10.063)
Impulsivity	14.198 (10.464)
Irresponsibility	-15.980 (13.378)
Rigid Perfectionism	-5.074 (7.866)
Risk Taking	0.702 (11.802)
Eccentricity	-9.585 (8.712)
Perceptual Dysreg.	-14.888 (18.701)
Unusual Beliefs	20.365 (14.501)
Constant	**-76.949** (40.530)
Observations	89
R^2	0.600
Adjusted R^2	0.422
Residual Std. Error	42.961 (df = 61)
F Statistic	**3.384** (df = 27; 61)
Note:	$^* p < .05; ^{**} p < .01$

A logistic regression was performed to examine the effects of Negative Affectivity, Detachment, Antagonism, Disinhibition and Psychoticism on the likelihood that participants were in a relationship. The logistic regression model was statistically significant, $\chi^2(5) = 21.963$, $p = .001$. The model explained 10.2% (Nagelkerke R^2) of the variance of the relationship status. Of the five predictor variables, only Detachment was statistically significant. An increase in Detachment was associated with a reduction in the likelihood of being in a relationship, $e^B = .130$. In another words, for each unit reduction in Detachment, the odds of being in a relationship increase by a factor of 7.69. Results can be found in the Table 4.6 below.

Table 4.6– *Logistic regression on the PID-5 trait domains and Being in a Relationship*

	B	**SE**	*Wald*	*p*	**Exp(B)**
Negative Affectivity	-.279	.349	.641	.423	.756
Detachment	**1.279**	**.305**	**17.556**	**< .001**	**3.593**
Antagonism	.185	.308	.360	.548	1.203
Disinhibition	.272	.400	.461	.497	1.312
Psychoticism	-.354	.300	1.391	.238	.702
Constant	-1.651	.504	10.736	.001	.192

Note: B = regression coefficients; SE = standard error; Exp(B) = odds ratio

4.5.3 PID-5 and Satisfaction

Table 4.7 (below) depicts the correlations between Satisfaction and the PID-5 trait domains and trait facets. The strongest correlation between the PID-5 trait domains and Satisfaction is the one between the latter and Detachment (moderate and negative). As for the 25 personality trait facets, at $p < .001$, Satisfaction was negatively correlated with Anhedonia, Depressivity, and Intimacy Avoidance, with effect sizes ranging from -.26 (Depressivity) to -.48 (Intimacy Avoidance).

Table 4.7 – *Zero-order correlations between Satisfaction and PID-5 trait domains and trait facets*

	Satisfaction
Anxiousness	-.04
Emotional Lability	-.12
Hostility	-.13
Perseverance	**-.18****
Restricted Affectivity	.02
Separation Insecurity	-.04
Submissiveness	-.08
Anhedonia	**-.29*****
Depressivity	**-.26*****
Intimacy Avoidance	**-.48*****
Suspiciousness	-.12
Withdrawal	**-.19****
Attention Seeking	.06
Callousness	.08
Deceitfulness	-.05
Grandiosity	.01
Manipulativeness	.00
Distractibility	**-.14***
Impulsivity	-.11
Irresponsibility	**-.15***
Rigid Perfectionism	-.06
Risk Taking	.01
Eccentricity	.05
Perceptual Dysregulation	-.02
Unusual Beliefs	-.02
Negative Affect	-.13
Detachment	**-.34*****
Antagonism	.02
Disinhibition	**-.17***
Psychoticism	.02

Note: $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

A regression to predict Satisfaction from the PID-5 trait domains was found significant, *Adjusted R^2* = .24, $F(6, 204) = 12.05$, $p < .001$. Detachment was a significant negative predictor, $\beta = -.823$, $p < .01$, Disinhibition was a significant negative predictor, $\beta = -.504$, $p < .01$, and Psychoticism was a significant positive predictor, $\beta = .459$, $p < .01$. Regression coefficients and standard errors can be found in Table 4.8 below.

Table 4.8 – *Summary of multiple regression analysis for Satisfaction from the PID-5 trait domains*

	Satisfaction β (SE)
Age	**-0.028**[**] (0.006)
Negative Affect	-0.099 (0.141)
Detachment	**-0.823**[**] (0.140)
Antagonism	0.125 (0.129)
Disinhibition	**-0.504**[**] (0.168)
Psychoticism	**0.459**[**] (0.125)
Constant	**5.499**[**] (0.294)
Observations	211
R^2	0.262
Adjusted R^2	0.240
Residual Std. Error	0.799 (df = 204)
F Statistic	**12.047**[***] (df = 6; 204)

Note:	$^*p < .05$; $^{**}p < .01$

Table 4.9 (below) displays the Percent Contributions and Relative Importance percentages for each of the predictors of Satisfaction. Detachment had the highest relative importance (47.67%) in the model, being the most relevant predictor, followed by Age (27.24%), Disinhibition (10.88%) and Psychoticism (9.47%).

Table 4.9 – *Relative Importance, sum of squares and percentage contribution of the predictors of Satisfaction*

Satisfaction	Relative Importance (%)	Sum of Squares	% Contribution
Age	27.24%	10.69	6.06
Negative Affect	4.20%	5.50	3.12
Detachment	46.67%	17.02	9.66
Antagonism	1.54%	0.96	0.55
Disinhibition	10.88%	3.41	1.94
Psychoticism	9.47%	8.52	4.84

A regression predicting Satisfaction from the PID-5 trait facets was conducted. The model explained 32% of the variance and was significant, $F(26, 184) = 4.80$, $p < .01$. Regression coefficients and standard errors can be found on Table 4.10 below. Age and Intimacy Avoidance were negative predictors of Satisfaction in this model.

Table 4.10 – *Summary of multiple regression analysis for Satisfaction from the PID-5 trait facets*

	Satisfaction
Age	**-0.019**[**] (0.006)
Anxiousness	0.067 (0.099)
Emotional Lability	0.111 (0.113)
Hostility	-0.075 (0.100)
Perseveration	-0.190 (0.122)
Restricted Affectivity	-0.177 (0.099)
Separation Insecurity	-0.112 (0.089)
Submissiveness	0.074 (0.097)
Anhedonia	-0.191 (0.144)
Depressivity	-0.179 (0.144)
Intimacy Avoidance	**-0.921**[**] (0.147)
Suspiciousness	0.111 (0.127)
Withdrawal	-0.059 (0.101)
Attention Seeking	-0.011 (0.100)
Callousness	0.291 (0.164)
Deceitfulness	-0.186 (0.135)
Grandiosity	0.014 (0.131)
Manipulativeness	-0.067 (0.129)
Distractibility	-0.031 (0.081)
Impulsivity	-0.140 (0.108)
Irresponsibility	0.029 (0.132)
Rigid Perfectionism	-0.131 (0.083)
Risk Taking	0.028 (0.122)
Eccentricity	0.162 (0.092)
Perceptual Dysreg.	0.063 (0.183)
Unusual Beliefs	0.063 (0.127)
Constant	**5.671**[**] (0.413)
Observations	211
R^2	0.404
Adjusted R^2	0.320
Residual Std. Error	0.755 (df = 184)
F Statistic	**4.804**[**] (df = 26; 184)
Note:	[*]$p < .05$; [**]$p < .01$

4.5.4 PID-5 and Intimacy

Table 4.11 below depicts the correlations between the Intimacy domains and the PID-5 trait domains and trait facets. At a significance alpha of .001, Detachment yielded moderate and negative correlations with all the Intimacy domains, with effect sizes ranging from -.27 (Intellectual and Recreational Intimacy) to -.31 (Emotional Intimacy). The correlations between the Intimacy domains and the 25 PID-5 trait facets were also inspected and are shown in the table below. Intimacy Avoidance, a trait facet encompassed by the Detachment trait domain, yielded the strongest correlations with Intimacy domains.

Table 4.11 – *Zero-order correlations between the Intimacy domains and the PID-5 personality trait domains and trait facets*

	Emotional Intimacy	Social Intimacy	Sexual Intimacy	Intellectual Intimacy	Recreational Intimacy
Negative Affect	**-.17***	-.02	**-.14***	**-.15***	-.11
Anxiousness	-.07	.00	-.01	-.06	-.02
Emotional Lab.	**-.15***	-.12	-.12	**-.15***	-.12
Hostility	**-.18****	-.09	**-.14***	-.13	**-.15***
Perseverance	**-.21****	-.09	**-.19****	**-.15***	**-.17***
Restricted Aff.	.06	.11	.02	.03	.09
Separation Insec.	-.08	-.01	-.02	-.07	-.06
Submissiveness	-.13	.10	**-.16***	-.11	-.05
Detachment	**-.31*****	**-.30*****	**-.27*****	**-.25*****	**-.25*****
Anhedonia	**-.26*****	**-.15***	**-.18****	**-.20****	**-.23*****
Depressivity	**-.26*****	-.07	**-.19****	**-.18***	-.13
Intimacy Avoid.	**-.43*****	**-.37*****	**-.33*****	**-.36*****	**-.29*****
Suspiciousness	-.12	**-.22****	**-.14***	**-.17***	-.13
Withdrawal	**-.16***	**-.35*****	**-.20****	-.10	**-.18****
Antagonism	.00	-.03	.11	-.07	-.06
Att. Seeking	.01	**.17***	.08	-.01	.05
Callousness	.08	-.13	.07	.00	.00
Deceitfulness	-.03	-.11	.00	-.10	-.12
Grandiosity	-.01	-.03	**.15***	-.06	-.06
Manipulativeness	-.03	-.08	.10	-.08	-.11
Disinhibition	**-.15***	-.09	-.07	**-.20****	-.13
Distractibility	**-.15***	-.13	-.08	**-.15***	-.12
Impulsivity	-.11	-.07	-.05	**-.19****	-.10
Irresponsibility	-.13	**-.16***	-.13	-.12	**-.14***
Rigid Perfec.	.00	.09	-.04	-.05	-.04
Risk Taking	.00	.02	.10	-.03	.04
Psychoticism	-.04	**-.15***	-.11	-.05	.04
Eccentricity	.03	-.11	-.07	-.01	.04
Perceptual DyS..	-.10	-0.10	**-.14***	-.05	.05
Unusual Beliefs	-.07	**-.16***	-.11	-.08	.02

*Note: * $p < .05$; ** $p < .01$; *** $p < .001$*

A series of multiple regressions to predict each Intimacy domain from the PID-5 trait domains was conducted, with results summarized in Table 4.12 below. All the models were statistically significant, with percentages of variance explained ranging from 8.9% (Social Intimacy model) to 17.9% (Sexual Intimacy model). Detachment was a negative predictor in all the models, being a particular strong negative predictor of Social Intimacy. Disinhibition was found to be a negative predictor of Emotional Intimacy and Intellectual Intimacy, whereas Psychoticism positively predicted Emotional Intimacy, Intellectual Intimacy and Recreational Intimacy.

	Emotional Intimacy	Social Intimacy	Sexual Intimacy	Intellectual Intimacy	Recreational Intimacy
	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)
Age	**-0.021****	-0.006	**-0.032****	**-0.025****	**-0.016****
	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
Negative Affect	-0.182	**0.272***	-0.195	-0.139	-0.081
	(0.131)	(0.148)	(0.142)	(0.130)	(0.113)
Detachment	**-0.572****	**-0.650****	**-0.448****	**-0.451****	**-0.479****
	(0.131)	(0.147)	(0.141)	(0.129)	(0.113)
Antagonism	0.085	0.017	**0.358*****	-0.006	-0.083
	(0.120)	(0.135)	(0.130)	(0.119)	(0.104)
Disinhibition	**-0.313***	-0.120	-0.190	**-0.433****	-0.264
	(0.157)	(0.177)	(0.169)	(0.155)	(0.135)
Psychoticism	**0.264***	-0.040	-0.034	**0.247***	**0.356****
	(0.117)	(0.132)	(0.126)	(0.116)	(0.101)
Constant	**5.302****	**3.911****	**5.315****	**5.533****	**4.978****
	(0.274)	(0.309)	(0.296)	(0.271)	(0.237)
Observations	211	211	211	211	211
R^2	0.181	0.115	0.202	0.180	0.160
Adjusted R^2	0.157	0.089	0.179	0.156	0.136
Resid SE (df = 204)	0.744	0.838	0.802	0.736	0.642
F (df = 6; 204)	**7.518****	**4.410****	**8.613****	**7.484****	**6.495****

Note: *β = Standardized coefficient; SE = Standard Error; $^{*}p < .05$; $^{**}p < .01$*

Table 4.13 (below) displays the Percent Contributions and Relative Importance percentages for each of the predictors of each Intimacy domain. Detachment stood out as the predictor with the highest relative importance in all the models, with the exception of the Sexual and Intellectual Intimacy model, in which Age had a higher relative importance.

Table 4.13 – *Relative Importance, sum of squares and percentage contribution of the predictors of Intimacy domains*

Emotional Intimacy	Relative Importance (%)	Sum of Squares	% Contribution
Age	26.58%	5.31	3.86%
Negative Affect	10.28%	6.14	4.46%
Detachment	47.30%	8.90	6.46%
Antagonism	1.06%	0.38	0.27%
Disinhibition	9.25%	1.38	1.00%
Psychoticism	5.53%	2.83	2.06%

Social Intimacy	Relative Importance (%)	Sum of Squares	% Contribution
Age	4.36%	0.70	0.43%
Negative Affect	6.89%	0.20	0.12%
Detachment	76.39%	17.20	10.62%
Antagonism	0.39%	0.03	0.02%
Disinhibition	3.41%	0.40	0.25%
Psychoticism	8.57%	0.07	0.04%

Sexual Intimacy	Relative Importance (%)	Sum of Squares	% Contribution
Age	47.67%	13.98	8.49%
Negative Affect	6.76%	6.03	3.67%
Detachment	28.08%	8.16	4.96%
Antagonism	11.73%	4.12	2.50%
Disinhibition	2.42%	0.93	0.56%
Psychoticism	3.34%	0.05	0.03%

Intellectual Intimacy	Relative Importance (%)	Sum of Squares	% Contribution
Age	39.04%	8.02	5.94%
Negative Affect	6.75%	4.94	3.66%
Detachment	30.28%	5.70	4.22%
Antagonism	0.92%	0.06	0.04%
Disinhibition	18.42%	3.16	2.34%
Psychoticism	4.58%	2.48	1.84%

Recreational Intimacy	Relative Importance (%)	Sum of Squares	% Contribution
Age	24.27%	3.29	3.28%
Negative Affect	5.02%	2.11	2.10%
Detachment	42.43%	4.81	4.80%
Antagonism	1.83%	0.06	0.06%
Disinhibition	9.83%	0.67	0.67%
Psychoticism	16.62%	5.13	5.12%

Equally, a series of multiple regression models were conducted to predict each Intimacy domain from the 25 PID-5 trait facets. All models were statistically

significant, with Adjusted R^2 ranging from .15 (Recreational Intimacy) to .23 (Emotional Intimacy). At a significance level of .01, Intimacy Avoidance was a significant negative predictor of all Intimacy domains, and a particularly strong one in the Emotional Intimacy model. It is also noteworthy that Withdrawal was a negative predictor in the Social Intimacy model. Regression coefficients and standardized errors are displayed in Table 4.14 below.

Table 4.14 – *Summary of the multiple regressions predicting Intimacy Domains from the PID-5 trait facets*

	Emotional Intimacy	Social Intimacy	Sexual Intimacy	Intellectual Intimacy	Recreational Intimacy
	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)
Age	**-0.012**[*]	-0.002	**-0.027**[**]	**-0.018**[**]	**-0.012**[*]
	(0.006)	(0.006)	(0.007)	(0.006)	(0.005)
Anxiousness	0.083	0.143	**0.203**[*]	0.025	0.066
	(0.093)	(0.102)	(0.103)	(0.096)	(0.083)
Emotional Lability	0.022	-0.050	-0.013	0.003	0.036
	(0.107)	(0.117)	(0.118)	(0.110)	(0.096)
Hostility	-0.143	0.083	-0.102	0.004	-0.068
	(0.094)	(0.103)	(0.104)	(0.097)	(0.084)
Perseveration	**-0.192**[*]	0.062	-0.117	-0.092	-0.167
	(0.115)	(0.126)	(0.127)	(0.118)	(0.103)
Restricted Affectivity	-0.059	-0.013	-0.010	-0.044	-0.010
	(0.093)	(0.103)	(0.103)	(0.096)	(0.084)
Separation Insecurity	-0.098	-0.059	-0.032	-0.050	-0.088
	(0.083)	(0.092)	(0.092)	(0.086)	(0.075)
Submissiveness	0.001	0.122	-0.121	-0.047	0.069
	(0.091)	(0.100)	(0.101)	(0.094)	(0.082)
Anhedonia	-0.076	0.071	-0.067	-0.122	-0.227
	(0.136)	(0.149)	(0.150)	(0.140)	(0.122)
Depressivity	-0.183	0.232	0.007	-0.029	0.150
	(0.136)	(0.149)	(0.150)	(0.140)	(0.122)
Intimacy Avoidance	**-0.725**[**]	**-0.542**[**]	**-0.450**[**]	**-0.601**[**]	**-0.326**[**]
	(0.138)	(0.152)	(0.153)	(0.143)	(0.124)
Suspiciousness	0.170	-0.234	-0.029	-0.059	-0.016
	(0.119)	(0.131)	(0.132)	(0.123)	(0.107)
Withdrawal	0.003	**-0.326**[**]	-0.114	0.053	-0.067
	(0.095)	(0.104)	(0.105)	(0.098)	(0.085)
Attention Seeking	-0.044	0.155	-0.052	-0.003	0.084
	(0.095)	(0.104)	(0.105)	(0.098)	(0.085)

Callousness	0.229	-0.022	0.094	0.046	0.198
	(0.154)	(0.169)	(0.170)	(0.159)	(0.138)
Deceitfulness	-0.035	-0.170	-0.269	-0.107	-0.089
	(0.127)	(0.140)	(0.141)	(0.131)	(0.114)
Grandiosity	-0.020	0.039	**0.274***	0.004	-0.031
	(0.123)	(0.135)	(0.136)	(0.127)	(0.110)
Manipulativeness	-0.108	-0.026	0.172	-0.062	-0.180
	(0.121)	(0.133)	(0.134)	(0.125)	(0.109)
Distractibility	-0.045	-0.097	-0.007	-0.037	-0.023
	(0.076)	(0.084)	(0.085)	(0.079)	(0.069)
Impulsivity	-0.082	-0.136	-0.046	-0.204	-0.131
	(0.102)	(0.112)	(0.113)	(0.105)	(0.091)
Irresponsibility	0.121	-0.160	0.031	0.081	-0.060
	(0.124)	(0.137)	(0.137)	(0.128)	(0.111)
Rigid Perfectionism	-0.087	0.053	-0.110	-0.124	-0.104
	(0.078)	(0.086)	(0.086)	(0.080)	(0.070)
Risk Taking	0.065	**0.267***	0.148	0.098	0.138
	(0.115)	(0.127)	(0.127)	(0.119)	(0.103)
Eccentricity	**0.186***	0.049	0.001	0.111	0.078
	(0.087)	(0.096)	(0.096)	(0.090)	(0.078)
Perceptual Dysreg.	-0.140	0.098	-0.324	0.063	0.103
	(0.172)	(0.190)	(0.191)	(0.178)	(0.155)
Unusual Beliefs	-0.035	-0.096	0.013	-0.039	0.097
	(0.120)	(0.132)	(0.132)	(0.124)	(0.107)
Constant	**5.187****	**3.663****	**5.256****	**5.484****	**4.972****
	(0.388)	(0.427)	(0.430)	(0.401)	(0.349)
Observations	211	211	211	211	211
R^2	0.326	0.306	0.308	0.266	0.253
Adjusted R^2	0.231	0.208	0.210	0.162	0.147
Residual SE (df = 184)	0.710	0.782	0.786	0.734	0.638
F (df = 26; 184)	**3.424****	**3.117****	**3.153****	**2.564****	**2.393****

Note: $^*p<.05; ^{**}p<.01$

4.5.5 Mediation analysis using Structural Equation Modelling (SEM)

A Structure Equation Modelling approach was undertaken on 306 observations (no missing data) to model the mediation effect of Intimacy in the relationship between maladaptive personality and satisfaction in a romantic relationship. The hypothesized mediation model is displayed on Figure B below.
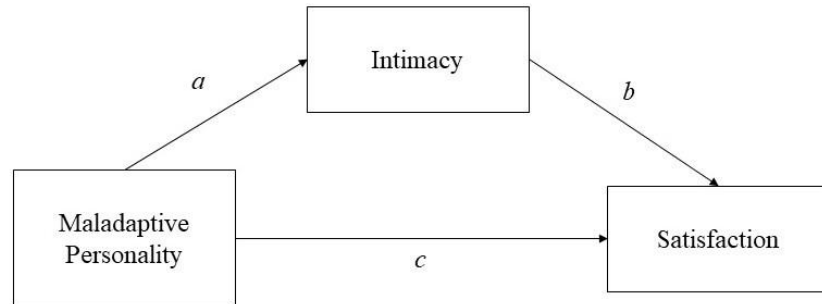
Figure B – *Hypothesized mediation model between Maladaptive Personality and Satisfaction*

The hypothesized model was built with three latent constructs: Maladaptive Personality (measured by the observed scores of Negative Affectivity, Detachment, Antagonism, Disinhibition and Psychoticism), Intimacy (measured by the observed scores of Emotional, Social, Intellectual, Sexual and Recreational intimacy domains), and Satisfaction (measured by the observed score of Satisfaction). As Satisfaction was a single-indicator latent factor comprised by one observed variable, the error variance was pre-specified (Kline, 2011). Additionally, the regression models with mediation effects were added to the model.

The Comparative Fit Index (CFI) was .91, the Tucker-Lewis Fit Index (TLI) was .90 and the Standardized Root Mean Square Residual (SRMSR) was .07, indicating an adequate fit between the model and the observed data. Table 4.15 below displays the estimates (all significant at $p < .001$), standard errors, Wald statistic and significance values, and standardized coefficients for the manifest variables in the model. Unit loading identification (ULI) constraint was applied to constrain the loading of one indicator on each factor to 1 (Kline, 2011).

Table 4.15 – *Estimates, standard errors, Wald statistic, p values and standardized estimates for the structural model*

	Estimate	SE	Wald	*p*	Standardized Estimates
Maladaptive Personality					
Negative Affectivity	1.00				0.28
Detachment	1.17	0.16	7.50	< .001	0.32
Antagonism	0.92	0.14	6.79	< .001	0.25
Disinhibition	0.81	0.11	7.30	< .001	0.22
Psychoticism	1.35	0.17	7.94	< .001	0.37
Intimacy					
Emotional Intimacy	1.00				0.85
Social Intimacy	0.63	0.05	11.87	< .001	0.53
Sexual Intimacy	0.69	0.06	12.40	< .001	0.59
Intellectual Intimacy	0.89	0.04	21.93	< .001	0.75
Recreational Intimacy	0.70	0.04	17.65	< .001	0.60
Satisfaction					
Satisfaction	1.00				1.15

Note: SE = Standard error; *p* = significance level

Table 4.16 below displays the summaries for the regressions included in the model, as well as the mediation analysis estimates and standard errors.

Table 4.16 – *Regressions and mediation analysis in the model*

Regressions	Estimate	SE	Wald	*p*	Standardized Estimates
Satisfaction ~ Personality (c)	0.06	0.15	0.39	0.70	0.01
Intimacy ~ Personality (a)	-0.93	0.22	-4.13	**< .001**	-0.30
Satisfaction ~ Intimacy (b)	1.24	0.05	23.25	**< .001**	0.91

Mediation	Estimate	SE	Wald	*p*	Standardized Estimates
Indirect effect	-1.15	0.28	-4.09	**< .001**	-0.27
Total effect	-1.09	0.29	-3.77	**< .001**	-0.03

Note: SE = Standard error; *p* = significance level

The regression predicting Intimacy from maladaptive personality was significant ($p < .001$), with the latter being a negative predictor of Intimacy. Equally, the relationship between Satisfaction and Intimacy was positive and significant, with the latter significantly predicting the former. Conversely, the regression predicting Satisfaction from Personality was non-significant in this mediation model, but the

indirect effect and total effect were significant, which suggests a full mediation effect of Intimacy in the relationship between maladaptive Personality and Satisfaction. The significance of the indirect effect was tested using bootstrapping procedures: the bias-corrected bootstrapped unstandardized indirect effect was -1.15 (Standard Error = 0.32), 95% CI [-1.84, -0.60]. Figure C (below) displays these mediation effects graphically, and Figure C displays the whole structural model.
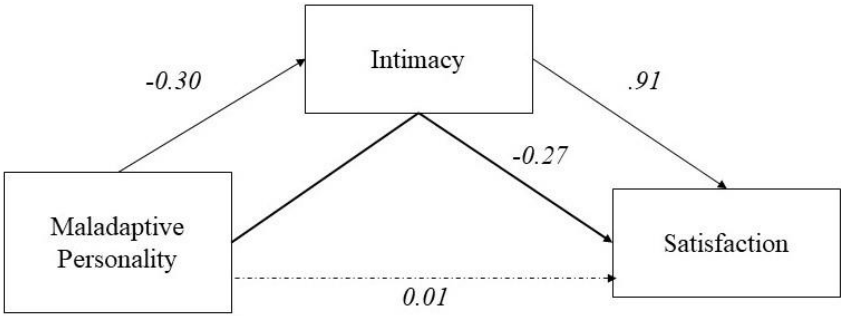
Figure C – *Mediation model between Maladaptive Personality and Satisfaction*
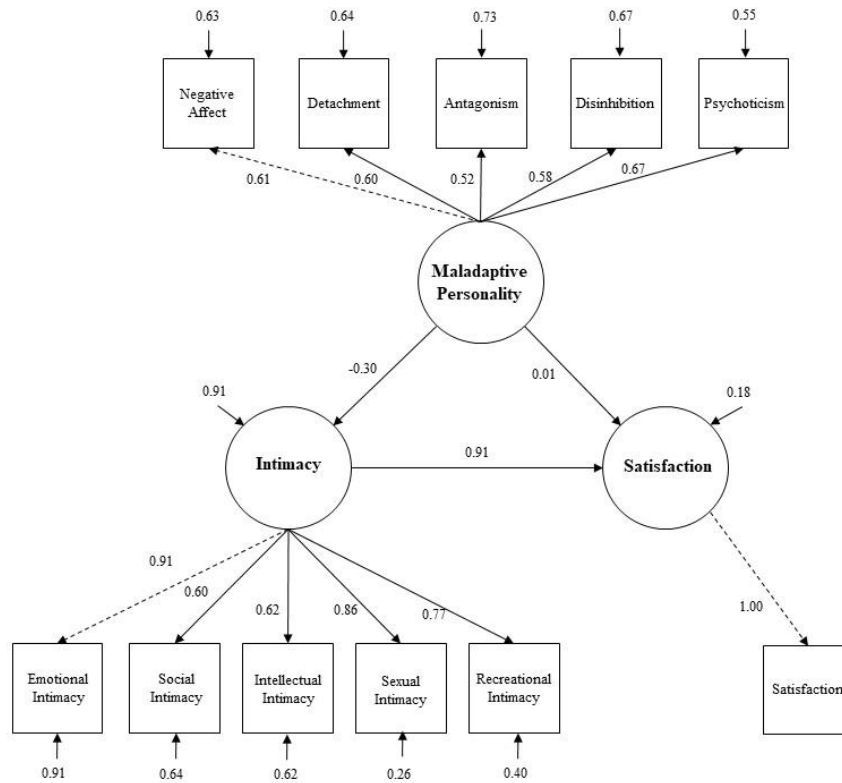
Figure D – *Structural model of maladaptive personality, intimacy and satisfaction*

4.5.6 PID-5 and Break Up Reasons

Correlations between the PID-5 trait domains and the Break Up Reasons were examined, as shown on table 4.17 below. The vast majority of the significant correlations were positive, with effect sizes that did not exceed .21 (Distractibility and Intimacy Issues). Some PID-5 trait domains yielded positive yet weak correlations with the Break Up Reasons domains, namely Negative Affectivity and Autonomy Issues, Disinhibition and Autonomy Issues, as well as Psychoticism and Autonomy Issues. The correlation between Disinhibition and Intimacy Issues was also significant at an alpha level of .01, yet had a small effect size.

Table 4.17 – *Zero-order correlations between the Break Up Reasons domains and the PID-5 trait domains and trait facets*

	Affiliation	Autonomy	Intimacy	Sexuality
Anxiousness	.02	**.18****	**.14***	.04
Emotional Lability	-.04	**.18****	**.15****	-.02
Hostility	-.03	.09	.07	.04
Perseverance	.01	**.19****	**.13***	.07
Restricted Affectivity	-.03	.07	.00	-.01
Separation Insecurity	-.08	.08	.05	-.03
Submissiveness	-.02	-.01	-.02	-.02
Anhedonia	.03	.01	.11	.04
Depressivity	-.02	-.02	.06	.01
Intimacy Avoidance	-.05	-.05	-.05	.00
Suspiciousness	-.06	**.17****	**.18****	-.03
Withdrawal	-.10	.00	.05	.00
Attention Seeking	.04	.11	**.16****	.07
Callousness	.02	-.04	.03	.05
Deceitfulness	.01	.04	**.12***	.05
Grandiosity	.04	-.01	.08	.05
Manipulativeness	.05	.03	.04	.09
Distractibility	.01	**.11***	**.21*****	.09
Impulsivity	.03	**.14***	**.16****	.10
Irresponsibility	.02	**.12***	**.12***	.09
Rigid Perfectionism	.01	**-.11***	**-.12***	-.06
Risk Taking	.03	.08	**.12***	.05
Eccentricity	-.02	.10	.07	.01
Perceptual Dysregulation	-.02	**.13***	.04	.00
Unusual Beliefs	.05	**.17****	**.13***	.05
Negative Affect	-.04	**.18****	**.12***	.01
Detachment	-.05	.03	.09	.01
Antagonism	.04	.04	**.12***	.09
Disinhibition	.03	**.11***	**.17****	.09
Psychoticism	.00	**.16****	.10	.02

$^{*}p < .05$; $^{**}p < .01$; *** $p < .001$

4.6 Discussion

Research with the Five-Factor Model has suggested some links between personality and length of relationship (e.g., Shaver & Brennan, 1992), but this study found only a negative and moderate association between Separation Insecurity and Relationship Length for those in a relationship. When assessing links between past relationship lengths and maladaptive personality, there were some positive moderate associations between Length and Detachment, as well as with Hostility, Anhedonia, Intimacy Avoidance and Withdrawal, the latter being the strongest one.

Regarding the number of relationships, a weak negative association with Detachment was found, but also with a few maladaptive personality trait facets, namely Submissiveness, Depressivity, Intimacy Avoidance, Withdrawal and Unusual Beliefs and Experiences. Furthermore, results suggested that Detachment and Psychoticism negatively predicted the number of relationships. Detachment was also found to be a positive predictor of how long participants had been single, as well as decreasing the odds of being in a relationship. As this domain is related to the avoidance of intimate and close relationships, it makes conceptual sense that Detachment traits would impact these relational variables. From these analyses it seems that personality is associated with some relationship variables, such as length and number of romantic relationships.

To further assess these links between personality and romantic relationships, we examined Satisfaction and Intimacy variables as well. Satisfaction was moderately and negatively correlated with Detachment and with Disinhibition, but also with some of the personality trait facets, such as Anhedonia, Intimacy Avoidance, Irresponsibility, and Distractibility. These results also align with research by Malouff et al. (2010) in which significant positive correlations between four of the Five-Factor Model (FFM) personality factors and the level of relationship satisfaction were found, namely low Neuroticism, high Conscientiousness, high Agreeableness and high Extraversion were correlated with satisfaction. As Detachment is the maladaptive variant of Extraversion, and Disinhibition the maladaptive variant of Conscientiousness, the negative associations found in our study match the ones found by Malouff et al. (2010). Moreover, studies by Botwin et al. (1997) and Nemechek and Olson (1999) also found that Extraversion was associated with greater satisfaction in romantic relationships, which also supports our findings of negative associations between Detachment and Satisfaction.

Furthermore, we also found Detachment to be a negative predictor of Satisfaction in a relationship, which seems to be aligned with research that shows that individuals perceived as more extraverted by their partners report higher levels of satisfaction (Shiota & Levenson, 2007). In particular, it was found in our study that Intimacy Avoidance (a trait facet belonging to the Detachment trait domain) was also a negative predictor of Satisfaction in a relationship. These results are also consistent with those found by Decuyper et al. (2018), in which Detachment had the most consistent negative associations with relationship satisfaction and adjustment. Furthermore, Disinhibition was also found to be a negative predictor of Satisfaction, which also matches the results of Decuyper et al. (2008). However, contrary to what was found in these authors' research, we did not find Negative Affectivity to be a significant predictor of Satisfaction in a relationship. In Decuyper et al. (2008)'s paper this relationship was particularly prevalent on their second study that included 12 clinical couples, which may have contributed to a higher variance in Negative Affectivity and had an impact on correlations and regression models. Notwithstanding, literature has previously established the negative influence of Neuroticism (e.g., Malouff et al., 2010) and Borderline Personality Disorder (Daley et al., 2000; Bouchard et al., 2009), characterized by high levels of emotional dysregulation, on satisfaction in relationships. Lastly, and in accordance to the results by Decuyper et al. (2008), Antagonism did not explain Satisfaction scores. The hypothesis that Antagonism would be negatively associated to relationship satisfaction was drawn from previous research using the FFM showing associations between low Agreeableness and dissatisfaction in romantic relationships. Both the results from this study and from the one conducted by Decuyper et al. (2008) did not show any associations between Antagonism and satisfaction. This suggests that the although the FFM and the DSM-5 dimensional model are related, this relationship is not a perfect fit and both models encompass unique aspects of personality. Another aspect to consider relates to a potential selection effect, as there is evidence that individuals with high levels of Antagonism are less likely to be in committed relationships (see Burt et al., 2010) and that could impact the way they answer the questions in the PAIR questionnaire, explaining the lack of significant findings.

Regarding the links between the PID-5 trait domains and the Intimacy domains, results showed that Detachment was negatively associated with all the Intimacy domains (Emotional Intimacy, Social Intimacy, Sexual Intimacy, Intellectual Intimacy and Recreational Intimacy), which makes conceptual sense as individuals who display Detachment traits avoid socio-emotional experiences and interpersonal interactions, including intimate relationships (American Psychiatric Association, 2013). Disinhibition was also found to be negatively associated with Intellectual Intimacy. Several negative associations between Intimacy and personality trait facets were also found, the strongest one being with Intimacy Avoidance. These results suggest that there is a clear negative association between Detachment features and Intimacy aspects of romantic relationships, which aligns with the research by White, Hendrick and Hendrick (2004), in which they found high levels of Extraversion (the adaptive variant of Detachment) to be positively associated with higher levels of Intimacy in relationships. Results also showed that Detachment negatively predicts all the Intimacy domains. Disinhibition was also found to be a negative predictor of Emotional and Intellectual Intimacy, and while other maladaptive personality domains were also found to be positive predictors of Intimacy (e.g., Psychoticism predicted Emotional, Intellectual and Recreational Intimacy domains), none explained as much variance as Detachment being a negative predictor. This robust association between Detachment and Intimacy also aligns with previous research which has found that elevated Cluster A symptoms (characterized by high Detachment levels) have a greater impact in dissatisfaction than Cluster B and Cluster C symptoms (Stroud et al., 2010) and have the most detrimental impact on quotidian interactions in intimate couples (South, 2014).

The results from the structural equation modelling approach confirmed that maladaptive personality has an impact on Intimacy and Satisfaction. This is a particularly notable finding, as in this model, maladaptive personality was measured by the five PID-5 trait domains. The confirmatory results from the model showed all of the trait domains significantly and adequately loading on a latent construct of maladaptive personality, which in turn, fully mediated by Intimacy, explained the Satisfaction scores. There are two main important things to note about these findings: firstly, the PID-5 trait domains seem to reliably and adequately encompass maladaptive personality; secondly, a significant fully mediated relationship between personality and satisfaction was confirmed. In this model, there is a negative association between

maladaptive personality, with a full mediation effect from Intimacy. That is, the fact that individuals with elevated maladaptive personality report worse relationship satisfaction can be explained by the finding that those individuals also present worse intimacy in their relationships, which in turn is associated with poorer satisfaction. This is a particularly important finding in the context of the dimensional model, as it shows how criterion A (deficits in intimacy) mediates the relationship between criterion B (maladaptive personality) and relationship satisfaction. This finding adds the mediation effect as an important consideration of how personality pathology, encompassed by both deficits in intimacy and maladaptive personality traits, can impact and erode relationship satisfaction, something that had yet to be explored by previous research using the DSM-5 dimensional model.

This study made use of a structure equation modelling approach to examine and test the hypothesis that maladaptive personality is associated with relational aspects, specifically satisfaction and intimacy, making use of the dimensional conceptualization of maladaptive personality set out in DSM-5. While previous research had established some links between personality and particular relationship variables, the approach described in this study made use of the dimensional model and used a structural approach to test these links as well as mediation effects which had yet remained unexplored. Structure equation modelling is an advantageous method which makes use of variables that cannot be directly observed (in this case, latent constructs of maladaptive personality defined by PID-5 domains, and Intimacy defined by PAIR domains), allowing to simultaneously make use of several indicator variables per construct and still capture the nuances of these by assessing how much they contribute. This is an advantage that other approaches lack, requiring them to run several separate analyses that could also yield less clear conclusions. Structure equation modelling approaches also take into account non-negligible amounts of measurement error which are typical in data from social sciences (Geiser & Lockhart, 2012) allowing for the modelling and testing of complex patterns of relationships between several variables (Tomarken & Waller, 2005). In sum, these results suggest that maladaptive personality, measured by PID-5 domains, does play a role in impacting how individuals experience their relationships and how satisfied they are by also negatively affecting how individuals' intimacy occurs in said relationships.

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Lastly, some positive albeit weak associations were also found between maladaptive personality domains and some of the Break Up Reasons, particularly between Negative Affectivity and Intimacy Issues, Negative Affectivity and Autonomy Issues, Disinhibition and Intimacy Issues, Disinhibition and Autonomy Issues, and Psychoticism and Autonomy Issues. Although these correlations suggest some associations between personality and why individuals terminate romantic relationships, their strength suggests caution when interpreting these results. While this study offers a brief insight into this area, very little is known about the role of personality in the termination of romantic relationships, so further research on this topic is needed.

Overall, maladaptive personality plays a role in how individuals relate to each other, in the sense that it impacts their relationship satisfaction and the intimacy they experience in a romantic relationship. This study ascertained that Intimacy and maladaptive personality are negatively associated, with Detachment contributing to lower levels of Intimacy in a relationship. Detachment was also found to be a negative predictor of how many relationships individuals, how long they have been single and also how satisfied they are in their current relationship. These results mostly match those found by research with the FFM, which also reinforces the perception of the DSM-5 personality domains as maladaptive variants of the FFM, while still being able to capture aspects of personality which are not merely represented by lower levels on opposite domains.

The DSM-5 alternative model of personality takes into account the severity of deficits in self and in interpersonal relatedness to conceptualize personality pathology, stating that impairment in personality functioning predicts the presence of a Personality Disorder (American Psychiatric Association, 2013). One of the noted impairments relates to intimacy, i.e. the duration and depth of connection with others, as well as the capacity and desire for closeness, which, as shown by this study, is negatively associated with maladaptive personality, strengthening the rationale for a dimensional conceptualization of personality pathology associated with impairments in interpersonal functioning. The negative association between personality pathology, lower levels of intimacy and lower levels of satisfaction reaffirm the research which shows that individuals with high levels of personality pathology intensify interpersonal problems due to their inflexible and rigid style, as well as reluctance to adapt to social

challenges (Johnson, Chen, & Cohen, 2004). While there are advantages in using clinical samples, confirming these significant associations in a community sample strengthens the growing recognition of the importance of subclinical Personality Disorder symptoms in the study of well-being and romantic distress (Daley et al., 2000), but also adds to the existing body of knowledge that advocates for a dimensional conceptualization of personality pathology, where maladaptive personality exists in a continuum with more or less severe effects on how individuals relate to each other, and how aspects of criterion A mediate the effects of criterion B in satisfactory interpersonal functioning.

Thus, this chapter continued the overarching goal of exploring the relationship between maladaptive personality and experiences in close relationships, establishing more links between personality traits and important aspects of interpersonal relationships. It has also gone further to examine the chain relation between personality pathology, comprised of criterion A and criterion B, and satisfaction in romantic relationships. The findings suggest a mediating effect of criterion A, uncovering another layer of the complexity of the relationship between personality pathology and how individuals experience their close relationships. The next chapter of this Thesis will continue to address how maladaptive personality can have a detrimental effect on close relationships by specifically looking at a group of individuals which are particularly impacted by the consequences of relationship erosion.

4.7 Limitations and future directions

This study had some limitations, the first being that it relied exclusively on self-report measures, which are vulnerable to under or over reporting biases, particularly when describing romantic relationships. Nonetheless, all of our instruments are validated and, apart from the Break Up Reasons Scale, widely used. Additionally, research has also evidenced an overlap between self- and informant-reports. A pertinent large meta-analysis by Kim, Di Domenico, and Connelly (2019) found that individuals do not see themselves in a more positive way then they are perceived by others, and self-report scores on measures of the Big Five did not differ from informant-reported means. Future research could, however, consider employing partner-ratings for relationship variables and examine differences between the associations of relationship intimacy and satisfaction with maladaptive personality. The use of different measures

to assess relationship satisfaction and intimacy could also be beneficial in future research, as a variety of these instruments exist. Notwithstanding, the measures used in this study were carefully chosen because of their relevance and reliability. In this study, a less onerous version of the PID-5 with 100-items was employed in an effort to reduce participant fatigue as a larger number of instruments was administered to participants. Additionally, by using this version of the measure, we contribute to the growing body of knowledge exploring maladaptive personality employing different versions of the PID-5. Although we could not confirm a five-factor structure for this instrument in the first study of this Thesis (see Chapter Two for details), previous research has found the PID-5-SF to have adequate psychometric properties and validity (Bach et al., 2016; Thimm, Jordan, & Bach, 2016b; Díaz-Batanero et al., 2019), suggesting it could be a good alternative to the more burdensome 220-item version of the instrument.

This study also relied exclusively on an online sample, which was partly invited to participate using advertisement in a University, thus in all likelihood this sample is comprised by members of the public but also University students. Although this could be deemed problematic in terms of representativity, there is evidence that personality assessment tools demonstrate measurement invariance across different types of samples (Behrend, Sharek, Meade, & Wiebe, 2011) and results from data collected online versus collected in person have shown to be analogous (Paolacci, Chandler, & Ipeirotis, 2010).

Future studies could further identify and examine the associations between pathological personality traits and romantic relationship variables, in particular regarding the termination of romantic relationships, as very little is still known about this association. The study presented in this chapter makes use of a measure developed to examine the aspects related to relationship breakups, adding the inspection of its relationship with maladaptive personality to the limited body of knowledge on this matter, but this remains a topic that requires further investigation.

Similarly, longitudinal approaches (e.g., diary data studies) could be considered, so that relationship functioning can be assessed over time in relation to maladaptive personality. This would offer an interesting insight on causality, but also information about the potential stability of the personality traits versus the malleability of interpersonal functioning. Personality traits are understood as being inflexible, rigid and chronic, however, research with the Five-Factor Model has also identified changes

in certain personality facets as individuals age (Roberts, Walton, & Viechtbauer, 2006). Future studies could then take longitudinal approaches with a combined measurement of criterion A and B to assess how these links change, if at all, during the course of a person's life. Despite being helpful, longitudinal approaches are often associated with increased costs and time spent to undertake them, which may not always be feasible.

Lastly, future studies could also use clinical samples, in order to investigate the details of the associations between maladaptive personality and relationship variables with individuals that are likely to have more elevated levels of personality pathology. This could be a helpful contribution to aspects of therapeutic approach focused on strengthening the maintenance of close and meaningful close relationships.

4.8 Conclusion

This study has found support for the idea that personality pathology is fundamentally interpersonal, in the way that impacts and predicts how individuals relate to each other, particularly in the context of romantic relationships. All levels of Intimacy were significantly and negatively associated with maladaptive personality, with Detachment contributing to lower levels of Intimacy in a relationship, but also found to be a negative predictor how long individuals have been single, of how many relationships individuals have, and of how satisfied they are in their current relationship. Findings from this study also showed that criterion A (deficits in intimacy) mediates the relationship between criterion B (maladaptive personality) and relationship satisfaction, unpacking the complex chain of relation between personality pathology and romantic relationship satisfaction.

Chapter Five

Maladaptive personality traits: comparisons between samples

5.1 Overview

The study aimed to inspect the maladaptive personality severity across samples, specifically between a sample of homeless individuals and a community sample, an empirical community sample, and an empirical clinical sample, using the Brief PID-5 (PID-5-BF). Homeless individuals have been found to present higher rates of Personality Disorder diagnoses in the literature, and relationship breakdown has been evidenced as a paramount factor in the pathway to homelessness. After addressing the links between relationship variables and maladaptive personality across this Thesis, in which Detachment played a significant role, examining a sample of homeless individuals was an opportunity to inspect how personality pathology occurs in this population and how it differs from other samples. Results showed that maladaptive personality scores are significantly higher amongst homeless individuals when compared to a community sample and an empirical sample. Equally, when compared to an empirical clinical sample with PD diagnoses, scores of all PID-5 domains except Antagonism did not differ between the two samples. Using a Latent Profile Analysis approach on the homeless sample and the community-dweller sample, 3 distinct maladaptive personality profiles emerged on the former, and 6 distinct profiles emerging on later, suggesting less heterogeneity amongst homeless individuals in how maladaptive personality presents.

5.2 Introduction

Previous studies described in this Thesis have examined the associations between personality pathology and experiences in close relationships, specifically how it relates to personality functioning, attachment, and intimacy and satisfaction in romantic relationships. Out of all the PID-5 trait domains, Detachment has been notably associated with deficits in how individuals relate to each other, impacting personality functioning, attachment styles, and experiences of intimacy and overall satisfaction in

relationships. Research is yet to explore how specifically does Detachment relate to relationship breakdown, but it can be hypothesized that maladaptive personality trait facets in the Detachment sphere (e.g., Withdrawal) may erode and hinder significant intimate relationships over time, leading to their eventual termination. While most individuals may experience relationship breakdowns without significant consequences across most aspects of their lives, there is a community which is disproportionately affected by these experiences: homeless individuals, for which relationship breakdown was the primary cause of their homelessness status.

5.2.1 Relationship breakdown and homelessness

Jones, Shier and Graham (2012) stress that relationship breakdown is a leading cause of homelessness, with three main themes emerging from the data in their study: relationship breakdown, the role and the impact of intimate partners during a homelessness period, and the nature of intimate relationships and its effect on housing. They also suggest that aspects of intimate relationships should be taken into account by social services when facing an individual's homelessness situation. Other research has also established several links between close relationships and homelessness. According to Ganim, Hunter and Karnik (2012), the most common factor that leads young people to leave home is family breakdown or disruptive family relationships. Similarly, the dissolution of relationships, such as separation or divorce, has also been perceived as the cause of housing instability, as it can potentially remove an essential source of support (Fertig & Reingold, 2008).

A study by Mallett, Rosenthal and Keys (2005) showed that family breakdown or family conflict was also present in all of 302 homeless young people's explanation as to why they had left their homes. Bower, Conroy and Perz (2017) also point out that homeless individuals experience high rates of relationship breakdown, as well as being prone to loneliness and social isolation. Their study also showed that the homeless participants surveyed experienced lack of companionship and family rejection. Chamberlain and Johnson (2011) also showed that relationship breakdown is one of many individuals' interpersonal issues that acts as a pathway to homelessness.

The pathways to homelessness are a particularly important research area, as homelessness is a problem in all the countries of the world. Even in more developed

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states, such as countries in Europe or North America, homelessness is a pertinent concern (Martens, 2002). According to a report issued by The National Alliance to End Homelessness (2015), as of January 2014, the estimate for homelessness in the United States identified 578,424 people as homeless. In the United Kingdom (excluding Northern Ireland), according to Crisis (2003), the number of single homeless individuals at any one-time ranges between 310,000 and 380,000. Variations on the legal definition of homelessness within institutions and countries make these estimates somewhat unreliable. Salavera, Tricás and Lucha (2011) state that homeless people are one of the most disadvantaged and vulnerable groups in our society. They live in the streets or temporary shelters, due to the familiar, social or labor ruptures that occur to these individuals (Cabrear, Malgesini, & López, 2003).

While literature has evidenced that relationship breakdown plays a significant role in how individuals become homeless, alongside relatively unreliable estimates for the prevalence of homelessness in a multitude of countries, not much is known about the role personality pathology plays into eroding these relationships to the point of termination. However, over the years research has too documented multiple connections between homeless status, mental health problems and, particularly, Personality Disorders.

5.2.2 Homelessness and Personality Disorders

Several studies have addressed the relationship between mental health problems, particularly Personality Disorders, and the homelessness status in several countries of the world. Some of the first documented rates of personality pathology incidence with this particular sample date to the 1980s, with studies reporting substantially higher Personality Disorder prevalence and high rates of comorbidity (Bassuk, Rubin, & Lauriat, 1984; Koegel & Burnam, 1988; Kramer et al., 1989; Smith, North & Spitznagel, 1992; Raynault, Battista, Joseph and Fournier, 1994). However, these studies are now particularly outdated, as arguably society has changed since the 1980s, but they also relied on diagnosis criteria who have also been revised.

More recently, in the United Kingdom, Murphy, Burley and Worthington (2002) showed that rates of reported Personality Disorder were high among an Edinburgh sample, of which 70% had at least one diagnosable Personality Disorder and 40%

presented two or more. Another British review from different services estimated that two thirds of their homeless clients presented features consistent with a Personality Disorder diagnosis (Middleton, 2008). In another more recent study, Salavera-Bordás (2009) claimed that Personality Disorders are the most prevalent psychopathologies in the homeless population, sometimes with the concurrence of several disorders. His study examined the relation between Personality Disorders and homelessness in a sample of 77 Spanish homeless patients that took part of an interview and completed the Millon Clinical Multiaxial Inventory – II (MCMI-II; Craig, 1993) whilst seeking treatment. The study showed a rate of 80.5% of the homeless participants with one or several Personality Disorders.

Salavera, Tricás and Lucha (2011) also assessed 89 homeless people, based on the premise that their situation, with a low quality of life, has an impact on their mental health. The results of their study showed that the homeless individuals presented more psychopathological symptoms, in both Axis II and Axis IV of the DSM-IV-TR, than the general population. Moreover, Personality Disorders were very frequent among the examined homeless people. Regarding the prevalence of Personality Disorders, the authors observed that Antisocial (25.8%, $N = 23$), Compulsive (22.5%, $N = 20$), Dependent (20.2%, $N = 18$), and Schizoid (19.1%, $N = 17$) disorders were the ones that obtained the highest scores, considering base rate .84. Translating these into the PID-5 dimensional model, homeless individuals would present higher scores on Antagonism and Disinhibition (characteristics of Antisocial Personality Disorder), Negative Affectivity (characteristics of Obsessive-Compulsive Personality Disorder), and also Psychoticism. Furthermore, they also pointed out that 32 individuals (36%) did not present a Personality Disorder, albeit 22.5% presented two disorders, 10.1% three disorders and 19.1% four or more.

Salavera, Puyuelo, Tricás and Lucha (2010) also point out that psychosocial conditions may exist prior to the homeless people's departure from their previous homes. As for comorbidity, in their study, the authors examined a sample of 91 homeless individuals, concluding that in approximately 40.7% of the sample, two or more Personality Disorders diagnoses coexisted, with an average of 2.06 Personality Disorders per person. Furthermore, the Cluster B Personality Disorders (such as Antisocial, Borderline, Histrionic and Narcissistic) presented the higher rate of comorbidity.

However, according to Tolomiczenko, Sota and Goering (2000), most research with the homeless population relied only on a description based diagnosis in terms of Axis I disorders. Therefore, they added a subset of the Personality Assessment Inventory to their study in order to test the usefulness of a self-report questionnaire that assesses different dimensions of personality. After performing cluster analysis, the authors sorted 112 subjects in four groups that were characterized by distinctive profiles. The first two of these groups were categorized by extreme scores on pathological dimensions of personality, such as antisocial traits, aggressiveness and borderline features. The third group presented moderate levels of personality dysfunction and the fourth did not seem to differ from nonclinical adult norms.

In more specific terms regarding Personality Disorders, Jainchill, Hawke and Yagelka (2000) analyzed data from 487 homeless participants that completed any part of a test battery, concluding that 91% of the sample presented at least one DSM-III-R diagnosis, with 64% presenting both a non-substance disorder and a substance disorder. As for the range, the authors concluded that Antisocial Personality Disorder and several phobias reached 38%, and major depression reached 20%. In a later study, Rouff (2000) addressed the relationships between Schizoid personality traits, chronicity of homelessness, and engagement in treatment in a sample of 125 homeless people. Data suggested that Schizoid personality traits and Schizoid Personality Disorder were prevalent among homeless individuals. Furthermore, the presence of Schizoid traits was found to be positively correlated with *chronicity of homelessness*, and two Schizoid traits were positively correlated with remaining in treatment at three months.

Ball, Cobb-Richardson, Connolly, Bujosa and O'Neall (2005) report that previous research has estimated Antisocial Personality Disorder rates between 10% and 40% among homeless individuals, exceeding all Axis I disorders apart from substance abuse. However, very little research has addressed a systematic diagnosis of the full range of Axis II disorders among the homeless population, even with some studies reporting estimated prevalence rates between 20% and 70% (including Schizoid, Dependent, Borderline and Antisocial features). These authors believe that more attention needs to be drawn towards Personality Disorders among homeless individuals, as Axis II disorders (including but not limited to Antisocial Personality Disorder) present a high comorbidity with Axis I disorders.

In their study, Ball et al. (2005) assessed 52 homeless individuals for psychiatric symptoms, psychosocial problems, and treatment response within a homeless drop-in center. They concluded that despite having similar rates of cluster B Personality Disorders incidence as other substance-dependent samples, clusters A and C Personality Disorders were more prevalent. Specifically, the authors showed that Cluster A Personality Disorders were frequently diagnosed (88% had at least one diagnosis), with Paranoid Personality Disorder being the most common, followed by Schizotypal and Schizoid. Within the DSM-5 dimensional model, characteristics of these disorders would be encompassed by the Psychoticism dimension. As for Cluster B disorders, Borderline and Antisocial were more common than Narcissistic and Histrionic. Apart from Histrionic, the remainder are still included as Personality Disorders in the DSM-5 dimensional model. Lastly, regarding Cluster C disorders, Avoidant and Obsessive-Compulsive were disproportionately higher; these two disorders are also included in the DSM-5 model, characterized by high levels of Detachment and Negative Affectivity, and high levels of Negative Affectivity, respectively.

5.2.3 Using the DSM-5 dimensional model and person-centered approaches

Although research seems to indicate the higher occurrence of a Personality Disorder diagnosis within the homeless population, some of the measures were found to over-diagnose (Hyler, Skodol, Kellman, Oldham, & Rosnick, 1990) or refer to previous editions of the DSM, which has changed the way Personality Disorders are theorized over the years. This needs to be taken into account when formulating hypotheses about personality pathology amongst homeless individuals but also when interpreting findings: a dimensional model allows for an examination that captures the nuances of maladaptive personality, but a comparison to previous research can be challenging as it has not addressed Personality Disorders in a similar way. Furthermore, authors such as Skodol, Bender, Morey, Clark et al. (2011) claim that DSM-IV-TR categorical criteria for the diagnosis of Personality Disorders lacked specificity in the definition of the pathology, and the instability of criteria and arbitrary diagnostic thresholds leads to an excessive comorbidity, as well as to a limited validity regarding some existing types of Personality Disorders.

The dimensional model for Personality Disorders would therefore allow for a more nuanced examination of maladaptive personality in a sample of homeless individuals. That said, a first-order inspection of personality trait domains may overlook the reality that personality traits do not exist in isolation (Merz & Roesch, 2011). Previous research with homeless individuals, relying almost exclusively on categorical approaches, failed to capture the nuances of human personality, describing this population in a homogenous way. With the dimensional model allowing for a more nuanced conceptualization of personality, it is worth exploring person-centered statistical approaches to personality as well, as these can mimic higher-order interactions (Lanza, Rhodes, Nix, & Greenberg, 2010). One of these approaches is Latent Profile Analysis (LPA), which can describe how traits are organized within individuals (Robins, John, & Caspi, 1998), offering a simple and brief summary of complex relationships sometimes described as typologies or profiles (Robins et al., 1998; Herzberg & Roth, 2006). The use of these typologies in personality research is a relatively new approach but it is grounded in the hierarchical nature of the personality construct (Robins et al., 1998). It assumes the existence of meaningful and shared patterns of behavior in the population, allowing researchers to integrate inventory scores into profiles of individuals with shared response patterns.

This approach provides researchers with a rounded interpretation of personality beyond the subscale scores which are commonly used to assess it (Merz & Roesch, 2011). Previous research making use of this approach have typically identified either three (Asendorpf, Borkenau, Ostendord, & Van Aken, 2001; Camacho et al., 2015; Merz and Roesch, 2011; Rammstedt, Riemann, Angleitner, & Borkenau , 2004) or five personality typologies (Herzberg & Roth, 2006; Kinnunen et al., 2012; Zhang, Bray, Zhang, & Lanza, 2015). For example, in the paper by Merz and Roesch (2011) these authors have identified three profiles they designated "Reserved" (low scores across the five-factors), "Excitable" (relatively high-scores across the five-factors, notably the profile with the highest Neuroticism scores), and "Well-Adjusted" (lower Neuroticism scores than the Excitable profile, albeit presenting higher scores in the other factors). Despite the increase in the use of this more sophisticated methodology over the last few years, research is still limited and has exclusively used the Five-Factor Model to assess personality. It is therefore pertinent to apply it to the DSM-5 dimensional

approach, in particular with a population whose personality nuances have historically been overlooked.

5.2.4 Conclusion

In light of the literature reviewed above, it seems important to examine homelessness and maladaptive personality as a way of potentially showing an extreme outcome of relationship breakdowns, as these are one of the factors that can lead individuals into homelessness. In previous chapters of this Thesis, we explored the links between interpersonal relationships and maladaptive personality, assessing the impact of personality in the way we relate to others and how we perceive these relationships. Disinvestment in intimate relationships and relational aspects of one's life are characteristic of the Detachment trait domain in the DSM-5 dimensional model, therefore in this chapter we will aim to inspect how scores on this trait domain occur in homeless individuals, based on the premise that personality trait facets from the Detachment sphere could impact relationships and lead to an extreme outcome of homelessness due to this breakdown or conflict. Research on the prevalence of different types of Personality Disorders in homeless samples as also shown that Schizotypal and Avoidant Personality Disorders are prevalent. In the dimensional model for the DSM-5, these two disorders are characterized by pathological personality trait facets within the Detachment trait domain, so we hypothesize that scores on this trait domain will be higher amongst homeless participants. These two Personality Disorders are also characterized by Negative Affectivity (for both) and Psychoticism traits (for Schizotypal), thus we anticipate that homeless individuals will also score higher on these trait domains.

Given the recent reconceptualization of the way Personality Disorders are comprehended, it is pertinent to address their associations with homelessness in light of the dimensional model proposed for the DSM-5. As discussed, previous research relied on a different conceptualization for Personality Disorders, which has been shown to over-diagnose and present inflated rates of comorbidity. By using the DSM-5 model to look at maladaptive personality in a sample of homeless individuals, we can characterize their personality in a dimensional way, allowing for a more meaningful interpretation. Furthermore, by making use of a person-centered statistical approach, it

is hoped that further insight into maladaptive personality can be achieved beyond the interpretation of trait domain scores. To the best of our knowledge, no studies have examined a homeless sample using the dimensional model and its related measure, the PID-5.

5.3 Aims and hypotheses

The study described in this chapter aimed to assess personality pathology in a sample of homeless individuals, as well as comparing it to other samples (community sample, empirical community sample and empirical clinical sample), using the DSM-5 Alternative Model for Personality Disorders and a person-centered statistical approach (LPA).

In previous chapters of this Thesis, the links between relationship dysfunction and maladaptive personality have been explored, with results pointing to negative associations between personality pathology and relational aspects. Research has consistently shown that relationship dysfunction and breakdown are one of the leading causes of homelessness; therefore a dimensional assessment of personality pathology in a homeless sample is pertinent, as a way to investigate how it occurs in a population that can be understood as an extreme consequence of relationship problems. It was expected that Detachment would be significantly associated with homelessness, as this personality trait domain is intrinsically connected with the avoidance of close and intimate relationships, and as established in research described in this Thesis, also negatively associated with relationship functioning.

Furthermore, previous research has established high rates of Avoidant and Schizotypal Personality Disorders amongst homeless individuals, which in the DSM-5 model are characterized by personality features of the Detachment and Negative Affectivity, Psychoticism, Detachment and Negative Affectivity trait domains, respectively. PID-5 scores from these trait domains were expected to be significantly higher in homeless individuals when compared to community samples (*i*). Given the research reporting higher rates of Personality Disorder diagnoses in homeless samples, no differences in scores of the PID-5 between homeless individuals and an empirical clinical sample with diagnosis of Personality Disorders were expected (*ii*). Equally, it was expected that maladaptive personality could explain the likelihood of being

homeless in a logistic regression model (*iii*). Lastly, it was hypothesized that distinct groups of personality pathology severity existed amongst homeless individuals, making use of the PID-5 and an LPA approach to better capture these nuances (*iv*). Thus, based on the previous research, we specifically expected to find:

(i) Significant differences between the homeless sample and community dwellers, as well as between the homeless sample and an empirical community sample, with homeless individuals scoring higher on all the PID-5 trait domains (particularly Detachment, Negative Affectivity and Psychoticism) and in all configurations of Personality Disorders;

(ii) No significant differences between the PID-5 scores of homeless individuals and those from an empirical clinical sample with Personality Disorder diagnoses;

(iii) Maladaptive personality increasing the likelihood of being homeless, particularly the Detachment and Psychoticism trait domains;

(iv). Distinct and meaningful profiles of maladaptive personality occurring amongst homeless individuals and in the community sample.

5.4 Method

5.4.1 Participants

A sample of 68 homeless individuals and a sample of 425 members of the general population (community sample) took part in this study. Data from the homeless participants was secondary data collected by a Goldsmiths graduate student and it was made available to the researchers in the Department of Psychology. After contacting charities specializing in supporting homeless individuals in London, UK, about undertaking a research project, participants were then recruited, after giving informed consent, which included information about the research as well as other ethical aspects, alongside with an introduction about their participation. The participants were all affected by unstable housing with homelessness durations ranging between periods of one week and 25 years, with a mean duration of homelessness of 2.6 years ($SD = 4.35$). Participants were recruited from three homeless charities: 6 from the homeless night shelter GrowTH in East London, and the remaining from two charities of the Acton Homeless Concern in West London. The sample of 425 members of the community

sample consisted of the 306 participants whose data were used in Chapter 2 plus an additional sample of 119 who participated online.

Additionally, two empirical comparator samples were used: an empirical community sample ($n = 925$); and an empirical clinical sample ($n = 451$) with individuals with a diagnosis of Personality Disorder. The comparator samples from the study of Bach et al. (2015) were selected as this paper reports on large and clinical samples using the same brief version of the PID-5 (PID-5-BF) which was administered to the homeless sample. Although data from a UK community sample will be used for the purposes of comparing it to the homeless sample data, we sought an additional comparison to a large empirical community sample. This empirical community sample included participants randomly recruited via a Civil Registration System, employees working in psychiatry and university students, making it particularly and advantageously more diverse. In an effort to produce more robust findings and to address a potential limitation of a smaller and less diverse community sample (Pollet & Saxton, 2019), the additional comparison to an empirical community sample was hence conducted.

For the homeless participants, age ranged from 18 to 55 years ($M = 33.07$, $SD = 7.32$) and 89.7% (61) were male, 10.3% were female. For the 425 participants from the community sample, age ranged from 18 to 59 ($M = 23.42$, $SD = 6.25$), 29.4% (125) were male, 67.8% (288) were female and 1.9% (8) identified as other. The empirical community sample had a mean age of 29 ($SD = 8.9$), with 77% (712) participants identifying as female and 33% (213) as male. The empirical clinical sample had a mean age of 35 ($SD = 13.1$), with 81% (365) of participants identifying as female and 19% (86) as male. Ethical approval for data collection was provided by the Department of Psychology Ethics Committee at Goldsmiths.

5.4.2 Measures

Personality Inventory for the DSM-5 – Brief Form

The Brief PID-5 is a 25-item self-rated personality trait assessment scale for adults aged 18 and older, adapted from the 220-item Personality Inventory for the DSM-5 (PID-5; Krueger, Derringer, Markon, Watson, & Skodol, 2012), that assesses 5 personality trait domains, i.e. Negative Affect, Detachment, Antagonism,

Disinhibition and Psychoticism. Each item asks the participant to rate how well the item describes him or her generally on a 4-point scale (the response categories for the items are 0 = very false or often false; 1 = sometimes or somewhat false; 2 = sometimes or somewhat true; 3 = very true or often true). In order to compute the five broader trait domains, specific trait facets are then combined. The scores are then calculated by taking the average response for the five domains, with higher scores on a particular trait facet or trait domain equating to greater dysfunction. The Cronbach's alpha values for the Personality trait domains are as follow: Negative Affectivity, $\alpha = .71$; Detachment, $\alpha = .66$; Antagonism, $\alpha = .72$; Disinhibition, $\alpha = .72$; and Psychoticism, $\alpha = .73$.

5.4.3 Procedure

The homeless participants completed the questionnaire in separate rooms inside the charities. Participants were paid £5 upon completing the study and were given a debriefing form with more information regarding the study and their participation.

Community sample data were collected online, where participants volunteered to complete the questionnaires on an online platform. No compensation was offered in return for participation and participants were given debrief information upon completing the questionnaires.

5.4.4 Statistical analysis

A series of independent-sample t-tests were conducted to ascertain the differences in the means of each PID-5 trait domain (Negative Affectivity, Detachment, Antagonism, Disinhibition and Psychoticism) between the homeless participants and the community sample. Additionally, the PID-5 scores from the homeless sample were compared to empirical data from a community sample ($n = 925$) and from an empirical clinical sample ($n = 451$) published by Bach et al. (2015) using Welch t-tests. A Bonferroni adjusted alpha level of .01 was employed for these analyses to account for the inflation of Type I error when performing multiple comparisons. Standardized effect sizes were calculated for each comparison.

Personality Disorder configuration scores were calculated using the available 25 Brief PID-5 items by combining the items in the constellations described for each DSM-5 Personality Disorder as per Table 5.1 (below). Personality Disorder scores

were calculated by averaging the corresponding items. A series of independent-sample t-tests were conducted to inspect the differences in the means of each configurational Personality Disorder scores between homeless individuals and the community sample. A Bonferroni adjusted alpha level of .01 was employed for these analyses. Cohen's d effect sizes were calculated for each comparison

Additionally, a logistic regression was performed to predict the likelihood of being homeless from the PID-5 trait domains. Model fit was assessed with a Chi-squared test and Nagelkerke R^2 was used as a pseudo-R^2.

A Latent Profile Analysis (LPA) was employed to identify clusters of individuals (latent profiles) based on their responses to a serious of continuous variables (indicators). Specifically, LPA was used to identify latent profiles of homeless individuals and participants from the community sample based on their PID-5 trait domain scores. This approach is a branch of Gaussian Finite Mixture Modelling alongside with Latent Class Analysis (which mostly uses binary indicators instead of continuous ones). Composite variables were used instead of item-level data to support convergence and simplify the model. Maximum Likelihood (ML) was used as an estimation method as it is adequate for continuous composite scores. Baysean Information Criteria (BIC) was used for model selection by inspecting a matrix of BIC values for the available models and the number of components up to 9 (by default). Missing data was handled using listwise deletion.

All analyses were conducted in R 3.6.1. The package *mclust* (Scrucca, Fop, Murphy, & Raftery, 2016) was used to run the Latent Profile Analysis. Charts were built using the package *ggplot2*.

Table 5.1 – *Brief PID-5 items and their corresponding trait facets, trait domains and associated Personality Disorder (PD)*

Brief PID-5 item	Personality Trait Facet	Personality Trait Domain	Associated PD
1	Risk Taking	Disinhibition	Antisocial, Borderline
2	Impulsivity	Disinhibition	Antisocial, Borderline
3	Impulsivity	Disinhibition	Borderline
4	Depressivity	Detachment	Borderline
5	Irresponsibility	Disinhibition	Antisocial
6	Separation Insecurity	Disinhibition	-
7	Eccentricity	Psychoticism	Schizotypal
8	Anxiousness	Negative Affectivity	Avoidant, Borderline
9	Emotional Lability	Negative Affectivity	Borderline
10	Separation Insecurity	Negative Affectivity	Borderline
11	Perseveration	Negative Affectivity	Obsessive-Compulsive
12	Unusual Beliefs	Psychoticism	Schizotypal
13	Intimacy Avoidance	Detachment	Avoidant
14	Withdrawal	Detachment	-
15	Hostility	Negative Affectivity	Antisocial, Borderline
16	Withdrawal	Detachment	Avoidant, Schizotypal
17	Callousness	Antagonism	Antisocial
18	Callousness	Detachment	Antisocial
19	Attention Seeking	Antagonism	Narcissistic
20	Grandiosity	Antagonism	Narcissistic
21	Eccentricity	Psychoticism	-
22	Deceitfulness	Antagonism	Antisocial
23	Perceptual Dysregulation	Psychoticism	Schizotypal
24	Perceptual Dysregulation	Psychoticism	Schizotypal
25	Manipulativeness	Antagonism	Antisocial

5.5 Results

5.5.1 Domain scores

Independent-sample t-tests were conducted to ascertain the differences in the means of each Brief PID-5 trait domain (Negative Affectivity, Detachment, Antagonism, Disinhibition and Psychoticism) between the homeless participants and the community sample. Table 5.2 below shows the results, where significant differences in the means of all PID-5 trait domain scores, with the homeless individuals

scoring higher than the community sample participants, were found. Standardized effect sizes ranged from .40 (Negative Affectivity) to .70 (Detachment).

Table 5.2 – *Means and standard deviations for the Brief PID-5 for the homeless sample and community sample*

Domains	Status	Mean	SD	t	df	*p*	Effect Size
N. Affectivity	H	1.42	0.84	2.69	78.69	**.009**	.40
	P	1.12	0.64				
Detachment	H	1.24	0.68	5.4	82.67	**< .001**	.70
	P	0.77	0.56				
Antagonism	H	1.13	0.75	3.99	81.92	**< .001**	.57
	P	0.74	0.61				
Disinhibition	H	1.37	0.73	4.81	82.35	**< .001**	.67
	P	0.92	0.6				
Psychoticism	H	1.29	0.75	4.1	482	**< .001**	.50
	P	0.93	0.66				
Total	H	1.29	0.58	5.31	81.36	**< .001**	.75
	P	0.89	0.47				

Note: H = Homeless, P = community sample; SD = Standard Deviation

The Brief PID-5 trait domain scores of homeless individuals were also compared against an empirical community sample ($n = 925$). Significant differences in all the trait domain scores and total score were found, with homeless individuals scoring significantly higher. Standardized effect sizes ranged from .50 (Negative Affectivity) to .95 (Disinhibition). Results are displayed in Table 5.3 below.

Table 5.3– *Means and standard deviations for the Brief PID-5 for the homeless sample and the empirical community sample*

Domains	Status	Mean	SD	t	df	p	Effect Size (d)
N. Affectivity	H	1.42	0.84	3.12	72.83	**.003**	.50
	C	0.77	0.64				
Detachment	H	1.24	0.68	4.63	72.42	**< .001**	.76
	C	0.46	0.5				
Antagonism	H	1.13	0.75	4.34	70.43	**< .001**	.86
	C	0.33	0.44				
Disinhibition	H	1.37	0.73	5.17	71.14	**< .001**	.95
	C	0.44	0.47				
Psychoticism	H	1.29	0.75	5.06	75.85	**< .001**	.89
	C	0.34	0.49				
Total	H	1.29	0.58	5.67	74.81	**< .001**	.80
	C	0.47	0.51				

Note: H = Homeless, C = Empirical community sample; SD = Standard Deviation; d = Cohen's d

Additionally, the homeless individual scores were compared against an empirical clinical sample ($n = 451$). Apart from the Antagonism trait domain, in which the homeless sample had significantly higher scores, no other significant differences were found. The standardized effect size for the difference in the scores of Antagonism was medium (.39). Results are displayed in Table 5.4 below.

Table 5.4– *Means and standard deviations for the Brief PID-5 for the homeless sample and the clinical sample*

Domains	Status	Mean	SD	t	df	p	Effect Size (d)
N. Affectivity	H	1.42	0.84	-1.55	80.36	.126	0.24
	Clin	1.75	0.67				
Detachment	H	1.24	0.68	-0.23	85.25	.820	0.031
	Clin	1.28	0.63				
Antagonism	H	1.13	0.75	3.39	98.02	**.001**	0.39
	Clin	0.56	0.59				
Disinhibition	H	1.37	0.73	0.05	82.73	.051	0.29
	Clin	1.00	0.63				
Psychoticism	H	1.29	0.75	1.39	86.09	.167	0.19
	Clin	1.02	0.71				
Total	H	1.29	0.58	1.1	94.27	.271	0.13
	Clin	1.12	0.65				

Note: H = Homeless, Clin = Clinical sample; SD = Standard Deviation; d = Cohen's d

5.5.2 Personality disorder configuration scores

To further understand how maladaptive personality occurs in the homeless sample, a series of independent t-tests were conducted to compare the means of Personality Disorder configuration scores. These scores comprised items belonging to trait facets associated with specific disorders. Although this approach is limited by the reduced set of items in the Brief PID-5, it adds another layer of comparison between the community sample and homeless individuals by examining aggregated scores for specific trait facets that are theorized to present together in specific Personality Disorders.

Table 5.5 below displays the means, standard deviations and test results for each of the comparisons. Differences in the mean scores were found across all Personality Disorder types, with homeless individuals scoring significantly higher. The highest effect size was found for Borderline Personality Disorder (Cohen's $d = 1.87$), followed by Antisocial and Avoidant.

Table 5.5 – *Means and standard deviations for the Personality Disorder configuration scores in the homeless and community samples*

Domains	Status	Mean	SD	t	df	p	d
Antisocial	H	1.24	0.64	-5.38	483	**< .001**	1.64
	P	0.85	0.54				
Avoidant	H	1.41	0.79	-4.80	484	**< .001**	1.60
	P	0.97	0.68				
Borderline	H	1.38	0.69	-5.39	478	**< .001**	1.87
	P	0.98	0.55				
Narcissistic	H	1.29	0.94	-6.12	489	**< .001**	1.14
	P	0.72	0.67				
Obsessive-Compulsive	H	1.37	0.97	-3.46	488	**.001**	1.23
	P	0.95	0.92				
Schizotypal	H	1.22	0.69	-4.08	482	**< .001**	1.54
	P	0.88	0.62				

Note: H = Homeless, P = Community sample

5.5.3 Logistic regression

A logistic regression was performed to ascertain the effects of Negative Affectivity, Detachment, Antagonism, Disinhibition and Psychoticism on the likelihood that participants are homeless. The logistic regression model was

statistically significant, $\chi^2(5) = 44.033, p < .001$. The model explained 16% (Nagelkerke R^2) of the variance in the relationship status and correctly classified 87% of cases. Out of the five predictor variables, Detachment and Disinhibition were statistically significant. An increase in Detachment was associated with an increase in the likelihood of being homeless, $e^B = .415$, and an increase in Disinhibition was associated with an increase in the likelihood of being homeless, $e^B = .487$. These results are shown in Table 5.6 below.

Table 5.6 – *Results for the Logistic Regression on Homelessness Status*

	B	**S.E.**	**Wald**	*df*	*p*	**Exp(B)**
Neg. Affect	.102	.258	.156	1	.693	1.107
Detachment	**-.880**	**.290**	**9.208**	**1**	**.002**	**0.415**
Antagonism	-.320	.249	1.65	1	.199	0.726
Disinhibition	**-.719**	**.255**	**7.974**	**1**	**.005**	**0.487**
Psychoticism	.193	.287	.451	1	.502	1.213
Constant	3.438	.368	87.228	1	.000	31.139

Note: B = coefficient; SE = standard error; Exp(B) = odds ratio

5.5.4 Latent Profile Analysis

Latent Profile Analysis was used to identify latent profiles of homeless individuals and community sample participants based on their PID-5 trait domain scores, allowing for an examination of the group's heterogeneity. Models were estimated using an iterative building process in which the number of latent profiles was increased. Baysean Information Criteria (BIC) was used as a criterion for model retention and a Bootstrap Likelihood Ratio Test (BLRT) was employed to compare model fit between *k-1* and *k* profile models (Nylund, Asparouhov, & Muthén, 2007).

For the sample of homeless participants, two of the best three models had spherical distribution, equal volume and equal shape (EII), and the third best one had spherical distribution, variable volume and equal shape (VII). In a model-based approach to clustering, the volume, shape, and orientation of the covariances can be constrained to be equal or variable across groups, creating 14 possible models with distinct geometric characteristics (see Scrucca et al., 2016). Using BIC and BLRT to determine model retention, an EII 3-profile model had the best fit (Table 5.7 and 5.8).

Table 5.7 – *Baysean Information Criteria (BIC) for the models with best fit*

	EII,3	EII,2	VII,3
BIC	-901.00	-901.06	-902.57
BIC difference	0.00	-0.06	-1.57

Table 5.8 – *Bootstrapping analysis for LPA model comparison*

Model comparison	Likelihood Ratio Test	p
1 vs 2	95.05	.001
2 vs 3	25.29	.004
3 vs 4	11.09	.266

The 3-profile model classified 32 cases (48%) on group 1, 22 cases (32%) on group 2 and 13 cases (20%) on group 3. The standardized means for each group are plotted in Figure E below.
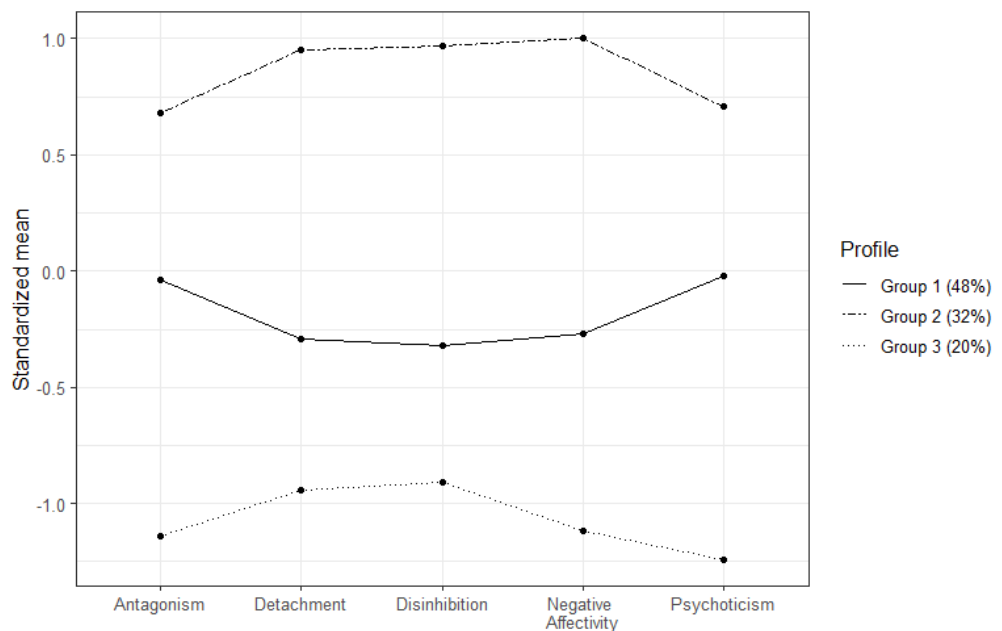

Figure E – *Standardized means of PID-5 trait domain scores for model groups (LPA) for the homeless sample*

Group 2 individuals have the highest standardized PID-5 trait domain scores, with Negative Affectivity, Disinhibition and Detachment scores being particularly high, with the lowest scores happening on Psychoticism and Antagonism. Group 1 encompasses most individuals (48%) and has standardized scores close to 0 but below this value, with the lowest scores on the Disinhibition domain. Group 3 has the lowest standardized scores on all domains with Psychoticism being the lowest.

The same procedure was undertaken for the community sample. Two of the best three models had a diagonal distribution, variable volume and equal shape (VEI), and the other best one had a diagonal distribution, variable volume and variable shape (VVI) (Scrucca et al., 2016). Using BIC and BLRT to determine model retention, a VEI 6-profile model presented the best fit (Tables 5.9 and 5.10).

Table 5.9 – *Baysean Information Criteria (BIC) for the models with best fit*

	VEI,6	VVI,3	VEI,3
BIC	-4985.79	-4989.9	-4996.36
BIC difference	0.00	-4.19	-10.57

Table 5.10 – *Bootstrapping analysis for LPA model comparison*

Model comparison	Likelihood Ratio Test	*p*
1 vs 2	640.10	.001
2 vs 3	192.32	.001
3 vs 4	34.72	.001
4 vs 5	29.07	.003
5 vs 6	72.65	.001
6 vs 7	-0.57	.262

The 6-profile model classified 80 cases (20%) on group 1, 22 cases (5%) on group 2, 67 cases (17%) on group 3, 182 cases (45%) on group 4, 35 cases (8%) in group 5, and 15 cases (4%) in group 6. The standardized means for each group are plotted in Figure F below.
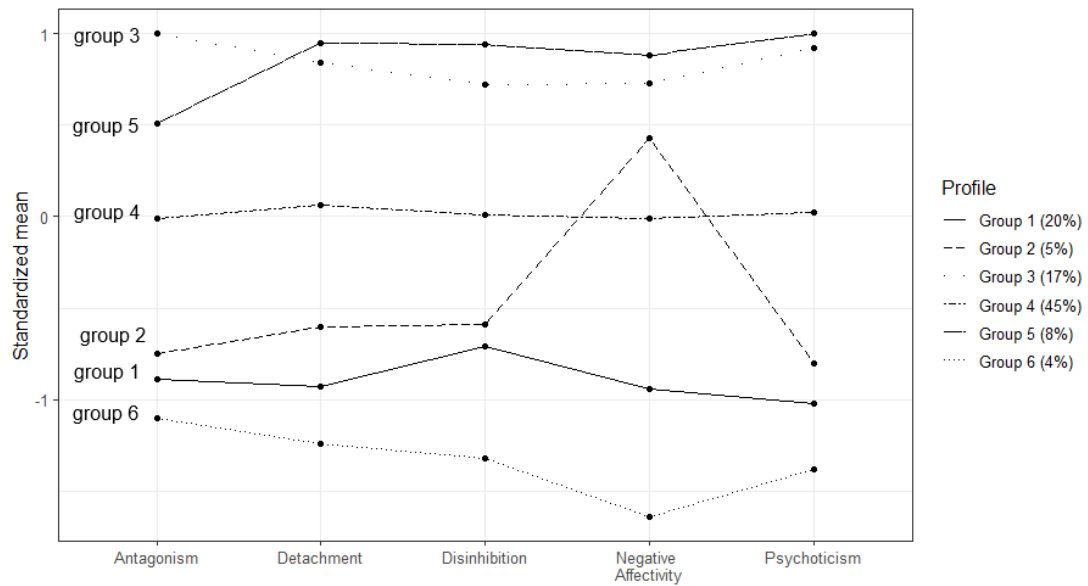
Figure F – *Standardized means of PID-5 trait domain scores for model groups (LPA) for the community sample*

The largest group is group 4 (45% of participants) and is characterized by average scores across all PID-5 domains. Group 6 (4%) has the lowest average scores on all domains, whereas individuals in group 3 (17%) and in group 5 (8%) have the highest scores. Group 5 participants have higher average scores on all PID-5 trait domains except Antagonism when compared to group 3 individuals, as these participants score lower on all trait domains but Antagonism. Interestingly, group 2 (5%) has all PID-5 trait domain scores below average except for slightly elevated Negative Affectivity. Lastly, group 1, comprised of 20% of participants, has scores above average but not as low as those in group 1, with a slightly more elevated score on Disinhibition, albeit still below the mean.

5.6 Discussion

The results of the current study seem to support the research that shows higher personality pathology in homeless individuals. As expected, homeless participants scored significantly higher in all the five maladaptive personality trait domains of the PID-5 than the community sample. The largest effect size (.70) was found for Detachment and the smallest was found for Negative Affectivity (.40). Equally, when comparing the mean scores of the homeless sample to an empirical community sample,

the former presented higher scores on all PID-5 trait domains. The differences in Detachment scores had a similar effect size (.76), however the largest effect size was found in the mean differences of the scores of Disinhibition. Similarly, the smallest effect size was found in the differences of Negative Affectivity scores (.50) in this comparison.

The homeless sample was then compared to a clinical sample from published research by Bach et al. (2005). In this clinical sample, all participants met the criteria for at least one DSM-IV-TR non-psychotic disorder, with the most common diagnoses being mood and anxiety disorders alongside co-occurring Avoidant and Borderline Personality Disorders. The results from our comparison showed that four out of five trait domains had negligible differences, with the only significant one found on the scores of the Antagonism trait domain, with the homeless sample scoring significantly higher than the clinical sample, with a medium standardized effect size (.39). Notably, Antagonism is a personality trait domain that characterizes Antisocial Personality Disorder, a diagnosis that research has evidenced as being particularly prevalent amongst homeless individuals (Jainchill, Hawke & Yagelka, 2000; Ball, Cobb-Richardson, Connolly, Bujosa, & O'Neall, 2005; Salavera, Tricás & Lucha, 2011). These results suggest that the Brief PID-5 could be a useful measure to assess personality pathology with homeless people, as the results did not differ from those of an empirical clinical sample, and also showed a plausible difference that could be explained by links unveiled in previous research.

Equally, homeless individuals scored significantly higher on all the configuration scores for Personality Disorders (Antisocial, Avoidant, Borderline, Narcissistic, Obsessive-Compulsive, and Schizotypal). These results also align with previous research that shows more psychopathological symptoms in homeless people when compared to the general population. The Borderline Personality Disorder configuration showed the largest effect size, which does not seem to match prevalence rates for this disorder reported in the literature, which mostly documents Avoidant and Schizotypal. However, the interpretation of proposed Personality Disorder score differences needs to be done cautiously for two reasons: firstly, this is an unconventional approach, used in this study in an attempt to inspect particular aggregated scores from trait facets associated with specific Personality Disorders in order to provide one more layer in the inspection of how homeless individuals may differ from the general population.

Secondly, the trait facets that comprised the proposed Personality Disorder configuration scores were calculated using a limited set of items (as we are using the Brief PID-5), meaning that the trait scores themselves could not be computed using the entirety of the items that would otherwise be included in their calculation.

Similarly, the results of this study show that Detachment and Disinhibition were associated with a higher likelihood of being a homeless individual. The Detachment domain refers to the avoidance of socio-emotional experiences, which includes restricted affective expression and experience, but also withdrawal from interpersonal interactions. Some trait facets included in this trait domain are Withdrawal, Intimacy Avoidance and Anhedonia. This result could support previous findings that highlight the breakdown of interpersonal relationships as one of the pathways to homelessness (Mallett, Rosenthal & Keys, 2005; Chamberlain & Johnson, 2011; Bower, Conroy & Perz, 2017), as the Detachment trait domain is associated with the avoidance of close relationships and intimacy. The Disinhibition was also associated with a higher likelihood of being homeless; this trait domain relates to an orientation regarding immediate gratification, which can lead to impulsive behaviors, disregarding consequences or past learning experiences. Some trait facets that belong to this trait domain include, for example, Risk Taking, Irresponsibility and Distractibility. Our results suggest that these two trait domains seem to be linked to a higher likelihood of being homeless when accounting for the overlap between the domains. Conversely, it is also worth considering that elevated maladaptive traits could also be a response to living in an adverse environment. For example, Eriksoson, Masche-No, and Dåderman (2017) found that Swedish prisoners scored substantially higher in the Big Five Conscientiousness than the general population and students, but equally high as prison guards. These authors suggested that a strict prison environment with regulations and norms of expected behavior may encourage prisoners to develop conscientious behavior in order to avoid punishment from guards as well as reprisals from fellow prisoners. In the case of homeless individuals, behaviors associated with Detachment (such as withdrawal from intimate relationships) and Disinhibition (such as impulsive behaviors and risk taking) may also be the result of an adaptive response to hostile environment which may exacerbate these traits amongst this population. Nevertheless, just as the study by Eriksson et al. (2017), the study described in this chapter is

correlational and no causal relationship and its direction can be inferred. However, this conjecture adds to the ongoing discussion of the stability of personality traits.

To further inspect the characteristics of the samples, a Latent Profile Analysis was conducted. With this approach, individual scores can be evaluated as latent profiles in a similar fashion to factor analysis, with patterns of shared variance amongst individuals on the five maladaptive trait domains being extracted into a profile. The resulting models are then iteratively evaluated to ascertain how many latent profiles exist in the dataset (Bergman et al., 2003; Collins & Lanza, 2013; Marsh et al., 2009). By looking exclusively at average trait domain scores and even hypothesized Personality Disorder scores, the complex interactions of personality subcomponents are not evident. Therefore, the LPA approach permits a better understanding of the range of personality in a particular sample, as it allows for a statistical model that focuses on patterns in personality data shared amongst individuals. This is particularly relevant because previous research with homeless individuals has almost exclusively relied on categorical approaches to personality that do not capture its nuances, describing homeless individuals in a homogeneous way. This approach has been used with personality data before (e.g., Merz & Roesch, 2011; Fergusson & Hull, 2018) using the NEO-PI scores to model personality typologies.

The LPA identified three latent profiles for the homeless sample: Group 1 with more average scores (particularly Antagonism and Psychoticism), Group 2 with high scores across all trait domains (particularly Negative Affectivity, Detachment and Disinhibition), and Group 3 with low scores across all five trait domains (with the higher scores being on Detachment and Disinhibition). These results indicate that despite scoring higher than the general population on maladaptive personality trait domains, homeless individuals are a heterogeneous group with three different levels of maladaptive personality severity. In Merz and Roesch (2011) and Fergusson and Hull (2018) Latent Profile Analyses of the Big Five, these authors also found 3 groups: "Excitable" (high means across all personality subscales and the highest Neuroticism scores of the three profiles identified); "Reserved" (relatively low scores on all subscales); and "Well-Adjusted" (high Extraversion, Agreeableness, Openness and Conscientiousness, but lower Neuroticism). Taking into consideration that PID-5 domains can be interpreted as maladaptive variants of the Big Five, our results seem to match these findings.

Conversely, six groups emerged in the general population sample, with the largest (group 4 with 45% of participants) characterized by average scores on all maladaptive personality trait domains. Overall, the LPA analysis showed that the general population sample seemed to be more heterogeneous in terms of severity levels of the PID-5 trait domains, with most participants allocated to groups with scores below average on all the trait domains. Interestingly, group 2 emerged with all scores below average except Negative Affectivity, suggesting that a sub-group of this sample presents aspects from this trait domain while not exhibiting particularly strong aspects from others. These individuals could potentially have specific personality traits related to Anxiousness or Depressivity that are more elevated.

LPA is a useful approach to model personality as it can help understand how personality components are combined for an individual, providing both researchers and practitioners with a different approach that uses profiles to classify individuals in a way that can be more meaningful. Our aim was to provide an individual-based approach to classification of personality pathology, using the dimensional model in a population that has been studied using different paradigms and approaches. LPA provided further insight into the characteristics of maladaptive personality typologies of homeless people. Caution should, however, be advised in the interpretation of these findings, particularly since the homeless sample is relatively small and that can impact the determination of the number of groups to extract (Tein, Coxe, & Cham, 2013).

Considering the new conceptualization of personality pathology in the DSM-5 model, the results from this study bring insight into the incidence of maladaptive personality in a specific sample, such as homeless individuals, using a dimensional approach. The results showed that homeless individuals present higher levels of maladaptive personality, as assessed by the alternative model for the DSM-5, compared to community samples. Results also suggested that personality scores from homeless individuals did not significantly differ from individuals from an empirical clinical sample with formal Personality Disorder diagnoses (with the notable exception of Antagonism). As most research regarding psychiatric disorders focuses mostly on Axis I disorders, this study also contributes to a better clarification of how personality pathology occurs within homeless communities, aligning with previous studies that showed that homeless people present higher rates of Personality Disorders (Rouff, 2000; Ball et al., 2005) but also offering insight to the variability of its severity within

this population. This study identified three distinct profiles individuals regarding maladaptive personality, highlighting the heterogeneity of maladaptive personality in a sample that has been studied almost exclusively using categorical models which have limitations when it comes to capture the complexity of human personality.

To the best of our knowledge, there is no previous research that assessed a homeless sample using the PID-5, so the results described in this study also offer insight into the characteristics of personality pathology in this specific population in light of the alternative model for Personality Disorders. These results can hopefully incentivize further research using the dimensional model with homeless individuals, investigating the mechanisms of relationship breakdown using the conceptualization of personality pathology in terms of criterion A and criterion B, but also how the chain of relation of these criteria (as explored in Chapter 4) could be detrimental for the maintenance of significant intimate relationships, leading to a potential homelessness status due to their terminations.

5.7 Limitations and future directions

The present study has some limitations, particularly in terms of the homeless sample being limited to 68 participants, which is relevant when applying techniques such as LPA (Van Voorhis, & Morgan, 2007; Tein, Coxe, & Cham, 2013), so caution is advised when interpreting the results from this particular analysis. It was felt that, despite this limitation, an explorative approach using a more sophisticated method such as LPA could be helpful to begin to understand how the PID-5 trait domains occur with a sample that so far has exclusively been researched using categorical approaches with not much opportunity for the inspection of personality nuances.

Another limitation relates to the fact that the homeless participants were not tested for other psychiatric disorders, despite the high rates of comorbidity of psychopathology usually shown on homeless individuals (e.g., Kramer et al., 1989). As pointed out by Edidin et al. (2012), the nature of homelessness can make it difficult to gather samples that are more representative of the overall population, and convenience sampling can often lead to homogeneous study populations. For example, Ferguson, Jun, Bender, Thompson and Pollio (2010) studied different samples of homeless

individuals across different cities and their results suggested that homeless individuals are in fact a heterogeneous population.

Another limitation concerns the fact that the PID-5 measure only assesses criterion B of the DSM-5 Alternative Model of Personality Disorders, therefore the impairment criteria included in criterion A were not assessed in this study. Research using the assessment of both criteria is encouraged to further inspect the links between interpersonal deficits and maladaptive personality.

This study also made use of the PID-5 at a trait domain level, therefore only maladaptive personality trait domains were assessed. This is a particularly important limitation of the study, in the sense that trait facet level data could have allowed for a more in-depth analysis of particular arrangements of trait facets which are core features of specific Personality Disorders, allowing for a more meaningful comparison to previous research. For example, the proposed Personality Disorder configuration scores were calculated using items that belonged to trait domains associated with their respective Personality Disorders, but the full set of items was not available to fully characterize each disorder, meaning these scores are mere approximations. However, the brief PID-5 is a reliable and valid tool to assess maladaptive personality with previous research finding support for internal consistency, reliability, test-retest reliability and a five-factor structure of this measure (Anderson, Selbom, & Salekin, 2016; and Bach, Maples-Keller, Bo, & Simonsen, 2016; Fossati, Somma, Borroni, Markon, & Kruger, 2017). This is particularly relevant for clinical settings, when the full-length 220-item PID-5 may be too cumbersome to administer on a regular basis. With a brief version, clinicians could evaluate the need for any additional assessment by obtaining broad information about a service user's personality and consider potential diagnoses based on elevated trait domain scores (e.g., an individual scoring particularly high on Antagonism and Disinhibition could meet criteria for Antisocial Personality Disorder).

These limitations stress the need for further extensions and replications of this study. For example, it could be useful to include other methods of data collection other than self-report measures, in order to understand homelessness in a multi-dimensional way, as many studies that focus on this particular population rely exclusively on self-report measures (Edidin et al., 2012). This, however, may be particularly challenging to achieve as homeless individuals often have ruptured social networks which may limit

the collection of informant-reported measures from participants acquainted with homeless individuals.

Furthermore, the inclusion of relationship variables could also help provide insight into the links between close relationships, maladaptive personality and homelessness situations, as research has shown that the breakdown of close relationships and family ties is one of the many pathways that can lead individuals into homelessness (Mallett, Rosenthal & Keys, 2005; Chamberlain & Johnson, 2011; Bower, Conroy, & Perz, 2017). It could also be a way to assess the impact of a current relationship during a period of homelessness, as previous research has shown it can impact negative and positive behaviors in homeless samples (Neaigus et al., 1994; Loates and Walsh, 2010).

Latent Profile Analysis could also be used in future personality studies as this approach is in line with the hierarchical nature of the conceptualization of personality. Future research could bring more clarification into the use of personality typologies and aim to establish an agreement on how many are meaningful and clinically useful.

Moreover, as mentioned above, it could be beneficial to include a measure of personality functioning in future studies to assess impairments in terms of self and interpersonal functioning to fully assess personality pathology as conceptualized in the DSM-5. In this particular sample, the assessment of personality functioning could be particularly helpful to strengthen the links between maladaptive personality, breakdown of relationships and homelessness. Finally, future research should make use of the long form of the PID-5, allowing for an assessment of 25 maladaptive trait facets in addition to the 5 trait domains examined in the present study for a full characterization of Personality Disorders which present specific combinations of personality trait facets.

5.8 Conclusion

Results from this study support previous research showing that homeless individuals present higher levels of maladaptive personality when compared to community dwellers. Equally, results have evidenced that the scores from homeless individuals did not differ (apart from Antagonism, in which they scored higher) from those of an empirical clinical sample. This study also inspected how maladaptive

personality trait constellations occur in homeless individuals and how they differ from those in the community, suggesting that while homeless people are less heterogenous in terms of severity groups, there is a degree of heterogeneity amongst these individuals. This study also contributes to the research using the DSM-5 Alternative Model for Personality Disorders by assessing maladaptive personality using the PID-5 in a specific population, particularly by using the brief format which may be particularly helpful with vulnerable populations in which more burdensome versions may be more difficult to collect.

Chapter Six

General discussion

6.1 Overview

This chapter will review the key findings of the Thesis, taking into account their implications for current theory and practice. It will also acknowledge broad limitations of the research as well as ideas for further studies.

6.2 Key Findings

The research program described in this Thesis aimed to examine and understand how maladaptive personality impacts how individuals relate to each other, particularly how these traits are associated with personality functioning, attachment, and satisfaction and intimacy in a relationship. Previous research presents evidence of links between personality and interpersonal aspects, yet most of it focused on different conceptualizations of personality, using either categorical models for Personality Disorders, or the Five-Factor Model. The studies presented in this Thesis assessed the links between maladaptive personality using the DSM-5 Alternative Model for Personality Disorders, and attachment, satisfaction and intimacy in a relationship, as well as personality functioning. The main findings of the Thesis are described below in reference to the overall Thesis aims outline from Chapter One.

6.2.1 Aim 1: Relationships between maladaptive personality and personality functioning

The first aim of the Thesis was to examine the links between maladaptive personality and personality functioning, as the proposed conceptualization of personality pathology in the DSM-5 relies on a definition in terms of 'self' and 'interpersonal' functioning (Skodol, 2012). The assumption that personality pathology, as well as its severity, can be understood in terms maladaptive behavior associated with

self and in interpersonal relations opened new doors to research and allowed for the development of numerous models to operationalize personality functioning (Berghuis, Kamphuis, & Verheul, 2014). Research had previously established links between general personality dysfunction and specific personality traits (see Berghuis et al., 2014), but these relationships were ascertained with the use of the Five-Factor Model, which showed associations between Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness with personality functioning measured by the SIPP-118.

To the best of our knowledge, the relationships between maladaptive personality and personality functioning were only assessed using the Severity Indices of Personality Problems (SIPP-118) to operationalize personality problems and the PID-5 to assess maladaptive personality traits in one previous study (Rossi et al., 2016). The study described in Chapter Two of this Thesis aimed to reproduce these findings as well as extend them by expanding on the methods used by these authors. The first step into this aim was to validate the PID-5-SF, the 100-item version of the PID-5, for which psychometric evidence on its factor structure was limited. Results from our Confirmatory Factor Analysis suggested that the model fit for a five-factor structure of the PID-5-SF fell short of meeting the acceptable criteria. Although this result does not align with the findings of Maples et al. (2015) and Bach et al. (2015), which found adequate model fit for this measure, it is important to note that previous studies using CFA with personality inventories (e.g., Hopwood & Donnellan, 2010) also did not meet the suggested cut-off criteria in their analysis of personality data, with some authors suggesting that the complexity of personality data may play a role in the misfit (see section 6.3 for a proposed approach). That said, and despite acceptable internal consistency coefficients found for this measure, caution is therefore advised when interpreting the results from this study, as factorial validity could not be confirmed. Equally, future studies using this version of the PID-5 should consider that the evidence of its factorial validity is mixed, as our findings showed that a five-factor structure did not meet the acceptable criteria.

Overall, the results of this study seem to confirm those found by Rossi et al. (2016), namely that all correlations between the Personality Functioning domains and the PID-5 trait domains were negative and particularly strong between Negative Affectivity and Self-Control, Detachment and Identity Integration, Disinhibition and

Responsibility, Detachment and Relational Capacities, and between Social Concordance and Detachment and Antagonism. Additionally, akin to the results by Rossi et al. (2016) these correlations had small to medium effect sizes, suggesting that both levels of maladaptive personality trait domains and personality functioning are associated as expected whilst each have unique variance. Equally, when compared to results using the Five-Factor Model, the results from our study showed significant negative correlations between the Personality Functioning domains and the corresponding opposite maladaptive personality trait domains. These findings add strength to the alternative model by replicating results using the same operationalization and by aligning with the proposed differentiation between impaired personality functioning (criterion A) and the presence of maladaptive personality traits (criterion B), as proposed in the alternative model. These results also underline that the DSM-5 model for personality pathology, albeit not matching perfectly, can be theoretically understood as an extension of the Five-Factor Model.

In order to try and disentangle the complex relationship between personality pathology and personality functioning, this study expanded on the methods of Rossi et al. (2016) by including regression analyses to further understand the extent of joint and unique associations of multiple predictors and how much variance they accounted for. The results from these analyses also showed that maladaptive personality can significantly and negatively predict Personality Functioning. Based on the correlational findings of Rossi et al. (2016) we expected Negative Affectivity to explain a moderate to large amount of variance of Self-Control and Identity Integration, which was verified (Negative Affectivity contributed 36.2% to the variance of Self-Control, and 21.6% to the variance of Identity Integration). However, we also found that the strongest predictor of Identity Integration was in fact Detachment (contributing 57.5%). Further research may be needed to clarify how Detachment impacts Identity Integration, but particular aspects of this maladaptive trait domain (such as withdrawal from meaningful relationships) could potentially play a role. Interestingly, Detachment was also particularly important explaining the variance in other models, highlighting that this particular trait domain (which characterizes Personality Disorders such as Borderline and Avoidant, for example) may be particularly detrimental to personality functioning. It is also noteworthy that, contrary to expectations from correlational findings, Antagonism positively predicted Identity Integration and Relational

Capacities. We hypothesize that self-report tools may be better suited to measure internalizing problems (which often cause subjective distress) than externalizing problems (such as Grandiosity, for example, a trait facet belonging to the Antagonism domain), which are potentially better measured by informant reports (Rossi et al., 2014).

With the exception of Responsibility, the dimensions of the SIPP-SV relate to the criterion A domains of self- and interpersonal functioning in the dimensional model. The correlational patterns found in our study suggest that the SIPP-SV is a potential measure of impairment of personality functioning (criterion A), as it seems to helpfully assess this criterion and it shows expected relationships when predicted by maladaptive personality.

Overall, the evidence presented in Chapter 2 seems to confirm the associations Personality Functioning domains and maladaptive personality, matching the idea of an inverse relation between the severity of personality pathology and the level of an individual's adaptation, as well as their adaptive capacities (Lien & Arnevik, 2016). The establishment and replication of significant links between maladaptive personality and personality functioning, in which the lack of adaptive functioning is indeed associated with more severe personality pathology, provides evidence in support of a more integrative approach to the conceptualization and assessment of Personality Disorders in the DSM-5.

6.2.2 Aim 2: Links between maladaptive personality and attachment

The second aim of the Thesis was to investigate the relationships between maladaptive personality and attachment domains. Although associations between personality and attachment are well established in the literature, most of the research addresses these associations using the Five-Factor Model and the Big Five Traits (Openness, Consciousness, Extraversion, Agreeableness and Neuroticism), as operationalized by the NEO-PI-R.

The findings from our two studies showed that attachment dimensions are associated with maladaptive personality, and maladaptive personality appears to be a significant predictor of attachment. Correlational findings indicated strong positive correlations between Attachment Anxiety and Negative Affectivity, and between

Attachment Avoidance and Detachment. Additionally, the results from this study also showed that Personality trait domains were significant predictors of the Attachment dimensions, albeit with some notable differences. In both studies, Negative Affectivity was a significant negative predictor of Attachment Anxiety, matching results from previous research with the FFM in which aspects of Neuroticism were associated with Attachment Anxiety. In Study 2, however, Detachment was also a positive predictor of Attachment Anxiety. Across both studies, Detachment was found to be a significant predictor of Attachment Avoidance. Interestingly, regarding the other PID-5 trait domains, some different results were found in the two studies. For example, in Study 1, Antagonism was a negative predictor of Attachment Avoidance, which was not verified in Study 2, where Negative Affectivity was a negative predictor. Moreover, in Study 2, we found that Disinhibition was also a positive predictor, yet not as strong as Detachment. Looking at the relative contributions of the regressors to the model's total explanatory value, we found similar results across both studies: in the Attachment Anxiety models, Negative Affect had the highest relative importance, contributing the most in the model (72.2% in Study 1, 53.4% in Study 2); in the Attachment Avoidance models, Detachment was the highest contributor with 64.3% relative importance on Study 1 and 74.1% on Study 2.

Overall, these findings highlight the predictive quality of these PID-5 trait domains, particularly Negative Affect and Detachment, matching previous research conducted with the FFM. Additionally, Attachment is a particularly remarkable construct to address, as adult attachment is the foundation of individuals' understanding and expectations about their relationships (Fraley & Shaver, 2000). The use of attachment models to understand and study close relationships in adulthood offers invaluable insight into the way these relationships are experienced. Past research has also looked into gender and cultural differences in the way attachment occurs and relates to social and relationship outcomes, with some studies finding gender differences. The studies described in Chapter Three included a moderation analysis with the aim of inspecting this layer of interaction of gender in how personality explains attachment styles, but our results did not find a significant effect. However, and contrary to previous research, we also found that male participants from the community sample scored higher in the Attachment Anxiety dimension. As our community sample was UK based, these findings could suggest potential cultural variability of attachment

styles and highlight the need to further inspect how gender is related to romantic attachment, taking into account that cultural differences (e.g., expected gender roles) may play a part.

By looking at how personality explains romantic attachment, we contribute to the body of knowledge that theorizes that personality, particularly maladaptive traits, impact the way individuals relate to each other. Our findings suggest that Negative Affect and Detachment are important trait domains when it comes to explaining Attachment styles. These findings are also consistent with other empirical studies described in this Thesis, in which Detachment is particularly relevant in the relationship between personality and experiences in close relationships.

To summarize, the evidence presented in Chapter Three indicates that attachment dimensions are associated with maladaptive personality traits and can be significantly predicted by these traits. This is a potentially important finding as the links between attachment and maladaptive personality, as conceptualized by a dimensional model, are yet to be fully established in the literature. Therefore, this Chapter contributes to the research making use of the PID-5 as a way to operationalize personality pathology. It also highlights the importance of the impact personality has on the way individuals relate to each other, in this case in the particular context of attachment towards a significant other. The findings indicate that personality plays an important role in how human beings behave and feel towards one another.

6.2.3 Aim 3: Links between maladaptive traits and relationship intimacy and satisfaction

The third aim of this Thesis was to examine the role of maladaptive personality in the context of romantic relationships. Motivated by the rationale that personality pathology in the DSM-5 is conceptualized as interpersonal at its core, Chapter Four describes a study that set out to establish links between maladaptive personality and relational variables, specifically satisfaction and intimacy in a romantic relationship. Although associations between personality and relationship variables are recognized in the literature, research has either focused on particular Personality Disorders (Mulder, 2012) or on the Five-Factor Model as a way to operationalize adaptive personality (e.g., Malouff et al., 2010; Shiota & Levenson, 2007). Most of the research has linked

Neuroticism to dissatisfaction and decreased levels of intimacy in a romantic relationship (Botwin et al., 1997; Nemechek & Olson, 1999; Claxton et al., 2011).

In this chapter, Detachment emerged as a particularly problematic personality trait domain. For example, Detachment was associated with a lower number of relationships, with how likely it was for individuals to be in a relationship and with how long individuals had been single for. Correlations between Satisfaction in a relationship and maladaptive personality trait domains also showed that Detachment (along with Disinhibition) exhibited some negative and moderate associations. Looking at research with the Five-Factor Model, associations between Extraversion (FFM variant of Detachment) and Conscientiousness (FFM variant of Disinhibition) are also documented in the literature, highlighting once again that the DSM-5 model can be understood as a maladaptive variant of the Five-Factor Model. When addressing how much variance was explained by maladaptive personality when predicting Satisfaction, Detachment emerged as a negative predictor with a high contribution to the variance explained. Decuyper et al. (2018) had also documented this relationship, as well as the fact that Disinhibition also negatively predicts satisfaction; a result we also found. We found no evidence that Negative Affectivity nor Antagonism were predictors of Satisfaction, however the former did not align with previous research. That said, this relationship between Negative Affectivity and Satisfaction was found in a sample that included 12 clinical couples, which can not only explain the result but also speak to the ability of the PID-5 to capture elevated levels of Negative Affectivity. Regarding Antagonism, it is important to note that any expected association would be drawn from research using the FFM, in which Agreeableness and dissatisfaction are associated. The lack of significant findings in our study suggests that the PID-5 may be better suited to capture elements of personality related to Antagonism which are not completely encompassed by low Agreeableness in the FFM.

When inspecting the associations between the PID-5 trait domains and Intimacy domains, Detachment emerged once again as a trait domain playing a significant role. Correlational results showed that this trait domain was negatively associated with all the Intimacy domains (Emotional Intimacy, Social Intimacy, Sexual Intimacy, Intellectual Intimacy and Recreational Intimacy). Equally, several negative associations between Intimacy and personality trait facets were also found, the strongest one being with Intimacy Avoidance, a trait facet encompassed by the

Detachment trait domain. When accounting for variance explained, results also showed that Detachment negatively predicts all the Intimacy domains. Disinhibition was also found to be a negative predictor of Emotional and Intellectual Intimacy, and while other maladaptive personality trait domains were also found to be positive predictors of Intimacy (e.g., Psychoticism predicted Emotional, Intellectual and Recreational Intimacy domains), none explained as much variance as Detachment being a negative predictor.

In order to further inspect how criterion A and criterion B impact experiences in close relationships, a structural equation modelling approach was undertaken, confirming that maladaptive personality has an impact on Intimacy and Satisfaction. Moreover, a significant fully mediated relationship between personality and satisfaction was confirmed. Although links between personality and particular relationship variables have been established in the literature, the approach described in this study made use of the dimensional model and used a structural approach to test these links as well as mediation effects which had yet remained unexplored. The results suggested that maladaptive personality, measured by PID-5 domains, does play a role in impacting how individuals experience their relationships and how satisfied they are by also negatively impacting how individuals' intimacy occurs in said relationships. Our results suggest that worse relationship satisfaction reported by individuals with elevated maladaptive personality can be explained by the fact that those individuals also present worse intimacy in their relationships, which in turn is associated with poorer satisfaction. This highlights how criterion A (deficits in intimacy) mediates the relationship between criterion B (maladaptive personality) and relationship satisfaction, an important consideration of how personality pathology, encompassed by both deficits in intimacy and maladaptive personality traits, can impact and erode relationship satisfaction.

Lastly, we explored the associations between maladaptive personality and Break Up Reasons in an attempt to catalyze research looking at how maladaptive personality relates to relationship termination. This could be a particularly interesting area of research, as it is well established how relationship breakdown can have negative consequences for an individuals' wellbeing. The correlational findings yielded some positive albeit weak associations between maladaptive personality trait domains and

some of the Break Up Reasons, suggesting some associations between personality and why individuals terminate romantic relationships.

Overall, maladaptive personality plays a role in how individuals relate to each other, in the sense that it impacts their relationship satisfaction and the intimacy they experience in a romantic relationship. This study ascertained that Intimacy, Satisfaction and maladaptive personality are negatively associated, with Detachment being remarkably important in this relationship. One of the noted impairments described in the alternative model relates to intimacy, i.e. the duration and depth of connection with others, as well as the capacity and desire for closeness, which, as shown by this study, is negatively associated with maladaptive personality, strengthening the rationale for a dimensional conceptualization of personality pathology associated with impairments in interpersonal functioning and adding to the research using the DSM-5 model. The incapability to pursue close and meaningful intimate relationships is indeed essential to the conceptualization of personality pathology. Additionally, as romantic relationships are an integral part of the human experience, understanding how personality can have an impact in the way we experience them is notably important.

6.2.4   Aim 4: Maladaptive personality traits among different samples.

The last aim of this Thesis was to inspect the occurrence of maladaptive personality among different samples, particularly in a sample which has been noted to experience higher rates of Personality Disorders: homeless individuals. The previous empirical chapters have shown that Detachment is particularly associated with deficits in interpersonal functioning and dissatisfaction in close relationships, suggesting that it could be responsible for the erosion and deterioration of significant relationships over time. Relationship breakdown has been identified as the main factor in the pathway to homelessness and, as such, it is hypothesized that the frequent personality pathology found among homeless people may have been detrimental to their relationships, potentially causing a breakdown that led them into homelessness. This chapter aimed to inspect how personality pathology severity differs between this sample and other samples, but also how it varies within it.

Results from this study showed that maladaptive personality scores are significantly higher amongst homeless individuals when compared to a community

sample and an empirical sample, reinforcing the established research reporting on higher rates of personality pathology among homeless people. Equally, when compared to an empirical clinical sample with formal Personality Disorder diagnoses, scores from all the PID-5 trait domains except Antagonism did not differ between the two samples. However, the homeless sample scored significantly higher than the clinical sample, with a medium standardized effect size, in the domain of Antagonism, a personality trait domain that characterizes Antisocial Personality Disorder, which research has evidenced as being particularly prevalent among homeless individuals (Jainchill, Hawke & Yagelka, 2000; Ball, Cobb-Richardson, Connolly, Bujosa, & O'Neall, 2005; Salavera, Tricás & Lucha, 2011). Overall, these results were expected since research has established higher rates of Personality Disorders in homeless people. However, this assessment had never been made using a dimensional model, underlining that it is in fact a useful and clinically relevant model to measure personality pathology in the sense that it captures differences between samples with lower expected severity and those with higher.

This study also used a brief version of the PID-5, which could be a useful measure to assess personality pathology with homeless people as it is remarkably quick to administer. The use of an abridged yet reliable measure that adequately screens for elevated personality pathology is particularly relevant for clinical practice in situations where it is difficult to have more lengthy measures completed.

The last findings from this study relate to a Latent Profile Analysis in which it was attempted to categorize participants in groups based on the severity of their maladaptive personality. It was hypothesized that homeless individuals would be a heterogenous group, which was verified since 3 distinct groups have emerged. When applying the same statistical technique to the community sample, 6 groups emerged, suggesting that the general population may experience more variability in terms of severity. Interestingly, among the community sample, most groups had all domain scores around the same mean, with variations between groups, apart from one group which presented slightly above average Negative Affectivity. More research is needed to understand how particular configurations of combined trait domain severity occur; however, this study will hopefully incentivize the use of Latent Profile Analysis as a technique that is suited for a dimensional approach such as the alternative model.

Additionally, it is hoped that these results can also start further research using the dimensional model with homeless individuals, with a particular incidence in the mechanisms of relationship breakdown using the conceptualization of personality pathology in terms of criterion A and criterion B, but also how this chain of relation occurs (as explored in Chapter Four) and how it could be damaging for the sustenance of significant close relationships.

6.3 Implications for theory

In Chapter One the literature on the development of the DSM-5 Alternative Model for Personality Disorders was outlined to emphasize the importance of new research using this model. Establishing significant associations between interpersonal aspects and personality pathology at trait level using the dimensional model was the general goal of this Thesis. Overall that goal was achieved as significant links were ascertained, particularly in terms of relationship satisfaction and intimacy, and adaptive capacities. The research described in this Thesis also compared the severity of maladaptive personality across different samples, some which had never been addressed before.

It particularly strengthens the fundamental characteristic of the DSM-5 model, which is the definition of personality pathology by involving dysfunction of self and in relation to others (empathy and intimacy) (Hopwood et al., 2013). This dimensional rating for Personality Disorders operates on an interpersonal level, which is why establishing links between the maladaptive traits and relational variables is of great importance. As the dimensional model tackles limitations and issues intrinsic to categorical diagnostic criteria, a multifactorial description of an individual's personality pathology recognizes a set of maladaptive traits that are linked to self and interpersonal problems.

In this Thesis it was shown that maladaptive traits have associations with several self and interpersonal issues, such as anxious and avoidant attachment, deficits in satisfaction and intimacy (interpersonal), and deficits in adaptive capacities/personality functioning (self). By establishing these links, the evidence presented contributes to the research done with the alternative model, highlighting the relationships between personality pathology and interpersonal aspects, and strengthening the dimensional

approach to personality. The findings presented in this Thesis show that measures of criterion A and criterion B share common variance, in accordance to previous research by Few et al., (2013), Huprich et al. (2018), and Roche, Jacobson and Phillips (2018), but also underline that criterion B explains the variance of criterion A well, with some domains being particularly notable at doing so (e.g., Detachment). A Structure Equation Modelling (SEM) approach also allowed for the inspection of how a the chain of relation of the criteria would impact experiences in close relationships, with results suggesting that a full mediation effect is particularly detrimental to experiences of satisfaction. The empirical studies presented in this Thesis confirmed previous correlational findings with the dimensional model (e.g., Chapter Two) and expanded on these by including regression analyses to account for variance explained, as well as a SEM approach to examine the mediating effects of criterion A. Overall, this contributes to a better understanding of the dimensional model; while criterion A and criterion B share aspects, they can also be perceived as separate, and a mediating effect could also explain how individuals experience their close relationships.

The findings presented in this Thesis also add insight into the assumed convergence between Five-Factor Model (FFM) and the alternative model for the DSM-5. The understanding that the DSM-5 model can be assumed as a maladaptive variant of a general personality structure has been established in the literature (Hopwood et al., 2012; Gore & Widiger, 2013; De Fruyt et al., 2013), with some notable caveats. For example, the inconsistency of associations between the PID-5 Psychoticism and the FFM Openness sparked suggestions that Openness has no meaningful implications for Personality Disorder and that the FFM may be inadequate to conceptualize and capture personality pathology (Saulsman & Page, 2004, O'Connor, 2005). The results described over the chapters are mostly consistent with those found with the Five-Factor Model, e.g., in Chapter Three the significant negative correlations found between the Personality Functioning domains and the PID-5 domains matched those between the Personality Functioning domains and the corresponding FFM domains established in previous research. However, in Chapter 4 it was hypothesized that Antagonism would be negatively associated with relationship satisfaction as research with the FFM had shown significant associations between satisfaction and Agreeableness (the adaptive variant of Antagonism). Our results and those of Decuyper et al. (2008) did not find this relationship, which suggests that the

relationship between the FFM and the DSM-5 dimensional model may not be as straightforward. This highlights the need for a model of personality pathology that encompasses aspects which are not well represented by the FFM, strengthening the rationale for the use of the proposed DSM-5 alternative, which would be more suited to describe and assess personality pathology beyond the extent of the FFM.

The studies presented in this Thesis also contribute to the growing research making use of the Personality Inventory for the DSM-5, in all its different versions, establishing significant relationships with this measure, but also providing more details about its reliability and utility in a number of different samples. Across this Thesis the empirical studies have used three different versions of the PID-5, all showing adequate reliability across multiple samples. In Chapter Two, we attempted to confirm the 5-factor structure of a less used yet less extensive version of the PID-5 (the 100 item PID-5-SF), with results suggesting a less than adequate fit using conventional indices. This result does not match previous research that has found a 5-factor structure for the PID-5-SF, however statistical research has been clear that structures with seemingly good measurement quality are often rejected using the standard measures of fit in Confirmatory Factor Analysis procedures (McNeish, An & Hancock, 2017), particularly when it comes to personality data where meaningful cross-loadings may occur (Hopwood & Donnellan, 2010). A possible solution for this issue has been suggested in the literature, for example the selection of items or facets that would act as markers for a particular factor, then specifying in the model that the loading of these items or facets would be set to zero on all the other factors, allowing for a free estimation of all other loadings (Ferrando & Lorenzo-Seva, 2000). However, this proposed approach for an Unrestricted Factor Analysis presents its own difficulties, as there are no clear criteria regarding the choice of which items/facets should be assigned as markers.

In addition to the use of three different versions of the PID-5, the empirical chapters of this Thesis have also compared maladaptive personality scores across multiple samples and with empirical data. For example, in Chapter 3, using the full version of the PID-5, the student sample was compared to empirical student sample comprised of 2,461 participants (Wright et al., 2012), and the community sample was compared to an empirical community sample comprised of 925 participants (Bach et al., 2015). In this first comparison, we found that our sample had significantly higher

and lower scores in 6 of the 25 trait facets, whereas in the second comparison between two community samples most trait facet scores differ significantly, with scores from our study being higher. These findings highlight the need to explore the relationships between culture and personality which have yet to fully addressed. In fact, the dimensional model for the DSM-5 presents the opportunity to investigate this relationship making use of a model that better captures the nuances of human personality, allowing for more meaningful investigations to occur.

Other comparisons conducted during the course of this Thesis were particularly relevant to the clinical utility of the PID-5 and the overall dimensional model. When compared to a clinical sample with formal DSM-IV-TR diagnoses, our homeless sample did not differ greatly, suggesting that the PID-5 operationalization captures personality pathology very adequately. In fact, it also unveiled an interesting finding, participants from our homeless sample scored higher in the Antagonism trait domain, confirming previous literature findings that suggested this trait domain could be particularly elevated amongst this population. Additionally, when compared against community samples and empirical community samples, significant differences were also found, with homeless individuals scoring higher, suggesting that the PID-5 could be a useful instrument to measure personality pathology and discriminate between those with more severe levels.

6.4 Implications for practice

The addition of an alternative model for Personality Disorders in the DSM-5 is a promising inclusion for the research and treatment of these disorders. Research that inspects and evaluates this model and the extent to which maladaptive personality reflects extreme variants of normal-range personality traits, alongside ascertaining the implications of personality pathology for functioning in domains such as close relationships is crucial to move the field forward. The empirical studies presented in this Thesis have shown significant links between maladaptive personality and interpersonal functioning, which reinforces the need for clinicians to evaluate the severity of its impairment, potentially allowing for a better therapeutic approach that takes into consideration the impact of personality in a patient's close relationships and support network. When working with patients with personality pathology clinicians

can also focus on helping them towards establishing and maintaining meaningful close relationships, while taking into account that maladaptive personality and deficits in intimacy, satisfaction and adaptive capacities are intrinsically connected.

As established by the evidence presented in this Thesis, lacking adaptive capacities and impairments in close relationships are inversely related to maladaptive personality, so a therapeutic approach based on strengthening these capacities could potentially offer some good outcomes in the well-being of patients with Personality Disorders. Moreover, according to McGlashan et al. (2005), personality traits are more embedded in the biological makeup of an individual than more socially learned adaptions, such as self and interpersonal functioning. Being a common denominator amongst Personality Disorders, personality functioning deficits should be the target of psychotherapeutic interventions as these could have more impact on personality functioning than altering an individual's personality traits (McCrae et al., 2000). In accordance with this, Clark (2009) stresses that initial therapeutic efforts should primarily focus on more malleable Personality Disorder symptoms, as changing personality traits is more successful by the means of long-term therapeutics, and targeting personality functioning problems could provide the patient with the relief of more prominent symptoms.

The proposed DSM-5 model establishes that a moderate level of impairment in personality functioning is required for a Personality Disorder diagnosis, suggesting that the identification of this impairment optimizes an efficient and accurate identification of a Personality Disorder by clinicians (APA, 2013). The evidence presented in this Thesis, establishing significant links between personality functioning and the trait model, further contributes to this rationale, hopefully strengthening the alternative model as the future way of conceptualizing, identifying, and providing treatment options for patients with Personality Disorders.

While a categorical approach may be favored by some practitioners and clinicians (Spitzer, First, Shedler, Westen, & Skodol, 2008), the benefits of a dimensional assessment are invaluable. Personality dysfunction below categorical diagnostic thresholds is better represented in a dimensional model which captures the nuances of personality pathology. This dysfunction has a significant negative effect on an individuals' personality functioning (Chapter Two), social functioning (Chapter Three and Four) and general wellbeing (Skodol et al., 2005; Yang, Coid, & Tyrer,

2010). In clinical settings, identifying these disturbances can be crucial as the more severe the personality pathology is, the stronger its negative effect on personality functioning and social dysfunction may be; with a detrimental effect on an individuals' quality of life, which can often be compared to the same burden as severe somatic illnesses (Soeteman, Verheul, & Busschbach, 2008).

Distinctions of severity made along a continuum are useful for several clinical and social decisions, such as when to hospitalize, medicate, provide disability benefits or insurance coverage, for example. The DSM-IV nomenclature lacks clinical utility in the sense that the thresholds do not relate well to clinical decisions. Furthermore, a single diagnostic threshold may not cover all the different clinical decisions either. A dimensional model, however, such as the one addressed in this Thesis, has the potential to offer different thresholds for different social and clinical decisions, relating to the level of impairment in an individual's social and personality functioning. These aspects were explored in Chapter Five using Latent Profile Analysis, with results suggesting that meaningful and distinct groups of personality pathology severity can be estimated using the PID-5. While there are no proposed cut-offs for the PID-5 as of now, these results suggest that an assessment of personality pathology in a more continuous way could be explored, allowing for the establishment of clinically useful thresholds. However, these results also reinforce the idea that personality exists on a continuum rather than as discrete binary categories operationalized as either present or absent. This is arguably an advantageous approach when it comes to clinical practice. As we have evidenced in this Thesis, there is variability in how personality pathology presents, even amongst populations deemed to be more homogeneous in diagnostic terms. A dimensional model allows for clinicians to assess which personality traits are particularly salient (and potentially problematic), allowing them to make therapeutic decisions that can target the interpersonal impairments associated with these traits. By assessing the associations between criterion A and criterion B, research like the one presented in this Thesis offers valuable information for clinicians when they are confronted with salient or elevated personality traits in their patients. For example, as seen throughout this Thesis, the Detachment domain and its facets explain some interpersonal and relationship dysfunction; therefore a clinician could inform their therapeutic approach based on the expectation of which aspects of these dysfunctions are likely to occur associated with particular personality traits. This way, clinicians can

be more precise in the identification of which areas of personality functioning require most attention in their therapeutic intervention.

Another particular implication for clinical practice relates to one of the most prominent criticism of the dimensional model: the burdensome aspect of its instrument, the PID-5. The studies described in this Thesis have made use of three versions of this measure, with the least lengthy one being the brief PID-5. This measure, despite having a very limited set of items and only being able to encompass personality pathology trait domains, could offer valuable insight into an individuals' personality. As explored in Chapter 5, scores from a sample of homeless people (more likely to experience Personality Disorders) were not statistically different than those from a clinical sample with formal PD diagnoses. Considering this is a relatively quick measure to fill out, our results and previous research addressing the validity of this measure suggest that it is a good option to assess personality when it is not possible or feasible to administer a full 2220 item version of the PID-5. This is particularly relevant to more vulnerable populations, in which the conditions for measure completion may be more difficult to attain. Using a brief version, clinicians can quickly screen for particularly elevated scores in this measure and hypothesize diagnosis: for example, individuals with elevated scores on both Antagonism and Disinhibition could qualify for an Antisocial Personality Disorder diagnosis. This would allow them to offer options to their patients for further screening or direct routes of treatment (e.g., Personality Disorder services).

The last implication for practice relates to another criticism of the alternative model; the description of personality pathology in terms of traits versus syndromes. Shendler et al. (2010) argued that the dimensional model may not be helpful for clinicians as they are used to thinking of Personality Disorders as syndromes, whereas researchers tend to think in terms of variables. It is hoped that the work described in this Thesis shows that by conceptualizing personality using a dimensional-trait model is equally informative. For example, individuals that score highly on the Detachment trait domain and trait facets are more likely to experience dysfunction in their relationships, more likely to be single, and more likely to report deficits in intimate relationship satisfaction. By examining how particular personality traits relate to other variables (with a particular focus on experiences in close relationships in this Thesis), research is also providing clinicians with useful information that they can take into account when developing therapeutic strategies.

Thinking of Personality Disorders in terms of traits may be more difficult to communicate with other clinicians and so a shared language is fundamental for the progress of clinical practice. However, a dimensional model can also offer particularly important insights into the variability of different traits within the same disorder, accounting for the documented heterogeneity among persons with the same Personality Disorder diagnosis. For example, with the DSM-IV criteria, two individuals can be diagnosed with the same Personality Disorder and have very different diagnostic characteristics. It is hoped that the work addressed in this Thesis, exploring how particular traits impact individuals' experiences, informs the growing body of research using the alternative model, but it is also hoped that results from this body of research can instigate a paradigm shift into a more complex and nuanced way of looking at personality pathology.

6.5 Limitations

Specific limitations for each study have been described in the respective chapters. Here are stated some overall limitations of this Thesis:

The first limitation regards the fact that all the empirical studies of this Thesis used samples with a female bias, with all samples (apart from the homeless one) having over 60% female participants. In Chapter Three, we looked at some gender differences across the PID-5 personality trait domains and trait facets, with results showing men reporting higher levels of Callousness, Deceitfulness, and Restricted Affectivity in the student sample. In the community sample, males scored significantly higher on the Antagonism domain, but equally on trait facets such as Attention Seeking, Deceitfulness, Eccentricity, Grandiosity, Manipulativeness, and Suspiciousness. Previous research by Furnham and Trickey (2011) also found gender differences on most Personality Disorders, especially with males scoring higher on Schizoid and Antisocial Personality Disorders (DSM-IV), so gender differences are to be expected in the trait domains and trait facets we encountered. It is then acknowledged that the overrepresentation of female participants could cause difficulties when generalizing the results, which highlights the need to achieve more balanced gender ratios in future studies, but also to conduct more gender-focused studies using the dimensional model.

Secondly, although the use of both community samples and student samples was undertaken throughout this Thesis, there are limitations in the use of student samples which have been detailed within each chapter that made use of them. Generally, student samples are particularly common in psychological research due to the facility in recruiting students, the lower costs of administration (if any), and also an assumed lower response bias (Arnett, 2008). The feasibility and ease of using student samples may come with a tradeoff, but it also presents the opportunity to inspect the personality traits of one of the most studied groups in modern day research.

A third limitation regards the exclusive use of self-report measures. Self-report measurement is the most preferred method in personality psychology, with 98% of studies assessing personality traits published in the Journal of Research in Personality in 2003 used self-report tools (Vazire, 2006), and more than 95% of the studies reported in the Journal of Personality in 2006 used self-report measures too (Kagan, 2007), for example. The vast majority of the measures used in the studies reported are widely used and yield good psychometric qualities, a paramount aspect to the use of such tools. We also argue that an individual possessing a particular personality trait should be able to provide the most accurate information about this. Additionally, respondents are likely to be more inclined to talk about themselves than others, as they identify with the questions in ways that other individuals do not (Paulhus & Vazire, 2007). Self-report questionnaires also have other advantages, such as being a quick and inexpensive way of collective large amounts of data often necessary for more sophisticated statistical procedures which require large sample sizes (Westen & Rosenthal, 2005). These questionnaires are also particularly practical to use both in University settings or in Internet data collections, and fears about lack of diversity in online samples have been debunked (Gosling, Vazire, Srivastava, & John, 2005; Sue & Ritter, 2007). Research has also shown that there is an overlap between self- and informant-reports. For example, a large-scale meta-analysis ($N = 33,033$; $k = 152$ samples) conducted by Kim, Di Domenico, and Connelly (2019) compared the means of self- and informant reports of the same target's Big Five personality traits in order to ascertain if there were discrepancies in these two rating sorts and whether individuals see themselves in a more positive light than they are seen by others. The results showed that self-report measures generally did not differ from informant-report means (average $\delta = -.038$). The notable exception happened when self-reports were compared with stranger reports, in which

moderate mean differences were found, suggesting that individuals may be critical of others they are not acquainted with.

6.6 Future Directions

This section will present suggestions for further research based on the limitations and findings of the Thesis. Within each chapter, specific advances were considered and suggested for further development of the studies, thus here we will present broader suggestions for future research.

One aspect that could be explored further is the issue of situational influences and temporal stability of the PID-5 traits. A recent study by Zimmermann, Mayer, Leising, Krieger, Holtforth and Pretsch (2017) examined these issues on test scores of the PID-5 in a sample of 611 participants who completed this measure three times, with 2 months of time intervals, concluding that on average 79.5% of the variance was due to stable traits, which suggests that the PID-5 trait facets largely encompass individual differences that are stable over time. However, further research that looks into the stability of maladaptive personality in the context of a dimensional model is needed, as trait changes can happen in clinical samples over longer periods of time, as attested by Morey and Hopwood (2013). As most clinical interventions for Personality Disorders tend to focus on trait changes instead of short-term state changes (Zimmermann et al., 2017) more research is needed using the DSM-5 model in order to further understand how maladaptive personality traits vary over time, particularly in a clinical context, as it could provide valuable evidence to improve therapeutic approaches. Furthermore, future research could also make use of longitudinal designs to inspect the stability of these traits and to inspect the causal nature of the links found in the studies of this Thesis, speaking more to the etiology of these disorders.

Another aspect that could further be explored is the use of clinical samples when establishing connections between maladaptive personality and relational variables, or the assessment of adaptive capacities. Similarly, further research with the DSM-5 model and other psychiatric disorders could also provide important information regarding how personality pathology is associated with other mental health disorders,

contributing as well to improve clinical interventions in patients with Personality Disorders co-occurring with, for example, Axis I disorders.

Another suggestion concerns the etiology of Personality Disorders. Research focusing on the correlates of Personality Disorders is important to try and understand how the environment can play a role in the development of personality pathology. To this effect, it is suggested that future research keeps looking into personality pathology using the DSM-5 Alternative Model and its associations with interpersonal functioning, broadening the use of measures (e.g., interviews, peer-reports) and designs (e.g., longitudinal) to provide additional evidence into the associations of personality pathology and environmental variables.

The last point relates to ongoing debate about how to achieve a Personality Disorder diagnosis in the new DSM-5 model. One of the most important messages of the proposed paradigm change in the DSM-5 was the re-conceptualization of Personality Disorder in a dimensional way, in line with the rationale that mental illness is not an all-or-non phenomenon. It is placed within continuous severity, ranging from its absence to more severe pathology. The problems associated with dimensional conceptualizations of mental illness have been addressed in this Thesis, but previous classification systems have mainly focused on classical categorical approaches in distinct nosological entities. However, research such as the one described in this Thesis illustrates that mental illness, specifically personality pathology, can be understood as complex combinations of problems (themselves dimensional). The reconciliation between multi-dimensional approaches to mental illness and approaches that perceive it as more discrete, discontinuous entities may be difficult. Nonetheless, it is hoped that the model in the DSM-5 explored in this Thesis offers an alternative that encompasses personality pathology variation and accounts for the problematic aspects of categorical classifications. More research is, of course, needed to explore what is the best way to separate pathology from "normal variation", and whether the use of the word "disorder" is at all adequate, for example. And while dimensional models may not be a perfect solution, these approaches are advantageous to understand how personality varies, and how the extent of this variation has certain implications for human functioning. The assessment of the combination of this variation and its implications, as well as a phrasing founded on a trait format are perhaps more informative and less stigmatizing than the word "disorder".

6.7 Conclusion

This Thesis has taken an extended look into the impact of maladaptive personality on experiences in close relationships. It was guided by the proposed alternative model in the DSM-5, in which Personality Disorders are conceptualized in a dimensional way and associated with deficits in self- and interpersonal functioning. It aimed to identify the extent of dysfunction associated with maladaptive personality, recognizing particular trait domains and trait facets that impact specific aspects of experiences in close relationships. The research described in this Thesis also addressed how the chain of relation between maladaptive personality and interpersonal functioning was detrimental to fundamental aspects of close relationships. Additionally, it added evidence to the use of the model with different samples and made comparisons between these, allowing to better understand how personality traits vary in severity among different people. Overall, it strengthens the rationale for an inverse relationship between personality pathology and adaptive capacities, satisfaction, intimacy and attachment styles in romantic relationships. It is hoped that it contributed to the on-going efforts to understand how personality pathology and mental illness can erode close relationships and ultimately even lead to extreme consequences. It is also hoped that these contributions can add to the theoretical conceptualization of Personality Disorders in the DSM-5 model, offering evidence to support better therapeutic practice, as well as inspiring further investigation into the issues discussed in this Thesis.

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Appendix A – Personality Inventory for the DSM-5 (PID-5)

Instructions:

This is a list of things different people might say about themselves. We are interested in how you would describe yourself. There are no "right" or "wrong" answers. So you can describe yourself as honestly as possible, we will keep your responses confidential. We'd like you to take your time and read each statement carefully, selecting the response that best describes you.

Each item is rated within the following:

0 – Very False or Often False
1 – Sometimes or Somewhat False
2 – Sometimes or Somewhat True
3 – Very Often or Often True

Items:

1. I don't get as much pleasure out of things as others seem to.
2. Plenty of people are out to get me.
3. People would describe me as reckless.
4. I feel like I act totally on impulse.
5. I often have ideas that are too unusual to explain to anyone.
6. I lose track of conversations because other things catch my attention.
7. I avoid risky situations.
8. When it comes to my emotions, people tell me I'm a "cold fish".
9. I change what I do depending on what others want.
10. I prefer not to get too close to people.
11. I often get into physical fights.
12. I dread being without someone to love me.
13. Being rude and unfriendly is just a part of who I am.

14. I do things to make sure people notice me.

15. I usually do what others think I should do.

16. I usually do things on impulse without thinking about what might happen as a result.

17. Even though I know better, I can't stop making rash decisions.

18. My emotions sometimes change for no good reason.

19. I really don't care if I make other people suffer.

20. I keep to myself.

21. I often say things that others find odd or strange.

22. I always do things on the spur of the moment.

23. Nothing seems to interest me very much.

24. Other people seem to think my behavior is weird.

25. People have told me that I think about things in a really strange way.

26. I almost never enjoy life.

27. I often feel like nothing I do really matters.

28. I snap at people when they do little things that irritate me.

29. I can't concentrate on anything.

30. I'm an energetic person.

31. Others see me as irresponsible.

32. I can be mean when I need to be.

33. My thoughts often go off in odd or unusual directions.

34. I've been told that I spend too much time making sure things are exactly in place.

35. I avoid risky sports and activities.

36. I can have trouble telling the difference between dreams and waking life.

37. Sometimes I get this weird feeling that parts of my body feel like they're dead or not really me.

38. I am easily angered.

39. I have no limits when it comes to doing dangerous things.

40. To be honest, I'm just more important than other people.

41. I make up stories about things that happened that are totally untrue.

42. People often talk about me doing things I don't remember at all.

43. I do things so that people just have to admire me.

44. It's weird, but sometimes ordinary objects seem to be a different shape than

usual.

45.   I don't have very long-lasting emotional reactions to things.

46.   It is hard for me to stop an activity, even when it's time to do so.

47.   I'm not good at planning ahead.

48.   I do a lot of things that others consider risky.

49.   People tell me that I focus too much on minor details.

50.   I worry a lot about being alone.

51.   I've missed out on things because I was busy trying to get something I was doing exactly right.

52.   My thoughts often don't make sense to others.

53.   I often make up things about myself to help me get what I want.

54.   It doesn't really bother me to see other people get hurt.

55.   People often look at me as if I'd said something really weird.

56.   People don't realize that I'm flattering them to get something.

57.   I'd rather be in a bad relationship than be alone.

58.   I usually think before I act.

59.   I often see vivid dream-like images when I'm falling asleep or waking up.

60.   I keep approaching things the same way, even when it isn't working.

61.   I'm very dissatisfied with myself.

62.   I have much stronger emotional reactions than almost everyone else.

63.   I do what other people tell me to do.

64.   I can't stand being left alone, even for a few hours.

65.   I have outstanding qualities that few others possess.

66.   The future looks really hopeless to me.

67.   I like to take risks.

68.   I can't achieve goals because other things capture my attention.

69.   When I want to do something, I don't let the possibility that it might be risky stop me.

70.   Others seem to think I'm quite odd or unusual.

71.   My thoughts are strange and unpredictable.

72.   I don't care about other people's feelings.

73.   You need to step on some toes to get what you want in life.

74.   I love getting the attention of other people.

75.   I go out of my way to avoid any kind of group activity.

76. I can be sneaky if it means getting what I want.

77. Sometimes when I look at a familiar object, it's somehow like I'm seeing it for the first time.

78. It is hard for me to shift from one activity to another.

79. I worry a lot about terrible things that might happen.

80. I have trouble changing how I'm doing something even if what I'm doing isn't going well.

81. The world would be better off if I were dead.

82. I keep my distance from people.

83. I often can't control what I think about.

84. I don't get emotional.

85. I resent being told what to do, even by people in charge.

86. I'm so ashamed by how I've let people down in lots of little ways.

87. I avoid anything that might be even a little bit dangerous.

88. I have trouble pursuing specific goals even for short periods of time.

89. I prefer to keep romance out of my life.

90. I would never harm another person.

91. I don't show emotions strongly.

92. I have a very short temper.

93. I often worry that something bad will happen due to mistakes I made in the past.

94. I have some unusual abilities, like sometimes knowing exactly what someone is thinking.

95. I get very nervous when I think about the future.

96. I rarely worry about things.

97. I enjoy being in love.

98. I prefer to play it safe rather than take unnecessary chances.

99. I sometimes have heard things that others couldn't hear.

100. I get fixated on certain things and can't stop.

101. People tell me it's difficult to know what I'm feeling.

102. I am a highly emotional person.

103. Others would take advantage of me if they could.

104. I often feel like a failure.

105. If something I do isn't absolutely perfect, it's simply not acceptable.

106. I often have unusual experiences, such as sensing the presence of someone who

isn't actually there.

107. I'm good at making people do what I want them to do.

108. I break off relationships if they start to get close.

109. I'm always worrying about something.

110. I worry about almost everything.

111. I like standing out in a crowd.

112. I don't mind a little risk now and then.

113. My behavior is often bold and grabs peoples' attention.

114. I'm better than almost everyone else.

115. People complain about my need to have everything all arranged.

116. I always make sure I get back at people who wrong me.

117. I'm always on my guard for someone trying to trick or harm me.

118. I have trouble keeping my mind focused on what needs to be done.

119. I talk about suicide a lot.

120. I'm just not very interested in having sexual relationships.

121. I get stuck on things a lot.

122. I get emotional easily, often for very little reason.

123. Even though it drives other people crazy, I insist on absolute perfection in everything I do.

124. I almost never feel happy about my day-to-day activities.

125. Sweet-talking others helps me get what I want.

126. Sometimes you need to exaggerate to get ahead.

127. I fear being alone in life more than anything else.

128. I get stuck on one way of doing things, even when it's clear it won't work.

129. I'm often pretty careless with my own and others' things.

130. I am a very anxious person.

131. People are basically trustworthy.

132. I am easily distracted.

133. It seems like I'm always getting a "raw deal" from others.

134. I don't hesitate to cheat if it gets me ahead.

135. I check things several times to make sure they are perfect.

136. I don't like spending time with others.

137. I feel compelled to go on with things even when it makes little sense to do so.

138. I never know where my emotions will go from moment to moment.

139. I have seen things that weren't really there.

140. It is important to me that things are done in a certain way.

141. I always expect the worst to happen.

142. I try to tell the truth even when it's hard.

143. I believe that some people can move things with their minds.

144. I can't focus on things for very long.

145. I steer clear of romantic relationships.

146. I'm not interested in making friends.

147. I say as little as possible when dealing with people.

148. I'm useless as a person.

149. I'll do just about anything to keep someone from abandoning me.

150. Sometimes I can influence other people just by sending my thoughts to them.

151. Life looks pretty bleak to me.

152. I think about things in odd ways that don't make sense to most people.

153. I don't care if my actions hurt others.

154. Sometimes I feel "controlled" by thoughts that belong to someone else.

155. I really live life to the fullest.

156. I make promises that I don't really intend to keep.

157. Nothing seems to make me feel good.

158. I get irritated easily by all sorts of things.

159. I do what I want regardless of how unsafe it might be.

160. I often forget to pay my bills.

161. I don't like to get too close to people.

162. I'm good at conning people.

163. Everything seems pointless to me.

164. I never take risks.

165. I get emotional over every little thing.

166. It's no big deal if I hurt other peoples' feelings.

167. I never show emotions to others.

168. I often feel just miserable.

169. I have no worth as a person.

170. I am usually pretty hostile.

171. I've skipped town to avoid responsibilities.

172. I've been told more than once that I have a number of odd quirks or habits.

173. I like being a person who gets noticed.

174. I'm always fearful or on edge about bad things that might happen.

175. I never want to be alone.

176. I keep trying to make things perfect, even when I've gotten them as good as they're likely to get.

177. I rarely feel that people I know are trying to take advantage of me.

178. I know I'll commit suicide sooner or later.

179. I've achieved far more than almost anyone I know.

180. I can certainly turn on the charm if I need to get my way.

181. My emotions are unpredictable.

182. I don't deal with people unless I have to.

183. I don't care about other peoples' problems.

184. I don't react much to things that seem to make others emotional.

185. I have several habits that others find eccentric or strange.

186. I avoid social events.

187. I deserve special treatment.

188. It makes me really angry when people insult me in even a minor way.

189. I rarely get enthusiastic about anything.

190. I suspect that even my so-called "friends" betray me a lot.

191. I crave attention.

192. Sometimes I think someone else is removing thoughts from my head.

193. I have periods in which I feel disconnected from the world or from myself.

194. I often see unusual connections between things that most people miss.

195. I don't think about getting hurt when I'm doing things that might be dangerous.

196. I simply won't put up with things being out of their proper places.

197. I often have to deal with people who are less important than me.

198. I sometimes hit people to remind them who's in charge

199. I get pulled off-task by even minor distractions.

200. I enjoy making people in control look stupid.

201. I just skip appointments or meetings if I'm not in the mood.

202. I try to do what others want me to do.

203. I prefer being alone to having a close romantic partner.

204. I am very impulsive.

205. I often have thoughts that make sense to me but that other people say are strange.

206. I use people to get what I want.

207. I don't see the point in feeling guilty about things I've done that have hurt other people.

208. Most of the time I don't see the point in being friendly.

209. I've had some really weird experiences that are very difficult to explain.

210. I follow through on commitments.

211. I like to draw attention to myself.

212. I feel guilty much of the time.

213. I often "zone out" and then suddenly come to and realize that a lot of time has passed.

214. Lying comes easily to me.

215. I hate to take chances.

216. I'm nasty and short to anybody who deserves it.

217. Things around me often feel unreal, or more real than usual.

218. I'll stretch the truth if it's to my advantage.

219. It is easy for me to take advantage of others.

220. I have a strict way of doing things.

Scoring:

For items 7, 30, 35, 58, 87, 90, 96, 97, 98, 131, 142, 155, 164, 177, 210, and 215, the items are reverse-coded prior to entering into scale score computations.

The scores on the items within each trait facet should be summed and entered in the appropriate raw facet score box. In addition, the clinician is asked to calculate and use average scores for each facet and domain. The average scores reduce the overall score as well as the scores for each domain to a 4-point scale and is calculated by dividing the raw facet score by the number of items in the facet (e.g., if all the items within the "Anhedonia" facet are rated as being "sometimes or somewhat true," then the average facet score would be 16/8 = 2, indicating moderate Anhedonia). The average domain scores are calculated by summing and then averaging the 3 facet scores contributing primarily to a specific domain. For example, if the average facet scores on Emotional Lability, Anxiousness, and Separation Insecurity (scales primarily indexing Negative

Affect) are all 2, then the sum of these scores would be 6, and the average domain score would be 6/3 = 2. Higher average scores indicate greater dysfunction in a specific personality trait facet or domain. Domain scores should not be computed if any one of the three contributing facet scores cannot be computed because of missing item responses.

Personality Traits facets and their respective items:

Anhedonia – 1, 23, 26, 30R, 124, 155R, 157, 189

Anxiousness – 79, 93, 95, 96R, 109, 110, 130, 141, 174

Attention Seeking – 14, 43, 74, 111, 113, 173, 191,211

Callousness – 11, 13, 19, 54, 72, 73, 90R, 153, 166, 183, 198, 200, 207, 208

Deceitfulness – 41, 53, 56, 76, 126, 134, 142R, 206, 214, 218

Depressivity – 27, 61, 66, 81, 86, 104, 119, 148, 151, 163, 168, 169, 178, 212

Distractibility – 6, 29, 47, 68, 88, 118, 132, 144, 199

Eccentricity – 5, 21, 24, 25, 33, 52, 55, 70, 71, 152, 172,185, 205

Emotional Lability – 18, 62, 102, 122, 138, 165, 181

Grandiosity – 40, 65, 114, 179, 187, 197

Hostility – 28, 32, 38, 85, 92, 116, 158, 170, 188, 216

Impulsivity – 4, 16, 17, 22, 58R, 204

Intimacy Avoidance – 89, 97R, 108, 120, 145, 203

Irresponsibility – 31, 129, 156, 160, 171, 201, 210R

Manipulativeness – 107, 125, 162, 180, 219

Perceptual Dysregulation – 36, 37, 42, 44, 59, 77, 83, 154, 192, 193, 213, 217

Perseveration – 46, 51, 60, 78, 80, 100, 121, 128, 137

Restricted Affectivity – 8, 45, 84, 91, 101, 167, 184

Rigid Perfectionism – 34, 49, 105, 115, 123, 135, 140, 176, 196, 220

Risk Taking – 3, 7R, 35R, 39, 48, 67, 69, 87R, 98R, 112, 159, 164R, 195, 215R

Separation Insecurity – 12, 50, 57,64, 127, 149, 175

Submissiveness – 9, 15, 63, 202

Suspiciousness – 2, 103, 117, 131R, 133, 177R, 190

Unusual Beliefs & Experiences – 94, 99, 106, 139, 143, 150, 194, 209

Withdrawal – 10, 20, 75, 82, 136, 146, 147, 161, 182, 186

Personality Trait domains and respective Facet Scales:

Negative Affect - Emotional Lability, Anxiousness, Separation Insecurity

Detachment - Withdrawal, Anhedonia, Intimacy Avoidance

Antagonism - Manipulativeness, Deceitfulness, Grandiosity

Disinhibition - Irresponsibility, Impulsivity, Distractibility

Psychoticism - Unusual Beliefs & Experiences, Eccentricity, Perceptual Dysregulation

Other versions also used in the Thesis:

The *PID-5 Brief Form* (Chapter 5) uses the following items:

1. People would describe me as reckless.
2. I feel like I act totally on impulse.
3. Even though I know better, I can't stop making rash decisions.
4. I often feel like nothing I do really matters.
5. Others see me as irresponsible.
6. I'm not good at planning ahead.
7. My thoughts often don't make sense to others.
8. I worry about almost everything.
9. I get emotional easily, often for very little reason.
10. I fear being alone in life more than anything else.
11. I get stuck on one way of doing things, even when it's clear it won't work.
12. I have seen things that weren't really there.
13. I steer clear of romantic relationships.
14. I'm not interested in making friends.
15. I get irritated easily by all sorts of things.
16. I don't like to get too close to people.
17. It's no big deal if I hurt other peoples' feelings.
18. I rarely get enthusiastic about anything.
19. I crave attention.

20. I often have to deal with people who are less important than me.
21. I often have thoughts that make sense to me but that other people say are strange.
22. I use people to get what I want.
23. I often "zone out" and then suddenly come to and realize that a lot of time has passed.
24. Things around me often feel unreal, or more real than usual.
25. It is easy for me to take advantage of others.

Scoring:

The Brief version of the PID-5 is scored similarly. The following items comprise the different Personality Trait domains:

Negative Affect – 8, 9, 10, 11, 15
Detachment – 4, 13, 14, 16, 18
Antagonism – 17, 19, 20, 22, 25
Disinhibition – 1, 2, 3, 5, 6
Psychoticism – 7, 12, 21, 23, 24

The PID-5-SF (100 items) items uses the following items to calculate the Personality Trait Domains and Facets:

Negative Affectivity
- Anxiousness: 79, 109, 130, 175
- Emotional Lability: 122, 138, 165, 181
- Hostility: 38, 92, 158, 170
- Perseveration: 60, 80, 100, 128
- Restricted Affectivity: 84R, 91R, 167R, 184R
- Separation Insecurity: 50, 127, 149, 175

Detachment
- Anhedonia: 23, 26, 124, 157

- Depressivity: 81, 151, 163, 169

- Intimacy Avoidance: 89, 120, 145, 203

- Suspiciousness: 2, 117, 133, 190

- Withdrawal: 82, 136, 146, 186

Antagonism:

- Attention Seeking: 74, 173, 191, 211

- Callousness: 19, 153, 166, 183

- Deceitfulness: 53, 134, 206, 218

- Grandiosity: 40, 114, 187, 197

- Manipulativeness: 107, 125, 162, 219

Disinhibition:

- Distractibility: 118, 132, 144, 199

- Impulsivity: 4, 16, 17, 22

- Irresponsibility: 129, 156, 160, 171

- Rigid Perfectionism: 105R, 123R, 176R, 196R

- Risk Taking: 39, 48, 67, 159

Psychoticism:

- Eccentricity: 25, 70, 152, 205

- Perceptual Dysregulation: 44, 154, 192, 217

- Unsual Beliefs and Experiences: 106, 139, 150, 209

Appendix B – The Severity Indices of Personality Problems - Short Version (SIPP-SV)

Instructions:

This questionnaire consists of a series of statements about you. These statements refer to the last 3 months. By reporting to what extent you agree or disagree with each statement, you are describing how you have been over the last 3 months. You can do this by marking the box which best describes how you have been.

Each item within the following:

1 – Fully disagree

2 – Partly disagree

3 – Partly agree

4 – Fully agree

Items:

1. Sometimes I get so overwhelmed that I can't control my reactions
2. I can easily accept people the way they are, even when they are different
3. I strongly believe that life is worth living
4. Overall I feel that my activities are enjoyable to me
5. I can work with people on a joint project in spite of personal differences
6. I rarely meet someone with whom I dare to share my thoughts and feelings
7. If I have agreed on a course of action with others, I tend to keep to my agreement
8. When upset by someone I often feel like hurting him or her
9. I usually have adequate control over my feelings
10. Sometimes I get so angry, that I feel like hitting or kicking people around me
11. It is hard for me to respect people who have ideas that are different from mine
12. I often see no reason to continue living
13. Some people think of me as a rude person
14. It is hard for me to show affection to other people

15. It is hard for me to get attached to someone else

16. I am someone who does not always keep to the rules, especially when it is easy to ignore them

17. I strongly believe that I am just as worthy as other people

18. I tend to think of myself as a loner

19. I often fail to get a job done because I didn't try hard enough

20. Sometimes I am not as reliable as I perhaps should be

21. I frequently say things I regret later

22. I lose control sometimes to the extent that people are frightened of me

23. I often comment adversely on others' beliefs or actions

24. It is hard for me to really enjoy doing things

25. It is hard for me to cooperate unless others submit to my way of doing things

26. Even among good friends, I do not show much of myself

27. I have a tendency to start things and then give up on them

28. I have such strong feelings that I easily lose control of them

29. Often I do not succeed to pay my debts promptly

30. It is often hard for me to go along with people with different values

31. I often feel that my life is meaningless

32. I seem to lack the sense of responsibility necessary to meet my obligations

33. I often fail to do things that I am supposed to do

34. Others have told me that I should try harder to avoid losing control over my feelings

35. I often feel that I am not as worthy as other people

36. I belief that most people do not like to go along with me

37. Sometimes it seems that everything in me somehow blocks the capacity to have fun

38. At work I get easily irritated about other people's ways of doing things

39. It is hard for me to feel loved by people I have become close to

40. One of my problems is that I cannot easily let myself have a good time

41. I often cannot help expressing my moods inappropriately

42. I seem to do things that I regret more often than other people do

43. It is hard for me to control my aggression towards others

44. I can demonstrate my affection for others without too much discomfort

45. It is hard for me to enjoy lasting relationships

46. Some people have criticized me because of insufficient sense of responsibility

47. Sometimes it is hard for me not to become aggressive towards others

48. The way I feel or behave is often very unpredictable

49. It is hard for me to express affection to others

50. One of my problems is that I find it hard to really believe that others love me

51. Unfortunately, I am not as hard-working as I would like to be

52. Other people have complained about me being not fully reliable

53. I often overreact to minor problems

54. I often act impulsively even though I know I will regret it later on

55. I am often confused about what kind of person I really am

56. When I try to understand myself, I often get more confused than I was before

57. I usually have a low opinion of myself

58. I regularly get into disputes with others at work or home

59. I have been able to form lasting friendships

60. Although I regret it, I have to admit that I am not as sincere as I should be

Scoring:

Scores for the SIPP-SV domains (Self-control, Identity Integration, Responsibility, Relational Capacities, and Social Concordance) are calculated using the following SPSS syntax

 * NECESSARY PREPARATIONS: name first sipp item sip01, second sipp item sip02, etc., values (and value label) for each item: 1 (fully disagree), 2 (partly disagree), 3 (partly agree), and 4 (fully agree). After recoding, lower levels refer to more maladaptive functioning (thus more pathological scores), while higher levels refer to more adaptive functioning (thus more healthy scores).

RENAME VARIABLES (sip01 to sip60 = sipec1, sipre1, sippu1, sipen1, sipco1, sipin1, siptr1, sipar1, siper2, sipar2, sipre2, sippu2, sipar9, sipin2, sipat2, siptr2, sipsr3, sipat3, sipri3, siptr3, sipec4, sipar4, sipre4, sipen4, sipco4, sipin4, sipri4, siper5, siptr6, sipre5, sippu5, sipri5, siptr5, siper6, sipsr6, sipti6, sipen6, sipco5, sipat6, sipen5, siper7, sipec7, sipar7, sipin7, sipat7, sipri7, sipar8, sipssi8, sipin8, sipat8, sipri8, siptr8, siper8,

sipec9, sipssi9, sipsrf9, sipsr9, sipre9, sipat9, siptr9).
EXECUTE.

RECODE sipec1 sipin1 sipar1 sipar2 sipre2 sippu2 sipar9 sipin2 sipat2 siptr2 sipat3 sipri3 siptr3 sipec4 sipar4 sipre4 sipen4 sipco4 sipin4 sipri4 siper5 siptr6 sipre5 sippu5 sipri5 siptr5 siper6 sipsr6 sipti6 sipen6 sipco5 sipat6 sipen5 siper7 sipec7 sipar7 sipat7 sipri7 sipar8 sipssi8 sipin8 sipat8 sipri8 siptr8 siper8 sipec9 sipssi9 sipsrf9 sipsr9 sipre9 siptr9

(MISSING=SYSMIS) (1=4) (2=3) (3=2) (4=1) INTO siprec1 siprin1 siprar1 siprar2 siprre2 siprpu2 siprar9 siprin2 siprat2 siprtr2 siprat3 siprri3 siprtr3 siprec4 siprar4 siprre4 sipren4 siprco4 siprin4 siprri4 siprer5 siprtr6 siprre5 siprpu5 siprri5 siprtr5 siprer6 siprsr6 siprti6 sipren6 siprco5 siprat6 sipren5 siprer7 siprec7 siprar7 siprat7 siprri7 siprar8 siprssi8 siprin8 siprat8 siprri8 siprtr8 siprer8 siprec9 siprssi9 siprsrf9 siprsr9 siprre9 siprtr9 .
EXECUTE.

* COMPUTING MEAN SCORES for each domain, allowing a maximum of 33% missing values for each domain, and with 12 items within each domain:

COMPUTE d60m_slfc = MEAN.10(siprer8, siper2, siprer5, siprer6, siprer7, siprec1, siprec4, siprec7, siprec9, siprar4, siprar7, siprssi8).
COMPUTE d60m_ii = MEAN.10(sipren5, siprssi9, siprsrf9, sipsr3, siprsr6, siprsr9, sippu1, siprpu2, siprpu5, sipen1, sipren4, sipren6).
COMPUTE d60m_resp = MEAN.10(siprri3, siprri4, siprri5, siprri7, siprri8, siptr1, siprtr2, siprtr3, siprtr5, siprtr8, siprtr9, siprtr6).
COMPUTE d60m_rel = MEAN.10(siprti6, siprin1, siprin2, siprin4, sipin7, siprin8, siprat2, siprat3, siprat6, siprat7, siprat8, sipat9).
COMPUTE d60m_soc = MEAN.10(siprar1, siprar2, siprar8, sipre1, siprre2, siprre4, siprre5, siprre9, sipco1, siprar9, siprco4, siprco5).
EXECUTE.

*Labeling MEAN SCORE domains:
VARIABLE LABLES d60m_slfc 'Self-control domain SIPP-SF mean'

/d60m_ii 'Identity integration domain SIPP-SF mean'

/d60m_resp 'Responsibility domain SIPP-SF mean'

/d60m_rel 'Relational capacities domain SIPP-SF mean'

/d60m_soc 'Social concordance domain SIPP-SF mean'.

*COMPUTING TOTAL SCORES for each domain:

COMPUTE d60t_slfc = 12*d60m_slfc.

COMPUTE d60t_ii = 12*d60m_ii.

COMPUTE d60t_resp = 12*d60m_resp.

COMPUTE d60t_rel = 12*d60m_rel.

COMPUTE d60t_soc = 12*d60m_soc.

*Labeling TOTAL SCORES domains:

VARIABLE LABLES d60t_slfc 'Self-control domain SIPP-SF total'

/d60t_ii 'Identity integration domain SIPP-SF total'

/d60t_resp 'Responsibility domain SIPP-SF total'

/d60t_rel 'Relational capacities domain SIPP-SF total'

/d60t_soc 'Social concordance domain SIPP-SF total'.

EXECUTE.

Appendix C – The Experiences in Close Relationships – Revised (ECR-R)

Instructions:

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you *generally* experience relationships, not just in what is happening in a current relationship. Respond to each statement by selecting a number to indicate how much you agree or disagree with the statement. 1 corresponds to STRONGLY DISAGREE and 7 corresponds to STRONGLY AGREE.

Items:

1. I'm afraid that I will lose my partner's love.
2. I often worry that my partner will not want to stay with me.
3. I often worry that my partner doesn't really love me.
4. I worry that romantic partners won't care about me as much as I care about them.
5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.
6. I worry a lot about my relationships.
7. When my partner is out of sight, I worry that he or she might become interested in someone else.
8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.
9. I rarely worry about my partner leaving me.
10. My romantic partner makes me doubt myself
11. I do not often worry about being abandoned.
12. I find that my partner(s) don't want to get as close as I would like.
13. Sometimes romantic partners change their feelings about me for no apparent reason.
14. My desire to be very close sometimes scares people away.

15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.

16. It makes me mad that I don't get the affection and support I need from my partner.

17. I worry that I won't measure up to other people.

18. My partner only seems to notice me when I'm angry.

19. I prefer not to show a partner how I feel deep down.

20. I feel comfortable sharing my private thoughts and feelings with my partner.

21. I find it difficult to allow myself to depend on romantic partners.

22. I am very comfortable being close to romantic partners.

23. I don't feel comfortable opening up to romantic partners.

24. I prefer not to be too close to romantic partners.

25. I get uncomfortable when a romantic partner wants to be very close.

26. I find it relatively easy to get close to my partner.

27. It's not difficult for me to get close to my partner.

28. I usually discuss my problems and concerns with my partner.

29. It helps to turn to my romantic partner in times of need.

30. I tell my partner just about everything.

31. I talk things over with my partner.

32. I am nervous when partners get too close to me.

33. I feel comfortable depending on romantic partners.

34. I find it easy to depend on romantic partners.

35. It's easy for me to be affectionate with my partner.

36. My partner really understands me and my needs.

Scoring:

The first 18 items above comprise the attachment-related anxiety scale. Items 19 – 36 comprise the attachment-related avoidance scale. To obtain a score for attachment-related anxiety, please average a person's responses to items 1 – 18. However, because items 9 and 11 are "reverse keyed" (i.e., high numbers represent low anxiety rather than high anxiety), you'll need to reverse the answers to those questions before averaging the responses. (If someone answers with a "6" to item 9, you'll need to re-key it as a 2 before averaging.) To obtain a score for attachment-related avoidance,

please average a person's responses to items 19 – 36. Items 20, 22, 26, 27, 28, 29, 30, 31, 33, 34, 35, and 36 will need to be reverse keyed before you compute this average.

Appendix D – The Couples Satisfaction Index (CSI)

1. Please indicate the degree of happiness, all things considered, in your relationship.

Extremely Unhappy	Fairly Unhappy	A Little Unhappy	Happy	Very Happy	Extremely Happy	Perfect
0	1	2	3	4	5	6

Most people have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the following list.

2. Amount of time spent together
3. Making major decisions
4. Demonstrations of affection

Always agree	Almost always agree	Occasionally disagree	Frequently disagree	Almost always disagree	Always disagree
5	4	3	3	1	0

5. In general, how often do you think that things between you and your partner are going well?

All the time	Most of the time	More often than not	Occasionally	Rarely	Never
5	4	3	3	1	0

6. How often do you wish you hadn't gotten into this relationship?

All the time	Most of the time	More often than not	Occasionally	Rarely	Never
0	1	2	3	4	5

7. I still feel a strong connection with my partner

8. If I had my life to live over, I would marry (or live with/date) the same person

9. Our relationship is strong

10. I sometimes wonder if there is someone else out there for me (REVERSED)

11. My relationship with my partner makes me happy

12. I have a warm and comfortable relationship with my partner

13. I can't imagine ending my relationship with my partner

14. I feel that I can confide in my partner about virtually anything

15. I have had second thoughts about this relationship recently (REVERSED)

16. For me, my partner is the perfect romantic partner

17. I really feel like part of a team with my partner

18. I cannot imagine another person making me as happy as my partner does

Not true at all	A little true	Somewhat true	Mostly true	Almost completely true	Completely true
0	1	2	3	4	5

19. How rewarding is your relationship with my partner?

20. How well does your partner meet your needs?

21. To what extent has your relationship met your original expectation?

22. In general, how satisfied are you with your relationship?

Not at all	A little	Somewhat	Mostly	Almost completely	Completely
0	1	2	3	4	5

23. How good is your relationship compared to most?

Worse than all	Better than all

others (extremely bad)					others (extremely good)
0	1	2	3	4	5

24. Do you enjoy your partners company?

25. How often do you and your partner have fun together?

Never	Less than once a month	Once or twice a month	Once or twice a week	Once a day	More often
0	1	2	3	4	5

For each of the following items, select the answer that best describes *how you feel about your relationship.* Base your responses on your first impressions and immediate feelings about the item.

26. Interesting	5	4	3	2	1	0	Boring
27. Bad	0	1	2	3	4	5	Good
28. Full	5	4	3	2	1	0	Empty
29. Lonely	0	1	2	3	4	5	Friendly
30. Sturdy	5	4	3	2	1	0	Fragile
31. Discouraging	0	1	2	3	4	5	Hopeful
32. Enjoyable	5	4	3	2	1	0	Miserable

Scoring:

For the 16-item version use 1, 5, 9, 11, 12, 17, 19, 20, 21, 22, 26, 27, 28, 30, 31, 32.

For the 4-item version use 1, 12, 19, 22.

Scoring is kept continuous.

Appendix E – Personal Assessment of Intimacy in a Relationship (PAIR)

The scale can either be phrased in terms of how the relationship "is now" or it can be phrased in terms of how the relationship "should be" (or both), depending on what the researcher wishes to study. Respondents answer each item on a 5-point scale ranging from 1 (Does not describe my relationship at all) to 5 (Describes my relationship very well).

Items:

1. My partner listens to me when I need someone to talk to.
2. We enjoy spending time with other couples.
3. I am satisfied with our sex life.
4. My partner helps me clarify my thoughts.
5. We enjoy the same recreational activities.
6. My partner has all the qualities I've ever wanted in a mate.
7. I can state me feelings without him/her getting defensive.
8. We usually "keep to ourselves."
9. I feel our sexual activity is just routine.
10. When it comes to having a serious discussion it seems that we have little in common.
11. I share very few of my partners' interests.
12. There are times when I do not feel a great deal of love and affection for my partner.
13. I often feel distant from my partner.
14. We have very few friends in common.
15. I am able to tell my partner when I want sexual intercourse.
16. I feel "put-down" in a serious conversation with my partner.
17. We like playing together.
18. Every new thing that I have learned about my partner has pleased me.
19. My partner can really understand my hurts and joys.
20. Having time together with friends is an important part of our shared activities.

21. I "hold back" my sexual interest because my partner makes me feel uncomfortable.

22. I feel it is useless to discuss some things with my partner.

23. We enjoy the out-of-doors together.

24. My partner and I understand each other completely.

25. I feel neglected at times by my partner.

26. Many of my partner's closest friends are also my closest friends.

27. Sexual expression is an essential part of our relationship.

28. My partner frequently tries to change my ideas.

29. We seldom find time to do fun things together.

30. I don't think anyone could possibly be happier than my partner and I when we are with one another.

31. I sometimes feel lonely when we're together.

32. My partner disapproves of some of my friends.

33. My partner seems disinterested in sex.

34. We have an endless number of things to talk about.

35. I think that we share some of the same interests.

36. I have some needs that are not being met by my relationship.

Scoring:

The following items are reversed: 13, 25, 31, 8, 14, 32, 9, 21, 33, 10, 16, 22, 28, 11, 29, 12, 36. The Intimacy domains are computed by averaging the respective items.
- Emotional Intimacy: 1, 7, 13, 19, 25, 31
- Social Intimacy: 2, 8, 14, 20, 26, 32
- Sexual Intimacy: 3, 9, 15, 21, 27, 33
- Intellectual Intimacy: 4, 10, 16, 22, 28, 34
- Recreational Intimacy: 5, 11, 17, 23, 28, 35
- Conventionality Scale: 6, 12, 18, 24, 30, 36

Appendix F – Break Up Reasons Scale (BRS)

Instructions and Items:

Please rate how much the following reasons contributed to the ending of your last relationship

	Not at all	A little	A lot	Completely
1. Poor communication	1	2	3	4
2. Distrust	1	2	3	4
3. Unreciprocated love	1	2	3	4
4. Non-caring behavior	1	2	3	4
5. Diminishing empathy	1	2	3	4
6. Arguments	1	2	3	4
7. Infidelity	1	2	3	4
8. Hypersensitivity	1	2	3	4
9. Boredom	1	2	3	4
10. Lack of time together	1	2	3	4
11. Dissimilar interests	1	2	3	4
12. Dissimilar traits	1	2	3	4
13. Diminishing fun	1	2	3	4
14. Diminishing excitement	1	2	3	4
15. Increasing time during other activities	1	2	3	4
16. Sexual dissatisfactions	1	2	3	4
17. Diminishing physical attraction	1	2	3	4
18. Diminishing physical affection	1	2	3	4
19 Problem maintaining independent self	1	2	3	4
20. Control	1	2	3	4