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**EMERGING PERSONALITY STRUCTURE IN ADOLESCENCE**  
*Dimensions, processes and developmental trajectories*

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We have a habit in writing articles published in scientific journals to make the work as finished as possible, to cover all the tracks, to not worry about the blind alleys or to describe how you had the wrong idea first, and so on. So there isn't any place to publish, in a dignified manner, what you *actually* did in order to get to do the work.

(R.P. Feynman)

“There are these two young fish swimming along, and they happen to meet an older fish swimming the other way, who nods at them and says, ‘Morning, boys. How’s the water?’. And the two young fish swim on for a bit, and then eventually one of them looks over at the other and goes, ‘What the hell is water?’”

(D.F. Wallace)

# ABSTRACT

This contribution aims at exploring dimensions, processes and developmental trajectories that are specifically related to emerging personality structure in adolescence adopting a dimensional approach. In line with contemporary developments on the conceptualization of personality disorders, the pathology of personality "grows up" during adolescence, which is indeed a particularly "sensitive" and fertile ground for this to happen.

Thus, Chapter 1 ("Investigating emerging personality pathology") presents an overview of the current state of the art on emerging (mal)adaptive personality structure in adolescence, setting the ground ready for the topics that will be further developed in the following sections.

Chapter 2 ("Development of personality pathology") continues the theoretical exploration, deepening the current debate on what the core dimensions are that define the development of personality pathology (i.e., identity formation and self and interpersonal aspects of personality functioning), as well as on how to formulate a clinically relevant description of PDs.

Chapter 3 ("A dimensional approach to personality functioning") investigate the complex yet crucial relation between maladaptive personality functioning and maladaptive personality traits, as well as potential pathological outcomes of personality pathology interpreted from a dimensional perspective (Study 1). Furthermore, as an exclusively categorical approach has been adopted to study a crucial and clinically relevant topic as is the presence of non-suicidal self-injury behaviors (NSSI) and its association with personality pathology, Study 2 considers whether and which dimensions of maladaptive personality functioning are associated with the presence of NSSI in a community sample of adolescents.

Moreover, to acknowledge the need to adopt tools that identify the dimensions and processes that are specific to emerging personality structuring in adolescence and that are sufficiently sensitive to detect sub-threshold pathology, Chapter 4 ("Assessing personality functioning"), presents the development of the Adolescent Personality Structure Questionnaire (APS-Q), a self-report measure for the assessment of personality in adolescence that takes into account, in accordance with the DSM-5 Alternative Model for Personality Disorders and an object relation framework, both self and interpersonal aspects of personality functioning (Study 3 and Study 4).

Crucial facets of personality pathology are explored in Chapter 5 (“Facets of emerging personality functioning”), investigating which personality dimensions (such as the stability of the self-image, the quality of the relationship with one's body changes, the presence of aggression, etc.) are associated with mentalizing abilities and to identify gender specificities in these relationships (Study 5).

Finally, Chapter 6 (“Developmental trajectories”), emphasizes the importance of acknowledging processes and developmental trajectories presenting preliminary data on the exploration of how different aspects of personality functioning might change over time as well as on the contribution of externalizing and internalizing problems to personality pathology (Study 6).

All in all, acknowledging the contemporary debate on PDs in adolescence, the final discussion of this dissertation aims at underlining the improvements that a dimensional approach to personality functioning might offer in understanding how (mal)adaptive personality is structured in adolescence, suggesting theoretical and clinical implications for forthcoming research.

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## INTRODUCTION

This contribution aims at exploring dimensions, processes and developmental trajectories that are specifically related to emerging personality structure in adolescence adopting a dimensional approach. In fact, research has profusely shown that, to define the developmental paths of personality disorders (PDs) that unfold during adolescence, relying solely on the knowledge we have about personality pathology in adulthood is not enough (e.g., Kernberg, P.F., Weiner & Bardenstein, 2000; Hutsebaut, Feenstra & Luyten, 2013; Ensink, Biberdzic, Normandin & Clarkin, 2015). Though, it is during this developmental phase that personality structures itself in its "adult" form. This happens while undergoing a series of complex processes (psychological, physical and neurophysiological) that have historically been summarized as the "storm and stress" phenotype (e.g., Arnett, 1999; Casey et al., 2010). As Sharp and Wall (2017) point out in a recent review, the pathology of personality "grows up" during adolescence, which is indeed a particularly "sensitive" and fertile ground for this to happen.

Alongside the publication of the new edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-5; APA, 2013), and the proposal of an Alternative Model for Personality Disorders (AMPD; *ibidem*), much of the scientific community has officially stated the need for a general revision of the conceptualization of PDs. In addition to the numerous limitations of the categorical system (e.g., comorbidity, criteria thresholds, difficult clinical applicability etc.), a central aspect of the discussion on PDs has been the comparison with a more dimensional approach, that accounted for the severity of personality pathology and not only on constellations of symptoms. The latter was initially derived from numerous studies on the contribution of personality traits, that unfortunately at the time were mostly carried out on non-clinical populations and focused on adaptive versions of personality traits.

However, although included in the III Section of the manual ("Emerging Measures and Models"), the AMPD has marked an important step in the conceptualization of pathological personality. In fact, in recent years many researchers have investigated the role of maladaptive personality traits, as well as pathological personality functioning. While researchers and clinicians remain "cautious" in proposing a complete integration of the conceptualization of PDs regarding maladaptive functioning and the one concerning maladaptive traits, recent years have witnessed a universal acknowledgement of the importance of considering the level of severity of personality pathology.

As we approach personality pathology in adolescence, the general picture becomes somehow even more blurry and, although it is possible to make a diagnosis of PDs during this phase of development, we currently lack a shared conceptualization for the development of PDs and we are still exploring the topic of severity during this phase, especially when it comes to disentangling "normal crisis" and prodromes of personality pathology (e.g., Miller, Muehlenkamp & Jacobson, 2008; Morey, 2010).

Thus, to start exploring how emerging personality structure unfolds, Chapter 1 ("Investigating emerging personality pathology") aims at presenting an overview of the current state of the art on emerging (mal)adaptive personality structure in adolescence, setting the ground ready for the topics that will be further developed in the following chapters.

Chapter 2 ("Development of personality pathology") will continue the theoretical exploration, aiming at deepening the current debate on what the core dimensions are that define the development of personality pathology, as well as on how to formulate a clinically relevant description of PDs. Indeed, within a dimensional perspective, given the evidence of a strong relationship between identity pathology and PDs, identity in particular has emerged as a crucial process, considering both the subjective experience (integration vs. diffusion) and the social-



cognitive perspectives (degrees of development of identity processes), in unravelling aspects of the self and interpersonal impairment of personality pathology.

Chapter 3 (“A dimensional approach to personality functioning”) tries to investigate further the complex yet crucial relation between maladaptive personality functioning and maladaptive personality traits, as well as potential pathological outcomes of personality pathology interpreted from a dimensional perspective, thus acknowledging different domains of personality and their degree of impairment. Even though research on personality in adolescence has underlined the importance of adopting a dimensional approach to personality pathology rather than a categorical one, the association between maladaptive versions of personality traits and pathological outcomes has often been studied neglecting to consider the role of the severity of personality functioning. Thus, the aim of Study 1 is to investigate the interactions between maladaptive personality traits as conceptualized in the AMPD and personality functioning in a large sample of non-clinical adolescents. Furthermore, an exclusively categorical approach has been adopted to study a crucial and clinically relevant topic as is the presence of non-suicidal self-injury behaviors (NSSI) and its association with personality pathology, overlooking the study of maladaptive personality functioning. Hence, Study 2 aims at investigating whether and which dimensions of maladaptive personality functioning are associated with the presence of NSSI in a community sample of adolescents.

Another essential aspect to consider is the assessment of personality in adolescence. Adopting tools that identify the dimensions and processes that are specific to emerging personality structuring and that are sufficiently sensitive to detect sub-threshold pathology is another issue to consider. Chapter 4 (“Assessing personality functioning”), aims at presenting the development of the Adolescent Personality Structure Questionnaire (APS-Q), a self-report measure for the assessment of personality in adolescence that acknowledges, according to the

AMPD and an object relation framework, both self and interpersonal aspects of personality functioning. Thus, Study 3, displaying preliminary data on the development of the APS-Q, further deepens the reflection on the critical areas of personality that is crucial to measure in adolescence, as well as the relationship with maladaptive traits. Study 4, confirming the dimensional structure of the APS-Q, explores the associations between (mal)adaptive personality and borderline as well as narcissistic features.

Pathological personality so conceptualized, as a disruption in one's own identity (or sense of self) as well as in the quality of interpersonal relationships, might also influence the adolescent's ability to recognize mental states of others (regarding feelings, behaviors, intentions). The concept of mentalization is closely linked to the latter: thus, Study 5 in Chapter 5 ("Facets of emerging personality functioning"), aims at deepening the relationship between personality functioning and different levels of mentalizing abilities. The purpose of this study is to observe which personality dimensions (such as the stability of the self-image, the quality of the relationship with one's body changes, the presence of aggression, etc.) are associated with mentalization and to identify gender differences in these relationships.

Finally, Chapter 6 ("Developmental trajectories"), aims at emphasizing the importance of considering not only the complexity of the interplay of the dimensions that characterize personality structure in adolescence but also the significance of acknowledging processes and developmental trajectories that reflect on how different aspects of personality functioning might change over time. In this regard, Study 6, aims at presenting a preliminary photograph that portrays longitudinally how personality structure might change, and how it might be predicted by the presence of externalizing and internalizing problems.

All in all, this contribution aims at shedding light on such a complex and multifaceted subject, acknowledging contemporary reflections on how

(mal)adaptive personality is structured in adolescence and exploring a dimensional approach to personality functioning. Thus, it aims at drawing an initial picture of some of the themes that define the crucial dimensions of emerging personality such as the interplay of maladaptive personality functioning and maladaptive personality traits, the association with pathological outcomes and the interactions with impairments in the ability to recognize others' mental states. Also, it aims at identifying processes of personality structuring highlighting the importance of having valid and sensible assessment tools and finally at suggesting preliminary hypotheses about developmental trajectories.

# CHAPTER 1

## INVESTIGATING EMERGING PERSONALITY PATHOLOGY<sup>1</sup>

*This chapter aims at providing an overview of some of the dimensions that research, as well as clinical practice, have highlighted as fundamental to approach the theme of emerging personality pathology in adolescence. As we will see, on the one hand, we are witnessing a heated debate on the conceptualization of personality pathology in general. In fact, new diagnostic classifications have emerged, such as the alternative model of DSM-5 (APA, 2013), the original proposal of the future ICD-11 (Krueger, 2016), as well as the fundamental psychodynamically-oriented contribution that led to the recent publication of the new edition of the Psychodynamic diagnostic manual (PDM-2, Lingiardi & McWilliams, 2015). Furthermore, the study of PDs in adolescence has stimulated clinicians and researchers to develop specific tools to capture aspects that are specific to a developing personality. Which in turn, is certainly influenced and influences many other etiological factors in a complex and dynamic interplay. Finally, some critical points on the identification of longitudinal trajectories are discussed.*

### PERSONALITY DEVELOPMENT IN ADOLESCENCE

Adolescence is a crucial period for the development and consolidation of personality (Erikson, 1959; Blos, 1968; Kernberg, O. F., 1978), with changes related to both body and neurophysiological development (Spear, 2000; Casey, Jones & Hare, 2008). Moreover, adolescents face psychological changes in the perception of their self in relations with family members and peers, as well as with emerging romantic and sexual relationships (Kernberg P.F., et al., 2000). Teenagers also begin to articulate their goals and interests, related to school and future aspirations. All these psychological and behavioral aspects converge into the formation of

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<sup>1</sup> This chapter is partially based on **Benzi**, Preti, Di Pierro, Fontana, Perugini, Madeddu & Clarkin. Assessing personality functioning in adolescence: development of the Adolescent Personality Structure Questionnaire. The manuscript is currently under review in *Assessment*.

personality as integrated and stable over time (Kroger, 2007). During this phase, severe perturbations, other than normal developmental crises, can lead to maladaptive outcomes such as anxiety disorders, mood disorders, schizophrenia, substance abuse (Powers & Casey, 2015), non-suicidal self-injurious behaviors (Di Pierro, Sarno, Perego, Gallucci & Madeddu, 2012), and deviations in personality structuring that can result in PDs (Paris, 2003).

All in all, in recent years the importance of identifying a multifactorial and dimensional understanding of PDs has emerged (De Fruyt & De Clercq, 2014; Ensink, Biberdzic, Normandin & Clarkin, 2015). The Alternative Model for PDs (AMPD) formulated in Section III of the DSM-5 (APA, 2013) suggests focusing on a dimensional model that accounts for the severity of maladaptive personality functioning, rather than on the presence/absence of criteria, as in the DSM-5 official classification (Section II). Indeed, research has underlined the limitations of a merely descriptive focus on PDs and the need of dimensional developmental models that consider the core aspects of the early stages of these disorders (Cicchetti & Crick, 2009; Hutsebaut et al., 2013).

According to the AMPD, personality pathology encompasses maladaptive self-functioning, related to identity and self-directedness, and maladaptive interpersonal functioning, related to difficulties in empathizing and in having intimate relationships with others (Criterion A). Moreover, the AMPD includes the presence of maladaptive personality traits such as negative affectivity, detachment, antagonism, disinhibition and psychoticism (Criterion B) when describing PDs (Bender, Morey & Skodol, 2011) (see Figure 1).

Overall, the DSM-5 allows diagnosing PDs in adolescence from a categorical standpoint. However, this option has raised conflicting opinions both related to the questionable construct and predictive validity and an overall reluctance amongst clinicians in diagnosing PDs as they're supposed to be transitory and might foster stigmatizing effects (e.g., Bondurant, Greenfield & Tse, 2004; Miller et al., 2008). Thus, as research suggests that personality dysfunction during adolescence results in diagnosable PDs that may or may not continue into adulthood, likewise, sub-

threshold personality dysfunction in youth in some cases is predictive of PDs in adulthood (e.g., Bornovalova, Hicks, Iacono & McGue, 2009). In either instance, the nature and degree of personality pathology are essential to measure during this developmental period. Indeed, an increasing number of studies showed that dysfunctional personality in adolescence is a significant precursor of personality pathology (Westen & Shedler, 2000; Zanarini et al., 2011) and other mental disorders in adulthood (Johnson et al., 1999). Also, research highlighted substantial differences related to gender and age in the development of both normal and pathological personality in adolescence (e.g., Bradley, Conklin & Westen, 2005; Sharp & Wall, 2017).

#### CORE DIMENSIONS OF MALADAPTIVE PERSONALITY FUNCTIONING IN ADOLESCENCE

Notably, amongst psychodynamic dimensional models, the object relations approach (Kernberg, O. F., 1984) has been demonstrated to be in line with the AMPD on adults' samples (Hörz et al., 2009; Preti et al., 2018), encompassing self and interpersonal related aspects of personality pathology. Object relations theory posits as supported by a growing body of research that significant tasks of adolescence include identity formation, quality of relationships and affect regulation during this neurological period when the emotional brain has not fully developed cognitive controls (Casey et al., 2008; Ensink et al., 2015).

One of the significant tasks of adolescence is the consolidation of identity (Kernberg, P. F. et al., 2000; Preti et al., 2015; Benzi & Madeddu, 2017) (see Chapter 2). From a psychodynamic object relations perspective, identity involves the capacity to maintain a representation of the self that is stable and consistent over time, as well as to experience and to be aware of one's own inner states (i.e. emotional, cognitive and behavioral; Kernberg, O. F., 1998a; Kernberg, P. F. et al., 2000). Also, identity is associated with bodily development acceptance, and physical dissatisfaction has been related to low self-esteem, eating disorders, and poor psychosocial functioning in adolescence (e.g., Stice & Whitenton, 2002;

Tiggeman, 2005; Davison & McCabe, 2006). Moreover, the integration of physical changes is linked to the development of sexuality and the degree in which adolescents can fully experience their first sexual and romantic experiences (Collins, 2003; Moore & Rosenthal, 2007). Finally, the presence and stability of investments and goals is also a fundamental building block of identity formation, as it allows teenagers to experiment their dispositions and interests over time (Kernberg, O. F., 1998a; Klimstra, Hale, Raaijmakers, Branje & Meeus, 2010; Becht et al., 2016).

Relations are another relevant aspect of personality functioning in adolescence. In this sense, a significant contribution derives from attachment theory, which underlined developmental pathways for the emergence of personality pathology and other mental disorders (Lyons-Ruth, Bureau, Holmes, Easterbrooks & Brooks, 2013). Also, research showed that the perception of the quality of the relations both with parents and friends is a protective factor from maladaptive outcomes such as emotional and behavioral problems (McGue, Elkins, Walden & Iacono, 2005; Reitz, Zimmermann, Hutteman, Specht & Neyer, 2014). Moreover, according to a psychodynamic framework, the quality of relations is related to the adolescent's internal representations of the significant others (Kernberg, P.F. et al., 2000). Indeed, according to the object relations theory, a primary task of adolescence is the separation-individuation process, which allows adolescents to cultivate and experiment themselves in meaningful relationships outside of the familiar environment (e.g., Blos, 1967; Sugimura et al., 2018).

Finally, the ability to regulate emotions is another essential feature, and the styles of affect regulation are the result of the mutual interactions between neurobiological and temperamental features, and the quality of caregiving experienced with the attachment figure (Fonagy, Gergely & Jurist, 2004). Research has shown that a lack of the ability to regulate affective states is related to pathological outcomes and behavioral problems during adolescence (Garnefski & Kraaij, 2006; Di Pierro et al., 2012). In this sense, the defensive tendency to act out negative emotional states can result in aggression that manifests itself along a

continuum of severity and can be directed towards oneself as well as towards others (Kernberg, P.F., 1994; Kernberg, O.F., 1998a).

## SELF-REPORT MEASURES OF PERSONALITY PATHOLOGY IN ADOLESCENCE

In recent years different tools for the assessment of personality pathology in adolescence have been created. The focus of such measures is either on the DSM classification of PDs, on pathological variants of personality traits, or on (mal)adaptive dimensions of personality functioning (Table 1).

One of the most used instruments for assessing PDs in adolescence according to DSM classification is the Millon Adolescent Clinical Inventory (MACI; 160 items; Millon & Davies, 1993) that evaluates both clinical symptoms and pathological personality. In particular, the MACI includes twelve personality scales: Introversion (Schizoid), Inhibited (Avoidant), Doleful (Depression), Submissive, Dramatizing, Egocentric, Unruly, Forceful (Sadistic), Conforming, Oppositional, Self-Demeaning (Self-Defeating), and Borderline Tendency.

Personality has also been studied in depth regarding personality traits according to the Big Five Model (Roberts, Walton & Viechtbauer, 2006). Recently, the AMPD proposed a set of related maladaptive traits as additional descriptors for personality pathology, which are measured by the Personality Inventory for DSM-5 (PID-5; 220 items; Krueger, Derringer, Markon, Watson & Skodol, 2012; APA, 2013). In particular, the PID-5 measures internalizing traits (Negative affectivity and Detachment), externalizing traits (Disinhibition and Antagonism), and traits of Psychoticism. Few studies have investigated those maladaptive personality traits in adolescence (De Clercq et al., 2014; Somma et al., 2017) finding a similar structure as for the adult samples. However, such studies also stressed the importance of considering developmental issues other than maladaptive personality traits such as the contribution of maladaptive personality functioning dimensions when investigating personality pathology in adolescence. Earlier, De Clercq and colleagues (2006) identified extreme pathological personality traits in adolescence,



which resulted in the creation of the Dimensional Personality Symptom Item Pool (DIPSI; 172 items). The DIPSI measures five pathological traits: Neuroticism, Emotional instability, Introversion, Disagreeableness, and Compulsivity. Furthermore, Tromp and Koot (2008) revised the Dimensional Assessment of Personality Pathology-Basic Questionnaire (DAPP-BQ; Livesley & Jackson, 2009) for the adolescent population (DAPP-BQ-A; 290 items), highlighting the existence of four dimensions of personality traits comparable to the adult version of the instrument (Emotional dysregulation, Dissocial behavior, Inhibitedness, and Compulsivity).

However, according to research (APA, 2013; Livesley & Jang, 2000), as maladaptive traits undoubtedly account for the description of personality pathology, also the general degree of adaptation (personality functioning) ought to be considered as a core component of normal/pathological personality (Keeley, Flanagan & McCluskey, 2014; Benzi, Preti, Di Pierro, Clarkin & Madeddu, 2018) (see Chapter 3). According to a dimensional approach focused on (mal)adaptive personality functioning, Feenstra and colleagues (2011) adapted the Severity Indices of Personality Problems-118 (SIPP-118; 118 items) to the adolescent population. The SIPP-118 investigates the severity of personality functioning measuring five domains: Identity integration, Self-control, Social concordance, Relational capacities, and Responsibility. Also, Biberdzic and colleagues (2017) have recently developed the Inventory of Personality Organization in Adolescence (IPO-A; 42 items), adapted from the adult version of the instrument (IPO; Lenzenweger, Clarkin, Kernberg & Foelsch, 2001). The IPO-A dimensions investigate crucial areas of personality pathology in adolescence according to Kernberg's model (Kernberg, O.F., 1986; Kernberg, P.F. et al., 2000). Indeed, the IPO-A measures dimensions such as the presence of an unstable sense of self and others, instability of goals, aggression, moral impairment, instability of goals, and reality testing.

## FACETS OF EMERGING PERSONALITY FUNCTIONING

According to literature, PDs in adolescence are inextricably linked to a whole number of deficits involving behavioral, emotional and cognitive aspects (e.g. Johnson et al., 1999; Fonagy et al., 2015).

In a recent review, Sharp and Fonagy (2015) summarized the complexity of the etiological factors that we must consider when understanding the exacerbation of pathological personality in adolescence (see Figure 2).

In particular, from a psychological point of view, we see how the characteristics of the person, in addition to a long chain of biological factors, might be influenced by developmental aspects that emerge from both contextual factors and individual vulnerabilities such as experiences of maladaptive parenting as well as the presence of disorganized attachment patterns (e.g., Fonagy & Luyten, 2009). From a psychodynamic standpoint, disruptions in the ability to understand behaviors in terms of underlying mental states has proven to be related to borderline personality disorder core features such as identity disturbances, inappropriate and intense anger, paranoid ideation, chronic feelings of emptiness (which in turn may lead to non-suicidal self-injury behaviors and other pathological outcomes) (e.g., Fonagy & Bateman, 2008; Bleiberg, Rossouw & Fonagy, 2012; Rossouw & Fonagy, 2012).

As previously stated, research acknowledge the importance of approaching the exploration of personality pathology in adolescence taking into account variations in the level of severity of personality functioning in key dimensions that are self-related (such as the stability of the self-image, the integration of body changes and sexuality, the presence of investments and goals,) and interpersonal related (such as the quality of relationships with significant figures within the family and among peers). In particular, greater impairment in personality functioning might be associated with difficulties in the adolescent's ability to recognize mental states of others (regarding feelings, behaviors and intentions). The latter is connected with the concept of mentalization (or "theory of mind", ToM) which refers to the capacity of the individual to consider others as having

independent mental states. Therefore, this informs how the individual can interpret, react to, feel all the others' feelings, behaviors etc. (e.g., Duval, Ensink, Sharp & Fonagy, 2018).

In their study Sharp and colleagues (2011) presented the first evidence of a relationship between mentalization as its expressed with an impairment in social cognitive abilities (and in particular different levels of mentalization), and the presence of borderline traits in a clinical sample: their results suggested a connection between the presence of alternative strategies of mentalization (such as hyper-mentalizing, or the tendency to have an excessive certainty about others' mental states and therefore make unwarranted inferences) and personality pathology.

In a recent study, Fontana and colleagues (2018) deepened the association between personality structure and mentalizing difficulties in adolescence in a study on the effects of ostracization during a Social Media Ostracism Paradigm. Results showed how the severity of personality functioning was able to predict impairments in mentalizing capacities more effectively than maladaptive personality traits. Overall, since most studies on personality in adolescence suffer either from a categorical approach or an approach solely based on maladaptive traits, deepening the relationship between the severity of personality functioning and the ability to mentalize is a theme that is still little explored and that certainly has significant consequences on adolescents' psychosocial adjustment (e.g., Nazzarro et al., 2017; Fossati et al., 2017) (see Chapter 5).

## DEVELOPMENTAL TRAJECTORIES OF PERSONALITY PATHOLOGY IN ADOLESCENCE

Looking at adolescence from a developmental perspective, we see that historically, it has been defined as a tumultuous and conflictual phase, where the subject had to maintain "a stable balance in a state of instability", and where this same balance was also preserved with the exacerbation of abnormal aspects (Freud, A., 1966). Alongside the conflicts that are specific of this phase of psychological

development, the adolescent brain is also developing, leading to the creation of a paradoxical situation in which "the adolescents want to be adults, and they're exposed to a semi-adult culture, but they don't have the prefrontal cortex to regulate those adult behaviors" (Giedd, 2003).

In his pioneering work, Offer (1981) highlighted how developmental pathways during adolescence can express different configurations, distinguishing a continuous growth group (23%, constituted by well-adjusted teens who fulfill their developmental tasks), a surgent growth group (35%, comprising reasonably well-adjusted adolescents, who might have difficulty coping with unexpected life events) and a tumultuous growth group (21%, including adolescents experiencing turmoil as defined by the "storm and stress" theorists).

While the 21% of the sample was not classified, the distribution of Offer's sample emphasizes the question if it is possible to trace a developmental pathway that is characteristic of adolescence and that would help understand prodromes of psychopathology as well as, more specifically, sub-threshold pathological personality functioning.

The first empirical studies on PDs in adolescence were mainly retrospective and cross-sectional, primarily focused on borderline pathology and underlining the importance of raising a debate on personality pathology in adolescence, defining an appropriate developmental model, without having to resort to adapted adult measures, but instead highlighting the specificities of the personality pathology in adolescence and its correlates (i.e., early attachment disruptions, traumatic experiences; Ludolph et al., 1990; Bernstein et al., 1993).

All in all, research has shown that personality pathology is not a non-modifiable construct. Today we know that the processes underlying maladaptive personality functioning are more dynamic than previously thought. However, to date, research has not an accurate idea of the different pathways that can lead to the exacerbation of PDs. To answer this question, it is certainly essential to conduct longitudinal studies (Cicchetti, 2014).

One fundamental contribution that emphasized how personality pathology onsets in adolescence come from the “Children in the Community” study (CIC; Cohen, Crawford, Johnson & Kasen, 2005) which is an ongoing investigation on the course of psychopathological disorders including PDs in a sample of 800 non-referred youths since 1975. The global aim of the CIC study is tracking the developmental trajectories of DSM Axis I and Axis II psychopathologies, and more specifically, designating prospectively risk and protective factors in the development of PDs from adolescence into adulthood (APA, 2000). Participants were assessed at baseline (T1) between 1-10 years old, then twice during adolescence (T2, only Axis I, mean age = 14; T3, only Axis II, mean age =16) and then during early adulthood (T4, mean age = 22) and adulthood (T5, mean age = 33).

Results showed that mean PDs symptoms decreased from early adolescence to adulthood in the 80% of the whole sample, while in the 20% PDs symptoms increased. Also, subjects displaying higher PDs symptoms showed different pathways than normative ones (with a general tendency to increase the severity of personality pathology). As maladaptive parenting behaviors, parental psychiatric disorders, child abuse and maltreatment were highlighted as significant risk factors; overall PDs symptoms showed to have their origins during childhood. But, to see their exacerbation, we have to wait for adolescence which is the moment when personality pathology actually unveils. Also, PDs has been shown to persist during adulthood: the higher symptomatology in early adolescence the higher negative prognostic incidence in adulthood. All in all, the CIC study underlined the importance of considering early manifestations of PDs in adolescence as well as of a specific definition of how personality pathology might unfold in adolescence.

Another crucial aspect of PDs in adolescence has been highlighted by Winograd and colleagues (2008) that analyzed a sub-group of 14 years old adolescents from the CIC study that were assessed for BPD symptoms at baseline and then after 20 years exploring their consequences on the level of functioning. The study highlighted that higher levels of BPD symptoms (independently from Axis

I pathology) are related with lower role and social functioning, lower life-satisfaction, less involvement in the relationship and lower occupational and academic achievements.

Thus, although conducting longitudinal studies is undoubtedly challenging, research shows their importance, even in the general population, so as to be able to identify not only possible developmental trajectories, but especially to plan early and effective interventions (Chanen, Sharp, Hoffmann & Global Alliance for Prevention and Early Intervention for Borderline Personality Disorder, 2017) (see Chapter 6).

## TABLES AND FIGURES

**Table 1. Instruments investigating maladaptive personality traits/functioning in adolescence.**

Personality scales		Personality traits dimensions		Personality functioning dimensions	
MACI	PID-5	DIPSI	DAPP-BQ-A	SIPP-118	IPO-A
Doleful (Depression)	Negative affectivity	Neuroticism (Dependency/ Submissiveness)	Emotional Dysregulation	Self-control	Unstable Sense of Self and Others
Introversion (Schizoid)	Detachment	Introversion	Inhibitedness	Identity integration	Reality Testing
Oppositional	Disinhibition	Affective instability (Unconscientious Disinhibition)	Dissocial Behavior	Relational capacities	Aggression
Borderline Tendency	Antagonism	Disagreeableness (Disagreeable Disinhibition)	Compulsivity	Social concordance	Moral Impairment
Inhibited (Avoidant)	Psychoticism	Compulsivity		Responsibility	Instability of Goals
Self-Demeaning (Self-Defeating)					
Submissive					
Dramatizing					
Egocentric					
Unruly					
Forceful (Sadistic)					
Conforming					

*Note* MACI = Millon Adolescent Clinical Inventory (Millon, Davies, & Millon, 1993); PID-5 = Personality Inventory for DSM-5 (Krueger et al. 2012; APA, 2013); DIPSI = Dimensional Personality Symptom Item Pool (De Clerq et al., 2006); DAPP-BQ-A = Dimensional Assessment of Personality Pathology Basic Questionnaire (Tromp & Koot, 2008); SIPP-118 = Severity Indices of Personality Problems-118 (Verheul et al., 2008; Feenstra et al. 2011); IPO-A = Inventory of Personality Organization in Adolescence (Biberdzic et al., 2017)

Figure 1. Overview of DSM-5 Alternative Model for Personality Disorders (AMPD; APA, 2013)

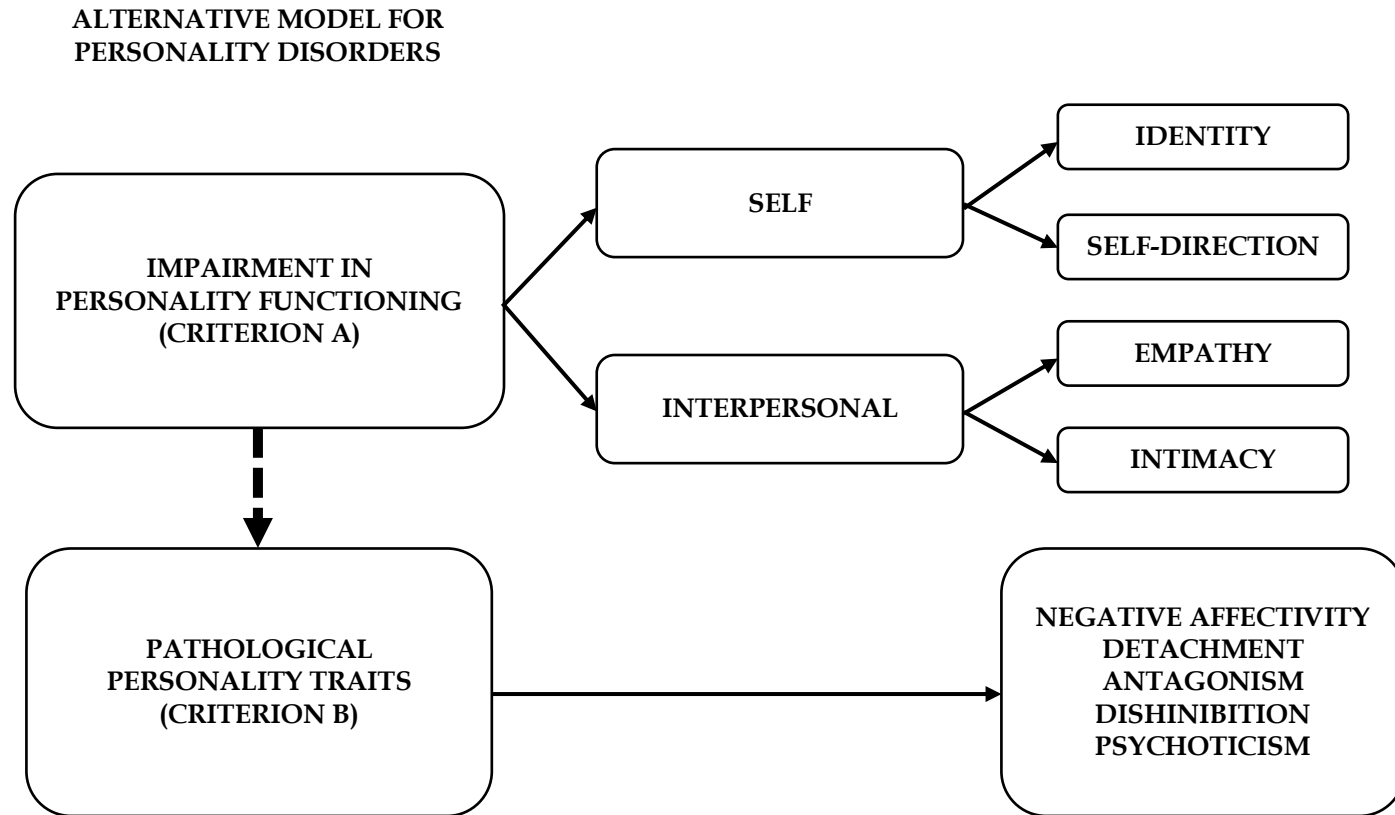
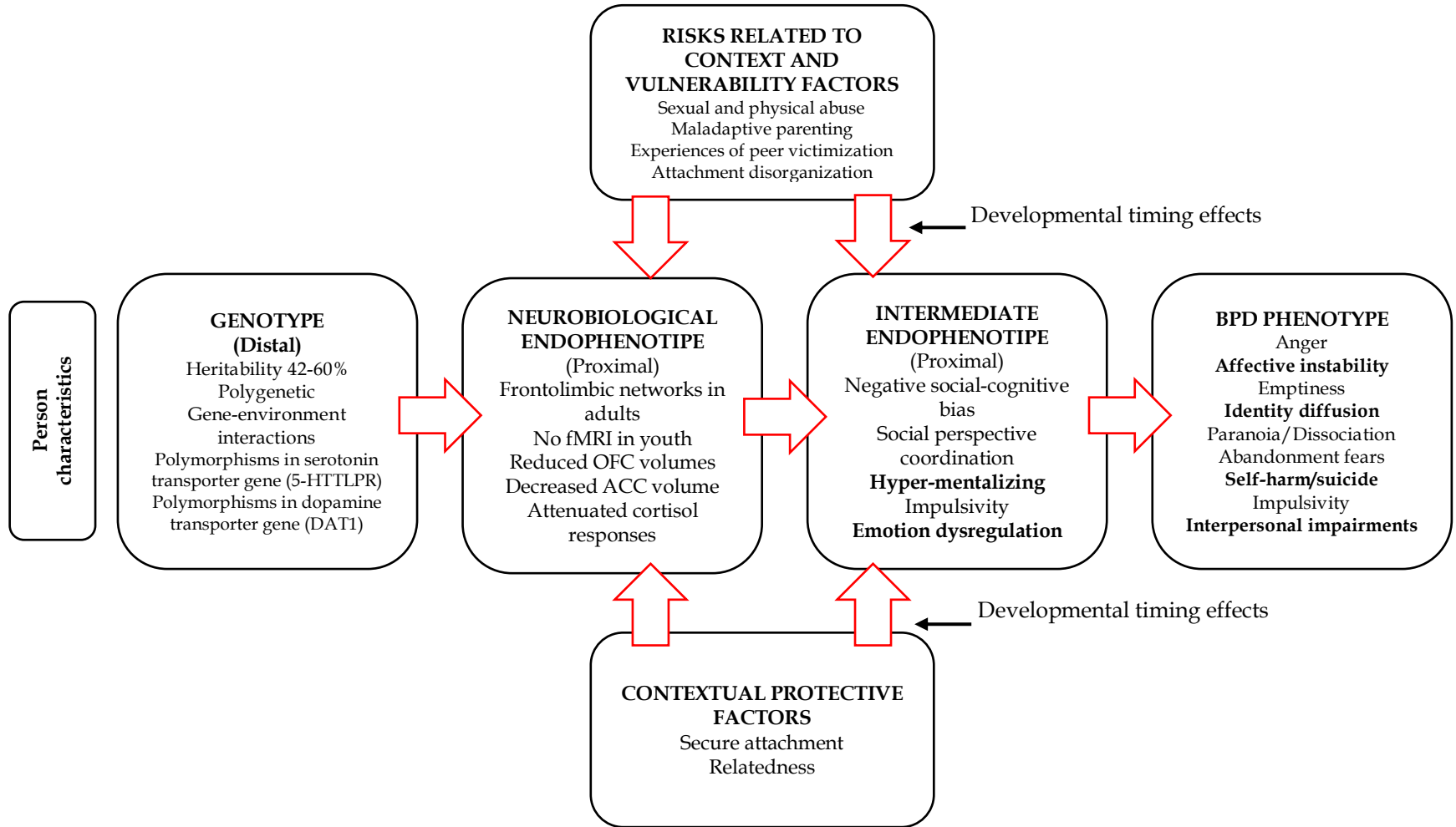




Figure 2. Etiological factors in the development of borderline personality disorder (adapted from Sharp & Fonagy, 2015)



## CHAPTER 2

### DEVELOPMENT OF PERSONALITY PATHOLOGY<sup>2</sup>

*This chapter aims at providing additional thoughts on the current conceptualizations around the development of pathological personality. In particular, outlining how the topic of identity disturbance, as a key process of PDs, has been mainly studied from a psychosocial point of view and what the contribution of the psychoanalytic framework has been.*

#### DEVELOPMENT OF PERSONALITY DISORDERS:

##### IDENTITY AS A KEY PROCESS

###### INTRODUCTION

Personality disorders (PDs) are defined as patterns of maladaptive personality traits that have an onset during childhood or adolescence and then impact significantly on the individual's life. Westen and Chang (2000) emphasized some issues that continue to challenge our understanding, among them the need to delineate what the core domains are that define personality in adolescence; and what kind of development, normal and pathological, we can expect during this period of life. Although we currently lack a deep understanding of the steps that lead to the development of PDs, research highlights specific developmental models that underline major key processes involved in the development of personality pathology (De Fruyt & De Clercq, 2014; Ensink et al., 2015).

Within this context, the definition of identity and the hypotheses on its formation (IF) emerged as important aspects to consider in order to deepen the understanding of PDs. In fact, evidence of a strong relationship between identity

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<sup>2</sup> This chapter is based on **Benzi, I.M.A., & Madeddu, F. (2017). Development of Personality Disorders: Identity as a Key Process. INTERNATIONAL JOURNAL OF PSYCHOLOGY & BEHAVIOR ANALYSIS, 3(124), 1-3.**

pathology and PDs was found: impairment in identity integration resulted predictive of PDs in adults (Skodol, Bender, Oldham, Clark, Morey et al., 2011) as well as identity disturbance in adolescents (lack of normative commitment and consistency, role absorption and incoherence) has proven to be related with different forms of personality pathology (Westen, Betan & DeFife, 2011). Also, research investigated the role of both identity and personality traits in the development of personality: the significance of personality traits for psychological development was emphasized (Klimstra, 2012) as well as a mutual interaction between identity and personality traits was demonstrated (Luyckx, Soenens & Goosens, 2006). Besides, identity impairment seems to play a significant role in understanding higher-order constructs that are related to PDs, such as externalizing and internalizing (Luyten & Blatt, 2011): behavioral and emotional difficulties in adolescence are related to internalizing aspects, such as depression and anxiety, and externalizing symptoms, such as aggression (Besser & Blatt, 2007), whilst identity processes, like exploration and commitment, result negatively associated with internalizing features (Jung, Pick, Schlüter-Müller, Schmeck & Goth, 2013).

### IDENTITY DOMAINS

The concept of identity has undergone different formulations over the years, starting from the first conceptualization proposed by Erikson that described the construct of identity as *normal ego identity*, which permits the development of an adaptive personality; *identity crisis*, which is typical of adolescence, challenging the adolescents to update self and interpersonal features according to the developmental shifts they are facing; and *identity diffusion*, a significant impairment in experiencing an integrated self and clear boundaries between self and others, that is linked to PDs (Erikson, 1959).

Later revisions of the concept can be grouped into two main domains. On the one hand, psychoanalytic and psychodynamic theories refer to identity as a subjective experience emphasizing its continuity/discontinuity and its emotional aspects. On the other, social-cognitive perspectives investigate identity related to its

interpersonal reflections focusing on coherence, cognitive access and social indicators (Foelsch, 2014).

According to the former domain, O. Kernberg formulated an approach that considers the subjective aspects of identity, suggesting a dimensional model of personality that integrates identity, psychic defenses, and reality testing in order to delineate different levels of functioning (neurotic, borderline and psychotic). Identity diffusion, which corresponds to non-integrated, positive and negative, internalized aspects of the self, is considered one of the key process of personality pathology (Kernberg, OF, 1998). As pointed out by M.P. Kernberg et al. (2000) the clinical manifestations of identity pathology in adolescence have an influence both on self-functioning, affecting their ability to express themselves, to develop and maintain life goals and interests, and interpersonal functioning, implying difficulties in establishing and maintaining relationships, in empathizing and in the ability to understand other people perspectives.

A development of the social-cognitive viewpoint is Marcia's (Kroger & Marcia, 2011) which acknowledged two key processes of IF: *exploration*, demonstrating how adolescents are able to experiment themselves among different levels of *commitment* within the domains of identity; and *commitment*, which explains how youths make choices regarding their own identity and are actually committed to them. Depending on the level of exploration and commitment, Marcia delineated four identity statuses: *identity diffusion* (lack of commitment related to a developmental task), *foreclosure* (not enough exploration), *in moratorium* (exploration but no significant commitment) and *identity achievement* (exploration is completed, and commitment is fully achievable). Both the approach that focuses more on identity of the self and the social-cognitive perspective, highlight a dimensional conceptualization of the construct: on the one hand, in terms of level of integration, on the other, related to a certain degree of development of different identity processes (Meeus, 2011).

## TOWARD A MODEL FOR PERSONALITY DISORDERS: THE ROLE OF IDENTITY

Currently, the scientific community is involved in a wide-ranging reflection on PDs: in particular, research tries to frame core aspects and to formulate a clinically relevant description of PDs (Clarkin, Meehan & Lenzenweger, 2015). In this regard, during the last decade clinicians and researchers have been involved in a debate on psychopathological personality structures with the aim of overcoming the limitations of the diagnostic system proposed by the DSM-IV-TR (Skodol, 2012) (e.g. co-occurrence among PDs, clinical heterogeneity, temporal instability) and accounting for the evidence that severity of the impairment is the most significant predictor of concurrent and forthcoming dysfunctions (Skodol, Clark, Bender, Krueger, Morey et al., 2011). An answer to these limitations is coming from both the major diagnostic systems, DSM and ICD, with the formulation of a dimensional approach, considering the severity of the personality impairment and recommending a revision of the central aspects of the disorder (APA, 2013): DSM-5, while maintaining the previous classification for PDs, suggests in Section III (Emerging Measures and Models) an hybrid model for PDs; instead, the proposed ICD-11 classification eliminates the previous specific PDs and promotes a dimensional assessment of the personality disorder itself (Tyrer, Reed & Crawford, 2015).

While both the Alternative Model of DSM-5 and the proposal for the ICD-11 consider a combination of pathological traits in the evaluation of personality pathology, a distinct feature of the DSM-5 hybrid model is the core aspect of personality pathology: in fact, DSM-5 proposes to assess impairment in self-functioning (deficits in *identity* and *self-direction*) and in interpersonal functioning (deficits in *empathy* and *intimacy*) as central features of PDs. Such impairments are measured along a scale ranging from little or no-impairment up to extreme impairment. Besides the evaluation of the Level of Personality functioning, DSM-5 introduces twenty-five specific trait facets that are organized into five main domains (negative affectivity, detachment, antagonism disinhibition vs. compulsivity and

psychoticism): a growing amount of research follows this approach and, although adolescence is a stage of development marked by intense fluctuations involving behavioral, cognitive and affective aspects, demonstrates how personality traits are characterized by an overall stability during the transition from childhood to adulthood and might be clinically more relevant than sets of symptoms in understanding PDs (Luyckx, Teppers, Klimstra & Rassart, 2014). Such a dimensional approach allows the pathology of personality itself to be considered as an extreme manifestation of impairment that lies along a continuum that includes different levels of severity. Thus, the assessment of personality functioning can be linked to the key processes that are maladaptive both on an intra-psychic and interpersonal level rather than just to symptomatic manifestation: indeed, the hybrid model proposes five specific PDs (antisocial/ psychopathic, avoidant, borderline, obsessive-compulsive, and schizotypal), each one of those is characterized by an impairment in personality functioning and is described with a trait list that specify its fundamental pathological personality traits (Skodol et al., 2011b). Furthermore, this approach has shown an increase in the stability between the patterns of personality found in adolescence through adulthood (Stepp, 2012). This kind of model helps to highlight the crucial role of identity in understanding PDs: in fact, as a feature of the impairment of the self, identity is the subject's ability to have a unique experience of the self and also to have clear boundaries between self and others. This aspect seems to be critical in influencing other parts of personality pathology: an integrated identity influences the subject both in pursuing goals in life and in self reflecting productively (*self-direction*) and in understanding other people perspectives (*empathy*) and forming close relationships (*intimacy*) (Schmeck, Schlüter-Müller, Foelsch & Doering, 2013).

## CONCLUSIONS

Due to the assumption of a dimensional perspective, research and clinical experience seem to emphasize the complexity of the role identity plays in understanding PDs and open up challenging lines of research. Firstly, different

dimensions of the identity construct, such as the subjective experience (integration vs. diffusion) and the social-cognitive perspectives (degrees of development of identity processes), seem to properly unravel aspects of the self and interpersonal impairment in personality pathology. In addition, this consideration appears to underline the clinical utility of considering both dimensions of identity together trying to understand whether the subject has an integrated image of himself and how this might affect the level of exploration and commitment (Schmeck et al., 2013). In the light of this, another promising area of study might be the exploration of the mutual relationship between identity and personality traits, given that research has shown how configurations of maladaptive traits are linked to self and interpersonal difficulties (Wright, Pincus, Hopwood, Thomas, Markon et al., 2012).

#### Competing interests

The authors declare that they have no competing interests.

# CHAPTER 3

## A DIMENSIONAL APPROACH TO PERSONALITY FUNCTIONING<sup>3</sup>

*As in the previous chapters we have highlighted some of the contemporary reflections on PDs, this chapter focuses on the relationship between the conceptualization of personality based on the severity of functioning and one based on the severity of traits. As we have seen, the importance of integrating two historic and important traditions was emphasized by the new edition of DSM-5. Thus, the first study attempts to deepen the contribution of personality functioning in the relationship between maladaptive traits and psychological difficulties. The second study adopts a dimensional perspective, rather than just a symptomatic one, to look more in depth at a phenomenon that is highly prevalent in adolescence such as NSSI behaviors.*

### STUDY 1

#### MALADAPTIVE PERSONALITY TRAITS AND PSYCHOLOGICAL DISTRESS IN ADOLESCENCE: THE MODERATING ROLE OF PERSONALITY FUNCTIONING

#### INTRODUCTION

Extensive research has acknowledged adolescence as a sensitive period for the development of mental disorders (e.g., Ensink et al., 2015; Sharp & Wall, 2017). This “storm and stress” phase involves the consequences of physical transformations related to puberty (e.g., Bucchianeri, Arikian, Hannan, Eisenberg & Neumark-Sztainer, 2013) and the impact of neurobiological modifications (e.g.,

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<sup>3</sup> This chapter is based on **Benzi**, I. M., Preti, E., Di Pierro, R., Clarkin, J. F., & Madeddu, F. (2018). Maladaptive personality traits and psychological distress in adolescence: The moderating role of personality functioning. *Personality and Individual Differences*; and on **Benzi**, I., Sarno, I., & Di Pierro, R. (2018). Maladaptive personality functioning and non-suicidal self injury in adolescence. *Clinical neuropsychiatry*, 15(4), 215-221.



Powers & Casey, 2015). At a psychological level, multilayered changes occur related to the self, such as identity formation and affect regulation, and to interpersonal experiences, such as the changing relationship with the primary caregivers and the development of the first significant bonds with peers, both friendly and romantic (e.g., Fonagy et al., 2004; Normandin, Ensink & Kernberg, 2015).

Generally, clinicians and researchers have been more interested in psychiatric disorders than PDs in adolescence. Perhaps one of the reasons is that symptoms, such as hallucinations in schizophrenia or mood in major affective disorders, are more clearly observable and measurable than the manifestations of underlying and pervasive personality pathology (Kernberg, P.F., et al., 2000). Also, even though DMS-5 allows for PDs diagnosis during adolescence (APA, 2013), there has been an overall caution in early diagnosis of such conditions mainly because of the potential iatrogenic effect that a diagnostic label might foster (such as strengthening the identification with a pathological identity) or insufficient data on the stability of diagnosis (Miller et al., 2008). Paulina Kernberg (2000), almost two decades ago, emphasized the paradoxical vicious circle in which, on the one hand, PDs in adolescents were not sufficiently subjects of epidemiological research, while on the other, clinicians did not diagnose them due to a lack of robust empirical data. Nevertheless, personality functioning and its possible abnormalities in adolescence have proven to be a fundamental topic to address to specify meaningful developmental models and also provide early intervention and care (e.g., Ensink et al., 2015; Sharp & Wall, 2017).

Recently, empirical research on pathological personality in adolescence has been progressively growing, highlighting the crucial role of borderline personality functioning, its comorbidity with other mental disorders, the stability of maladaptive personality traits as well as the prevalence of personality pathology and significant risk factors for the onset of PDs during adolescence (e.g., De Clercq et al., 2006; Zanarini et al., 2011; Sharp & Fonagy, 2015).

Given the numerous limitations of the categorical approach to PDs (Livesley & Jang, 2000; Skodol, 2014), the latest edition of the DSM (APA, 2013) marked an

essential change in the conceptualization of PDs diagnosis, promoting the Alternative Model for Personality Disorders (AMPD). The AMPD is based on the assessment of the level of severity of personality functioning in defining personality pathology, rather than on the presence/absence of specific symptoms, and it may be especially meaningful in conceptualizing personality pathology among youths, as it allows the detection of individual differences and instabilities that are typical of this developmental phase (Geukes, Nestler, Hutteman, Küfner & Back, 2016). The AMPD emphasizes two different aspects that contribute to maladaptive personality: on the one hand the level of severity of personality functioning (Criterion A), on the other the contribution of maladaptive personality traits (Criterion B). That comes as a fundamental recognition of two distinct, but yet interconnected aspects of personality pathology (Livesley & Jang, 2000). According to the AMPD, PDs are thus characterized by impairments in self (identity and self-direction) and interpersonal functioning (empathy and intimacy) (Criterion A), as well as by the presence of specific dimensions of maladaptive personality traits assessed through five broad trait domains (Negative affectivity, Detachment, Antagonism, Disinhibition, Psychoticism) (Criterion B).

#### MALADAPTIVE PERSONALITY TRAITS

Personality in adolescence has mostly been studied according to non-pathological personality models, such as the Big Five model (McCrae & Costa, 2004). Overall, empirical studies have focused on a vulnerability/predisposition to psychopathology, investigating the relations of personality traits with externalizing pathology (such as conduct problems, substance use and oppositional/defiant behaviors), as well as with internalizing pathology (mainly related to anxiety and depression problems) (see Tackett, 2006 for a comprehensive review). In general, low Conscientiousness has been found related to antisocial behaviors (e.g., Lynam et al., 2000) and features of negative emotionality (Neuroticism) were related to substance use in early adulthood (e.g., Cloninger, Sigvardsson & Bohman, 1988). Considering the internalizing spectrum of pathological consequences, some

combination of high Neuroticism and low Extraversion (e.g., temperament trait of Behavioral Inhibition; Kagan, Snidman, Arcus & Reznick, 1994), were found as predictors of anxiety disorders. Furthermore, research has underlined relationships between low Conscientiousness and suicide attempts similarly to high levels of Neuroticism combined with novelty seeking (Fergusson, Beautrais & Horwood, 2003).

Thus, the majority of studies considered associations between non-pathological personality traits and psychopathological outcomes, which in turn might not properly capture specific features of maladaptive functioning.

Considering pathological personality traits in adolescence, only a few dimensional models have been proposed. De Clercq and colleagues (2006) identified extreme pathological traits in adolescence (e.g., neuroticism, emotional instability, introversion, disagreeableness, and compulsivity), and explored their relationship with maladaptive outcomes (De Clercq, Van Leeuwen, De Fruyt, Van Hiel & Mervielde, 2008). Moreover, Tromp and Koot (2008) revised the Dimensional Assessment of Personality Pathology Basic Questionnaire (DAPP-BQ; Livesley & Jackson, 2009) identifying four traits of pathological personality (emotional dysregulation, dissocial behavior, inhibitedness, and compulsivity). These traits have been conceptualized as extreme versions of the Big Five model, emphasizing a continuum across normal and abnormal personality (Van Den Akker, Prinzie & Overbeek, 2016).

Given the scarcity of research focused on maladaptive traits in adolescence, the proposal of the AMPD acknowledges the importance of exploring these facets of personality. In order to do so, the Personality Inventory for DSM-5 (PID-5; Krueger et al., 2012; APA, 2013) has been developed. The PID-5 describes five maladaptive traits: Negative affectivity and Detachment (internalizing in nature), Antagonism and Disinhibition (externalizing in nature) and Psychoticism. Negative affectivity encompasses aspects primarily related to emotional lability and anxiousness and Detachment includes facets such as withdrawal and intimacy avoidance. Moreover, Antagonism covers characteristics pertaining principally to

manipulativeness and grandiosity and Disinhibition comprises features such as irresponsibility and impulsivity. Finally, Psychoticism mainly regards the presence of unusual beliefs and experiences and perceptual dysregulation (Wright et al., 2012).

#### MALADAPTIVE PERSONALITY FUNCTIONING

According to the AMPD, maladaptive traits are not sufficient to diagnose PDs. Indeed, as Livesley and Jang emphasized (2000), maladaptive traits are one of the components of the *“personality system, albeit an important one. Personality also consists of cognitive processes and structures that influence modes of thought and experience. More importantly, personality is integrated and organized in nature”* (ibidem, pp. 141). Thus, it is necessary also to consider personality functioning when investigating fluctuations in personality during this developmental period. As previously stated, as the AMPD Criterion A is a core aspect for PDs, the Level of Personality Functioning Scale (LPFS; Bender et al., 2011) has been developed as a clinician-rated tool in order to evaluate self (identity and self-direction) and interpersonal (empathy and intimacy) domains of functioning. Each of the four domains further encompass three-facets that can be rated on a five-level scale of severity, varying from no impairment (0) to extreme impairment (4). The LPFS has also been proved to be easily and effectively administrable by inexperienced raters (e.g. Zimmermann et al., 2014; Preti et al., 2018). Recently, a self-report version of the instrument has also been developed (LPFS-SR; Morey, 2017). Previously, exploring Criterion A of the AMPD, Morey and colleagues (2011) elaborated a description of a continuum of severity of personality pathology through item response theory (IRT), selecting items from the General Assessment of Personality Disorders (GAPD; Livesley, 2006) and from the Severity Indices of Personality Problems (SIPP 118; Verheul et al., 2008). Indeed, the SIPP-118 captures self and interpersonal aspects of personality functioning through five domains: Identity integration, Self-control, Relational capacities, Social concordance, and Responsibility.

The Identity integration domain includes facets like frustration tolerance, self-respect, purposefulness, and enjoyment which describe the ability of the adolescent to see oneself in an integrated and stable way. Moreover, the Self-control domain includes facets like emotion regulation, effortful control, the stability of self-image and self-reflexive function which describe the ability of the adolescent to tolerate, use, and control emotions and impulses. Also, the Responsibility domain includes facets of responsible industry and trustworthiness which refer to the ability to set realistic goals and to achieve these goals in line with the expectations you have generated in others. According to literature (Bender et al., 2011; Morey et al., 2011), these three domains refer to self-functioning features.

The Relational domain includes facets measuring feeling of recognition, capacity for intimacy, and presence of enduring relationships which describes the ability to genuinely care about others as well as feeling cared about them, to be able to communicate personal experiences, and to hear and engage with the experiences of others often but not necessarily in the context of a long-term, intimate relationship. Moreover, the Social Concordance domain refers to the ability to value someone's identity, withhold aggressive impulses towards others and to work together with others, and includes facets like aggression regulation, respect, and cooperation. Again, according to literature (Bender et al., 2011; Morey et al., 2011), both domains refer to interpersonal functioning features.

#### MALADAPTIVE TRAITS AND MALADAPTIVE PERSONALITY FUNCTIONING

The AMPD model aims at underlining the importance of considering both functional impairment and patterns of maladaptive traits to diagnose PDs. Nevertheless, recent research found mixed results that we ought to consider. For example, recent studies underlined the importance of considering functional impairment as crucial in order to distinguish pathological personality and other psychopathologies. A study on both non-clinical (undergraduates) and clinical samples (Keeley et al., 2014) found significant associations between functional impairment and maladaptive traits. Moreover, Wygant and colleagues (2016)

showed that considering functional impairment added incremental validity to antisocial maladaptive traits in predicting Antisocial PD in an inmates' sample. However, Zimmerman and colleagues (2015), assessing functional and trait impairments on adult (clinical and non-clinical) populations, found a blurry distinction between Criterion A and B. Moreover, Sleep and colleagues (*in press*), using the LPFS-SR on an adult community sample, found that functional impairment was related not only to PDs but also to other psychiatric disorders, questioning the specificity of Criterion A. Also, they found that maladaptive traits accounted for more unique variance in explaining Section II PDs.

All in all, although several studies have shown that little incremental validity is provided by measuring functional impairment when considering variations in trait pathology (e.g. Few et al., 2013), there is general consensus on the importance of acknowledging functional impairment in order to evaluate the severity of personality pathology (e.g. Morey, 2017; Boland, Damnjanovic & Anderson, 2018). Moreover, to our knowledge, no study has explored the role of maladaptive personality traits and functional impairment and their interplay in contributing to psychological distress in adolescence.

#### AIMS OF THE STUDY

The present study aims at investigating how the interplay between maladaptive personality traits and severity of personality functioning might account for psychological distress during adolescence, as previous studies have not empirically examined it. Indeed, according to the AMPD, both impairments in self and interpersonal functioning (Criterion A) and the presence of maladaptive personality traits (Criterion B) are essential features of personality pathology, which in turn is usually associated with high psychological distress (e.g., De Clercq et al., 2008).

In particular, we aim at exploring the association between maladaptive traits and psychological distress, considering the moderating effect of the level of personality functioning in a large sample of non-clinical adolescents. Indeed, the

AMPD model suggests evaluating personality pathology considering two main steps: firstly, the level of personality functioning, and secondly the presence of maladaptive traits. Thus, we hypothesize that the strength of the association between maladaptive traits and psychological distress would vary as a function of the level of severity of personality functioning: on the one hand more severe personality functioning (Criterion A) would amplify the effect of maladaptive personality traits, whilst on the other more adaptive personality functioning would diminish the influence of maladaptive traits (Criterion B).

## METHODS

### PARTICIPANTS

A sample of 562 participants (351 females, 62,5%, and 211 males, 37,5%) aged between 13 and 19 years ( $M = 16.24$ ,  $SD = 1.69$ ) were recruited from middle and secondary schools in Northern Italy. The assessment was performed after receiving authorization from both parents of underage students and older students themselves. In order to ensure anonymity, students were given a unique reference code, and self-report questionnaires were completed via a private web link. The Institutional Review Board approved all materials and procedures.

### MEASURES

#### *Personality Inventory for DSM-5*

(PID-5; Krueger et al. 2012; APA, 2013; Somma et al., 2017)

The PID-5 is a 220-item questionnaire that measures maladaptive personality traits as proposed in the Alternative Model for Personality Disorders (AMPD) in DSM-5. Responses are rated on a 4-point Likert scale (0 = *very false or often false* to 3 = *very true or often true*): the higher the scores, the higher the severity of pathological traits. PID-5 measures 5 trait domains: Negative affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism. The five trait domains showed good internal consistency coefficients (Negative affectivity:  $a = .91$ ; Detachment:  $a = .91$ ; Antagonism:  $a = .89$ ; Disinhibition:  $a = .89$ ; and Psychoticism:  $a = .94$ ).

### *Severity Indices of Personality Problems – 118*

*(SIPP-118; Verheul et al., 2008; Feenstra et al., 2011)*

The SIPP-118 is a dimensional measure of personality functioning. This instrument aims to measure the core components of adaptive/maladaptive personality functioning. The self-report questionnaire consists of 118 items related to the last 3 months and measured on a 4-point Likert scale (1= *I fully agree* to 4= *I fully disagree*): higher scores indicate better adaptive functioning, whereas lower scores represent more maladaptive personality functioning.

The SIPP-118 measures 5 broad domains of personality functioning: Identity Integration, Self-control, Relational Capacities, Social Concordance and Responsibility. All the scales showed good internal consistency coefficients (Identity integration:  $a = .90$ ; Self-control:  $a = .91$ ; Relational capacities:  $a = .88$ ; Social concordance:  $a = .87$ ; and Responsibility:  $a = .86$ ).

### *Symptom Check List-90-Revised*

*(SCL-90-R; Derogatis, 1996; Prunas et al., 2012)*

SCL-90-R is a self-administered 90-item questionnaire that measures psychological and physical symptoms during the last week on a 5-point scale, ranging from "no symptoms" to "many symptoms." For the present study, we used the Global Severity Index (GSI), corresponding to the average score of all the items, as a measure of psychological distress. The GSI scale showed a good internal consistency ( $\alpha = .97$ ).

## STATISTICAL ANALYSES

Statistical analyses were conducted using the statistical software IBM SPSS Statistics for Macintosh, Version 24.0 (IBM Corp., 2015). General descriptive statistics were computed to describe the sociodemographic characteristics of the participants. Also, we explored gender differences by computing independent samples T-test and calculated Spearman correlations between age and



psychological distress (SCL-90-R), as well as between our key variables (e.g., maladaptive personality traits, PID-5, and personality functioning domains, SIPP-118) and psychological distress.

To test the associations between maladaptive personality traits and psychological distress, we conducted Pearson *r* correlations coefficients and a multiple regression analysis accounting for gender contribution. Finally, we examined whether the dimensions of personality functioning would moderate the effect of maladaptive traits on the adolescent's psychological distress. Thus, we performed a series of moderation analyses following Hayes' (2013) recommendation for generating conditional effects of the moderator (PROCESS). We considered the PID-5 maladaptive traits dimensions as separate independent variables, the GSI as the dependent variable, and the SIPP-118 personality dimensions as moderators, controlling for gender and maladaptive traits as covariates. Significant interactions were decomposed using simple slope analyses at low (-1SD), Medium, and High (+1SD) of the moderator.

## RESULTS

### THE RELATIONSHIP BETWEEN MALADAPTIVE PERSONALITY TRAITS AND PSYCHOLOGICAL DISTRESS

To evaluate zero-order associations between maladaptive traits (PID-5) and psychological distress (SCL-90-R), we computed Pearson *r* correlations coefficients. Results are reported in Table 1. Also, we computed a multiple regression model to test the same associations<sup>4</sup>. Results are reported in Table 2. Pearson *r* correlations showed significant relationships between all maladaptive traits and psychological distress. Thus, the higher the level of maladaptive traits, the higher the level of psychological distress. However, the regression model showed that only

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<sup>4</sup> We included gender in this model as we found significant differences between males ( $M = .79, SD = .55$ ) and females ( $M = 1.06, SD = .58$ ) in the level of psychological distress,  $t(555) = -5.42, p < .001$ . We did not include age as there were no significant correlations between age and psychological distress ( $r = -.05, p = .18$ ).

internalizing maladaptive traits (Negative affectivity and Detachment) and Psychoticism were significantly associated with psychopathological distress. Thus, the higher the level of these specific traits, the higher the level of psychopathological distress. On the other hand, externalizing maladaptive traits (Antagonism and Disinhibition) were no more significantly associated with psychopathological distress.

#### THE MODERATION EFFECT OF THE LEVEL OF SEVERITY OF PERSONALITY FUNCTIONING DIMENSIONS IN THE RELATIONSHIP BETWEEN MALADAPTIVE PERSONALITY TRAITS AND PSYCHOLOGICAL DISTRESS

We considered all the five dimensions of personality functioning as measured by the SIPP-118, and explored their effect as moderators in the relationship between maladaptive personality traits and psychological distress<sup>5</sup>. The main interaction effects are summarized in Table 3.

As reported in Table 4, results showed that Identity integration, Self-control, and Relational capacities moderated the relationship between internalizing traits (Negative affectivity and Detachment) and psychological distress, as well as between Psychoticism and psychological distress. Also, we found that Social concordance moderated the relationship between Detachment and psychological distress. All the other moderation models that we examined were not significant. Considering Identity integration, we found that both Negative affectivity and Psychoticism increasingly predicted psychological distress at high, medium and low levels of personality functioning: the higher the impairment in Identity integration, the higher the presence of maladaptive traits such as Negative affectivity and Psychoticism is associated with psychological distress. Also, we found that Detachment has a significant association with psychological distress, only at low levels of Identity integration. In other words, Detachment was associated with psychological distress only for adolescents presenting a high

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<sup>5</sup> For every model, we included all the maladaptive personality traits as covariates, since we found significant correlations between all of them, except for Negative affectivity and Antagonism (see Table 1). We also controlled for gender (see note 4).

impairment in Identity integration (e.g., difficulties in frustration tolerance, self-respect, purposefulness, and enjoyment).

Considering the Self-control dimension, we found that Negative affectivity, Detachment, and Psychoticism were increasingly associated with psychological distress at high, medium and low levels of personality functioning. Thus, the more the adolescents show an impairment in Self-control (which includes emotion regulation, effortful control, stable self-image and self-reflexive functioning), the more the presence of Negative affectivity, Detachment and Psychoticism is significantly associated with psychological distress.

Moreover, accounting for the Relational capacities dimension, we found that both Negative affectivity and Psychoticism were increasingly associated with psychological distress at high, medium and low levels of personality functioning. Therefore, in adolescents, the higher impairment in Relational capacities (meaning feeling recognized, capacity for intimacy, and presence of enduring relationships), the higher occurrence of maladaptive traits such as Negative affectivity and Psychoticism is significantly associated with psychological distress. Also, we found that Detachment has a significant impact on psychological distress only for low and medium levels of Relational capacities. Thus, Detachment is associated with psychological distress only in adolescents presenting on average medium to greater impairment in Relational capacities.

Finally, considering the Social concordance dimension, we found that Detachment was increasingly associated with psychological distress at high, medium and low levels of personality functioning. Hence, in adolescents, the lower functioning in Social concordance (which includes aspects such as aggression regulation, respect, and cooperation), the higher presence of Detachment is significantly associated with psychological distress.

## DISCUSSION

This study explored the interaction between maladaptive personality traits and the severity of personality functioning related to psychological distress in

adolescence. More specifically, we evaluated the relationship between maladaptive personality traits and increased psychological distress. Furthermore, the level of severity of personality functioning, related to self and interpersonal features, was evaluated as a potential moderator of the strength of the association between maladaptive personality traits and outcomes of psychological distress.

First, results suggest that internalizing traits, but not externalizing traits were related to psychological distress. Indeed, even though both internalizing and externalizing maladaptive traits are positively associated with psychological distress, only internalizing maladaptive traits maintain their significant associations with psychological distress when considered in the context of the other maladaptive personality traits. Internalizing traits of Negative Affectivity (such as emotional lability, anxiousness, and separation insecurity) and Detachment (presence of withdrawal, anhedonia, avoidance of intimacy), and Psychoticism were significantly related to psychological distress when their effects were considered in the context of other maladaptive traits. On the contrary, externalizing traits such as Antagonism (manipulativeness, deceitfulness, and grandiosity) and Disinhibition (features of irresponsibility, impulsivity, and distractibility), were not significantly related to psychological distress when considered in the context of the other traits. These results might suggest that in the adolescent population, internalizing features might foster a higher sensitivity to experiencing subjective distress. We ought to consider that externalizing features might distract the individual away from internal cues of distress. Moreover, externalizing personality traits, such in the case of antagonism, might not be predictors of psychological distress in adolescence, as a higher level of antagonism might be less abnormal in this population compared to the adult one given that an intricate configuration of physiological and psychological changes occur during this developmental period (e.g. Powers & Casey, 2015).

Second, the level of severity of functioning of specific dimensions of personality (e.g., Identity integration, Self-control, Relational capacities and Social concordance) was a moderator in the relationship between maladaptive traits and

psychological distress. It was the effect of internalizing traits and psychoticism that significantly varied as a function of the level of severity of personality problems.

Overall, the results of the study suggest that for both Self and Interpersonal features of personality), high levels of impairment in personality functioning enhance the effect of internalizing maladaptive traits (with the exception of Social concordance that only influences Detachment) and psychoticism on psychological distress. This association is consistent with a conceptualization of PDs in which different levels of impairment in personality organization are closely related to identity integration, which encompasses aspects such as the coherence and stability of self, the ability to recognize internal states (both cognitive and emotional) and the quality of inner representations of others (Kernberg, O.F., 1984; Kernberg, P.F. et al., 2000; Ammaniti et al., 2012). The centrality of these aspects in shaping personality pathology has also been empirically demonstrated (e.g., Preti et al., 2015; Richetin, Preti, Costantini & De Panfilis, 2017). Moreover, these findings stimulate a broader reflection on the importance to disentangle the relationship between personality functioning and personality traits adequately. As research already pointed out (e.g., Livesley & Jang, 2000; Sharp & Wilks, 2017), personality pathology comprises impairments in personality functioning, which refer to structures and processes that influences our experience and the way in which we think about the inner and external world (Criterion A), but also the presence of specific combinations of maladaptive traits which contribute to further define the individual's personality pathology (Criterion B). In this sense, our findings highlight that psychological distress might depend on the interplay between impairments in personality functioning and maladaptive personality traits, distinguishing their specific contributions.

Indeed, it seems that personality functioning (both self and others related) might be closely associated to internalizing aspects in adolescence, in other words, in this developmental period the structuring of the level of personality functioning captures all the internal fluctuations that adolescents might experience, such as

facing emotion regulation issues related to anxiety or separation insecurity as well as concerns about intimacy and relationship with others in general.

The results of the study should be understood in the context of its limitations. First, our results suggest that impairments in Self- and interpersonal functioning moderate the association between maladaptive traits and psychological distress. However, in order to properly investigate Criterion A according to its original conceptualization, it would be important to administer the LPFS or the LPFS-SR to evaluate functional impairment. Second, in order to better clarify the role of externalizing traits, future research might focus on different maladaptive outcomes, such as the ones measured by the World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0), which is included in the latest edition of the DSM, that focuses on behavioral and “externalized” outcomes. Third, maladaptive traits, personality functioning, and psychological distress were evaluated with self-report measures. Future research should employ clinical interviews in order to assess more in-depth the level of maladaptive functioning and its features which is crucial when investigating adolescent populations. Also, the cross-sectional design of the study precludes any inference on causality among the study variables; longitudinal studies could clarify how the development of personality functioning through adolescence influences the strength of the relationship between maladaptive traits and psychological distress. Finally, the current results need to be replicated in clinical samples as well as in larger and culturally diverse populations of adolescents.

In conclusion, our study is consistent with recent literature (e.g., Sharp & Wall, 2017) that emphasizes the importance of the level of personality functioning in emerging personality structure in adolescence. Also, we provide evidence for the importance of considering a dimensional approach to personality pathology in adolescence as it is operationalized in the AMPD as a significant predictor of psychological distress whilst considering the contribution of the severity of functional impairment. This adds to the debate previously highlighted on the

specific contribution of the level of personality functioning (e.g. Wygant et al., 2016; Sleep et al., 2018) when adopting a dimensional approach to personality pathology. Hence, adding to a growing body of research on this subject (e.g. Boland et al., 2018), we showed that an impairment in self and interpersonal-related areas of functioning increasingly enhances the effect of maladaptive traits on psychological distress, and that the specific contribution of functional impairment might be crucial to consider.

These findings encourage further reflections for clinical intervention in this developmental phase. Indeed, our results suggest that personality functioning should be regarded as a primary target for clinical intervention, given its role in exacerbating the maladaptive effects of pathological personality traits.

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#### Conflict of interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

TABLES

Table 1. Correlation (Pearson *r*) within the Personality Inventory for DSM-5 (PID-5) domains and with the Symptom Check-list 90 Revised (SCL-90-R).

	PID-5 domains					SCL-90-R
	Negative affectivity	Detachment	Antagonism	Disinhibition	Psychoticism	Global Severity Index
<b>PID-5 domains</b>						
Negative affectivity	-	-	-	-	-	.63**
Detachment	.26***	-	-	-	-	.48**
Antagonism	.07	.23***	-	-	-	.22**
Disinhibition	.40***	.34***	.41***	-	-	.46**
Psychoticism	.53***	.43***	.40***	.60**	-	.64**

N= 554; \**p* < .05. \*\**p*<.01. \*\*\**p*<.001



**Table 2. Association between psychological distress and maladaptive personality traits.**

	Psychological Distress				
	$\beta$	$t$	$R^2$	$df$	$F$
			.59	6	130.43***
Negative Affectivity	.37	10.56***			
Detachment	.23	7.71***			
Antagonism	.02	.76			
Disinhibition	.03	.90			
Psychoticism	.31	7.93***			
Gender	.07	2.11*			

N= 554; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 3. Interaction effects ( $\beta$ ) of the severity of personality functioning as a moderator of the relationship between maladaptive personality traits and psychological distress.**

PID-5	SIPP-118				
	Identity integration	Self-control	Relational capacities	Social concordance	Responsibility
Negative					
Affectivity	-.11**	-.07**	-.08*	-.06	.03
Detachment	-.15***	-1.12***	-1.12**	-.12**	-.07
Antagonism	-.05	-.01	-.02	-.03	-.02
Disinhibition	-.08	-.03	-.02	-.04	-.01
Psychoticism	-.10***	-.06**	-.08**	-.05	-.02

N= 554; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

*Note:* SIPP-118: Severity Indices of Personality Problems; PID-5: Personality Inventory for DSM-5.

**Table 4. Level of severity of personality functioning as a moderator of the relationship between maladaptive personality traits and psychological distress.**

	$\beta$	SE	<i>t</i>	95% CI
<b>Identity integration</b>				
<i>Negative affectivity</i>	.21	.03	5.78***	[.14, .28]
Identity integration score	-.34	.04	-7.33***	[-.43, -.24]
Negative affectivity x identity Integration	-.11	.03	-2.91**	[-.17, -.03]
<i>Regression Model R<sup>2</sup></i>				.63***
<i>Conditional Effect on psychological distress:</i>				
Low Identity integration score: -.63	.28	.04	6.39***	[.19, .37]
Negative affectivity x Med identity Integration score: .00	.21	.03	5.78***	[.14, .28]
High Identity integration score: .63	.14	.04	3.37**	[.06, .23]
<b>Detachment</b>				
Identity integration score	-.32	.04	-6.91***	[-.41, -.23]
Detachment x Identity integration	-.15	.04	-3.55***	[.24, 2.77]
<i>Regression Model R<sup>2</sup></i>				.63***
<i>Conditional Effect on psychological distress:</i>				
Low Identity integration score: -.63	.13	.05	2.70**	[.03, .23]
Detachment x Med Identity integration score: .00	.03	.04	.74	[-.05, 1.12]
High Identity integration score: .63	-.06	.05	.21	[-.17, .04]
<b>Psychoticism</b>				
Identity integration score	-.32	.04	-6.84***	[-.41, -.22]
Psychoticism x Identity integration	-.10	.02	-3.61***	[-.15, -.04]
<i>Regression Model R<sup>2</sup></i>				.64***
<i>Conditional Effect on psychological distress:</i>				
Low Identity integration score: -.63	.27	.32	8.61***	[.21, .33]
Psychoticism x Med Identity integration score: .00	.21	.02	7.98***	[.15, .26]
High Identity integration score: .63	.14	.03	4.49***	[.08, .21]
<b>Self-control</b>				
<i>Negative affectivity</i>	.32	.04	8.43***	[.24, .39]
Self-control score	-.06	.03	-1.93	[-.12, .00]
Negative affectivity x Self-control	-.07	.03	-2.60**	[-1.13, -.01]
<i>Regression Model R<sup>2</sup></i>				.59***
<i>Conditional Effect on psychological distress:</i>				

	Low Self-control score: -.81	.38	.04	8.44***	[.29, .47]
Negative affectivity x Med Self-control score: .00		.32	.03	8.43***	[.24, .39]
	High Self-control score: .81	.26	.04	5.92***	[.17, .34]
<hr/>					
<i>Detachment</i>		.24	.03	7.03***	[.17, .31]
Self-control score		-.05	.03	-1.77	[-.12, .01]
Detachment x Self-control		-1.12	.03	-3.38***	[-.19, -.05]
<i>Regression Model R<sup>2</sup></i>				.60***	
<i>Conditional Effect on psychological distress:</i>					
	Low Self-control score: -.81	.35	.04	7.88***	[.26, .43]
Detachment x Med Self-control score: .00		.24	.03	7.03***	[.17, .31]
	High Self-control score: .81	.14	.05	2.94**	[.04, .23]
<hr/>					
<i>Psychoticism</i>		.21	.03	7.45***	[.15, .26]
Self-control score		-.06	.03	-1.76	[-.12, .00]
Psychoticism x Self-control		-.06	.02	-2.97**	[-.11, -.02]
<i>Regression Model R<sup>2</sup></i>				.60***	
<i>Conditional Effect on psychological distress:</i>					
	Low Self-control score: -.81	.26	.03	7.79***	[.19, .32]
Psychoticism x Med Self-control score: .00		.20	.03	7.45***	[.15, .26]
	High Self-control score: .81	.15	.03	4.62***	[.09, .22]
<hr/>					
<b>Relational capacities</b>					
<hr/>					
<i>Negative affectivity</i>		.35	.03	10.43***	[.28, .42]
Relational capacities score		-.06	.04	-1.65	[-.14, .01]
Negative affectivity x Relational capacities		-.08	.03	-2.12*	[-.15, -.00]
<i>Regression Model R<sup>2</sup></i>				.59***	
<i>Conditional Effect on psychological distress:</i>					
	Low Relational capacities score: -.69	.41	.04	9.70***	[.32, .49]
Negative affectivity x Med Relational capacities score: .00		.35	.03	10.43***	[.29, .42]
	High Relational capacities score: .69	.30	.04	6.90***	[.21, .38]
<hr/>					
<i>Detachment</i>		.16	.05	2.90**	[.06, .27]
Relational capacities score		-.06	.04	-1.64	[-.14, .01]
Detachment x Relational capacities		-1.12	.04	-3.04**	[-.20, -.04]
<i>Regression Model R<sup>2</sup></i>				.59***	
<i>Conditional Effect on psychological distress:</i>					
	Low Relational capacities score: -.69	.25	.05	4.37***	[.13, .36]
Detachment x Med Relational capacities score: .00		.16	.05	2.90**	[.05, .27]
	High Relational capacities score: .69	.07	.06	1.10	[-.05, .20]

<i>Psychoticism</i>	.21	.02	7.64***	[.15, .26]
Identity Relational capacities	-.07	.04	-1.67	[-.15, .01]
Psychoticism x Relational capacities	-.08	.02	-2.90**	[-.13, -.02]
<i>Regression Model R<sup>2</sup></i>			.59***	
<i>Conditional Effect on psychological distress:</i>				
Low Relational capacities score: -.69	.26	.03	8.10***	[.20, .33]
Psychoticism x Med Relational capacities score: .00	.21	.02	7.64***	[.15, .26]
High Relational capacities score: .69	.15	.03	4.58***	[.08, .22]
<b>Social concordance</b>				
<i>Detachment</i>	.24	.03	6.50***	[.17, .32]
Social concordance score	-.02	.03	-.65	[-.08, .04]
Detachment x Social concordance	-.12	.03	-2.80**	[-.20, -.03]
<i>Regression Model R<sup>2</sup></i>			.59***	
<i>Conditional Effect on psychological distress::</i>				
Low Social concordance score: -.71	.33	.04	7.16***	[.24, .42]
Detachment x Med Social concordance score: .00	.24	.03	6.50***	[.17, .32]
High Social concordance score: .71	.16	.05	3.15**	[.06, .26]

N= 562; \*\*\* p≤.001; \*\*p≤.01; \*p≤.05

Note SIPP-119=Severity Indices of Personality Problems; PID-5=Personality Inventory for DSM-5; SCL-90-R=Symptom Check List-90-Revised; CI=Confidence Interval.

## STUDY 2

# MALADAPTIVE PERSONALITY FUNCTIONING AND NON-SUICIDAL SELF INJURY IN ADOLESCENCE

### INTRODUCTION

Non-suicidal self-injury (NSSI) is defined as “*the direct, deliberate destruction of one’s own body tissue without suicidal intent*” (Nock, 2009, p. 9). NSSI includes behaviors such as intentional cutting or carving, scratching and burning of the skin, as well as behaviors such as hitting oneself or ingesting toxic substances (Klonsky, 2007).

Empirical literature has shown that adolescence is a crucial stage for the onset of NSSI (Meszaros et al., 2017; Muehlenkamp et al., 2012; Swannell et al., 2014). Moreover, NSSI is most common among teenagers (Brown & Plener, 2017), with lifetime prevalence rates from 15% to 20% in community samples of adolescents (Whitlock et al., 2006; Swannell et al., 2014) and from 50% to 60% in clinical samples (Kaess et al., 2013). Adolescents often report using different NSSI methods (Plener et al., 2009), with significant gender differences: burning behaviors are generally more common in males while cutting and scratching behaviors are more common in females. However, the occurrence and frequency of NSSI do not differ between male and female self-injurers (Heath et al., 2008; Sarno et al., 2010).

Empirical literature on NSSI has shown that self-injurious behaviors are associated with a variety of potential health problems. In particular, NSSI is often associated with several psychiatric symptoms and disorders such as anxiety and depressive symptoms, emotion regulation difficulties, eating disorders and substance abuse (Gratz 2003; Muehlenkamp et al., 2012; Zetterqvist et al., 2015). Moreover, NSSI seems to be a risk factor for suicide (Nock et al., 2006).

Many researchers provide evidence on the role of NSSI as an emotion regulation strategy that allows self-injurers to find relief from an emotional state perceived as intolerable (Di Pierro et al., 2014; Nielsen et al., 2017). Indeed, emotions

such as anxiety and anger usually pave the way to NSSI acts, and NSSI behaviors are often followed by a sense of relief in the short-term (Klonsky 2007). However, emotion regulation is not the only function of NSSI. In this regard, Klonsky (2007, 2009) deepened the functions of NSSI identifying the possible existence of both intrapersonal and interpersonal functions. Intrapersonal functions of NSSI refer to engage in self-injurious behaviors for affect-regulation, self-punishment, avoidance of suicidal impulses, reduction of dissociation and depersonalization experiences; whilst interpersonal functions of NSSI refer to engage in NSSI for interpersonal influence, withdrawal of demands and peer bonding. Similarly, Nock and Prinstein (2004; Nock, 2008) proposed a theoretical model of NSSI functions considering two dichotomous dimensions. According to their model, NSSI functions might be automatic (when motivations for NSSI concern altering inner states such as stopping feeling anxious) or social (when motivations for NSSI concern interaction with others such as getting attention from others). Moreover, NSSI might be reinforced in either a positive manner (i.e., involves the addition of a favorable stimulus) or a negative manner (i.e., involves the removal of an aversive stimulus).

Overall, both the Klonsky's and the Nock and Prinstein's models suggested that individuals might engage in NSSI both for intrapersonal (i.e., automatic) and interpersonal (i.e., social) reasons.

Recently, a growing body of research has investigated the association between NSSI and personality (Di Pierro et al., 2012; Nock et al., 2006), considering both adaptive and pathological personality traits. Several studies (Brown SA et al., 2009; MacLaren & Best 2010; Mullins-Sweat et al., 2013) examined the role of personality traits on NSSI according to the Big Five Model (Costa & McCrae 1992). Overall, such studies highlighted that self-injurers had significantly higher levels of Neuroticism and Openness to experience, but significantly lower levels of Agreeableness and Conscientiousness. As for the link between NSSI and maladaptive personality, for a long time empirical studies have focused mainly on the association between NSSI and Borderline personality disorder (BPD) (e.g. Brickman et al., 2014; Turner et al., 2015), even because NSSI is enlisted as a

symptom for BPD (APA 2013). After all, nowadays considering NSSI only as a criterion for BPD seems problematic. Although the strong association found between NSSI and BPD, empirical studies have shown that only a minority of people with NSSI meet criteria for BPD and, differently from BPD features, NSSI is not stable and often stops in adulthood (Glenn & Klonsky 2013; Muehlenkamp & Brausch 2016). Moreover, NSSI has shown to be also associated with pathological personality other than BPD, such as Avoidant PD (Cawood et al., 2011; Nock et al., 2006; Klonsky et al., 2003), Antisocial PD (Cawood et al., 2011), or Dependent PD (Cawood et al., 2011; Klonsky et al., 2003). Thus, many researchers have suggested considering NSSI as a separate clinical syndrome (e.g., Gratz et al., 2015; Muehlenkamp 2005; Shaffer and Jacobson 2009; Washburn et al., 2015) and the Nonsuicidal self-injury disorder (NSSID) has been included in section III of the DSM (APA, 2013) as a condition that requires further studies.

Although a large number of studies have investigated the association between NSSI and personality pathology, they have focused exclusively on categorical personality diagnoses according to DSM PDs (PD; APA, 2013). As recently suggested by Wilkinson and Goodyer (2011), it would be important for studying how personality pathology is related to NSSI considering a dimensional approach. Overall, a large body of research on personality pathology has underlined the importance of allowing for a dimensional approach, rather than a categorical one (e.g., Cloninger & Svrakic 2013; De Clerq et al., 2014; Waugh et al., 2017). Indeed, categorical diagnoses of PDs have shown relevant limitations over time (Madeddu & Di Pierro, 2014; Skodol, 2012): arbitrary cutoff points that define the presence versus absence of disorders, resulting in the poor validity of diagnoses, as well as problems of high co-occurrence and clinical heterogeneity. Contrarily, some authors (Skodol et al., 2011a) have suggested that a dimensional approach to personality pathology, which considers the severity of pathological functioning, would be more useful in both clinical settings and empirical research. In addition, adopting a dimensional approach is even more relevant when studying personality pathology and its correlates in adolescence. Indeed, maladaptive patterns of



personality traits generally start during adolescence (Lyons-Ruth et al., 2015), but controversies in diagnosing the presence of personality disorders, as conceptualized by the categorical approach, during this life stage still exist (Miller et al., 2008; Paris 2003; Westen et al. 2003).

The purpose of the current study is to examine the role of the severity of maladaptive personality functioning in adolescent NSSI. In particular, we investigate whether and which dimensions of maladaptive personality functioning are mainly associated with the presence of NSSI behaviors. More specifically, we study the association between NSSI and dimensions of maladaptive personality functioning related to impairments in identity (intrapersonal domain) and difficulties in interpersonal relationships. Indeed, dimensions related to self and interpersonal functioning are primarily involved in the development of adolescent personality (Ammaniti et al., 2012; APA 2013; Benzi & Madeddu, 2017; Kernberg P.F. 2000), and they are also core aspects in the definition of pathological personality, as reported in criterion A of the Alternative model for DSM-5 PDs (APA 2013).

Given the lack of previous studies on the association between NSSI and maladaptive personality functioning from a dimensional perspective in adolescents, no detailed hypotheses can be supposed. Overall, we expect to find that adolescents with lifetime NSSI would report higher severity of maladaptive personality functioning than adolescents without lifetime NSSI. Moreover, given the predominance of intrapersonal functions, compared to interpersonal ones, reported by self-injurers in their NSSI experience (Klonsky et al., 2009; Nock & Prinstein 2005), we expect to find that lifetime NSSI would be mainly associated with dimensions of maladaptive personality that are related to self-(intrapersonal) functioning rather than interpersonal functioning.

## METHODS

### PARTICIPANTS

The study involved 247 participants, including 170 females (68.8 %) and 77 males (31.2 %) with an overall mean age of 15.57 (SD = 2.24; range= 12 - 21). Participants were recruited from middle and secondary schools in Northern Italy.

Assessment was performed after receiving authorization from both parents of underage students and from older students themselves. To ensure anonymity, students were given a unique reference code, and self-report questionnaires were completed in small groups of up to four students, with a research assistant always present to provide clarification when necessary. All materials and procedures were approved by the Ethical Committee of the University of Milano-Bicocca.

### MEASURES

*The Inventory of Statements About Self-Injury* (ISAS; Klonsky & Glenn 2009) is a self-report measure that assesses the frequency and functions of nonsuicidal self-injury (NSSI). The ISAS includes two sections. The first section assesses the lifetime frequency of 12 different NSSI behaviors: biting, burning, carving, cutting, hitting/banging body parts, wound picking, sticking self with needles, pinching, hair pulling, rubbing skin against rough surfaces, severe scratching, and swallowing dangerous substances. The second section of the ISAS assesses 13 specific functions that are commonly related to NSSI (e.g., Affect Regulation, Self-Punishment, Sensation Seeking).

For the purposes of this study, and in line with the majority of studies on NSSI, we focused analyses on the lifetime presence and frequency of NSSI behaviors not considering their functions (e.g., Di Pierro et al., 2012; Thomassin et al., 2017).

*The Severity Indices of Personality Problems* - 118 (Verheul et al., 2008, SIPP-118) is a measure of the severity of maladaptive personality functioning. In particular, the SIPP-118 measures 5 domains of personality functioning. The Social Concordance domain ( $\alpha = .85$ ) refers to the ability to value someone's identity,

withhold aggressive impulses towards others and to work together with others, and it includes facets like aggression regulation, respect, and cooperation. The Self-control domain ( $\alpha = .91$ ) refers to the capacity to tolerate, use, and control emotions and impulses. Such domain includes facets like emotion regulation, effortful control, stable self-image and self-reflexive function. The Identity Integration domain ( $\alpha = .88$ ) refers to coherence of identity and the capacity to see oneself and one's own life as stable, integrated, and purposive. Such domain includes facets like frustration tolerance, self-respect, purposefulness, and enjoyment. The Relational capacities domain ( $\alpha = .83$ ) refers to the capacity to genuinely care about others as well as feeling cared about them, to be able to communicate personal experiences, and to hear and engage with the experiences of others often but not necessarily in the context of a long-term, intimate relationship. The Relational capacities domain includes facets measuring feeling of recognition, capacity for intimacy, and presence of enduring relationships. Finally, the Responsibility domain ( $\alpha = .84$ ) refers to the ability to set realistic goals and to achieve these goals in line with the expectations you have generated in others. Such domain includes facets of responsible industry and trustworthiness. High scores in the personality domains indicate better adaptive functioning, whereas lower scores represent more maladaptive personality functioning.

#### STATISTICAL ANALYSES

All analyses were performed using SPSS 21.0 (IBM 2012). Descriptive statistics were conducted to describe the sociodemographic characteristics of participants. Chi-Square test models were conducted in order to investigate gender differences in the lifetime presence and methods of NSSI.

A series of one-way ANOVA analyses were run for each of the five domains of the SIPP-118 to test whether and which domains significantly differed between lifetime self-injurers and non-self-injurers. Then, we conducted Multivariate Analysis of Variance (MANOVA) models to test which facets of each SIPP-118 domain differed between lifetime self-injurers and non-self-injurers. MANOVA

models were chosen in order to control for increased Type I error because of multiple tests of correlated dependent variables (Tabachnick & Fidell 2007).

## RESULTS

### DESCRIPTIVE CHARACTERISTICS OF NSSI

The 44.9% of participants (N= 111) engaged in NSSI lifetime, with no gender differences (females = 76, males = 35,  $\chi^2(1) = .01$ ,  $p < .05$ ). The 25.2% of self-injurers engaged in just one NSSI method (N= 28), while the majority of self-injurers used more NSSI methods (N= 83; 74.8%). No gender differences were found on number of NSSI methods ( $F(1,109) = 3.40$ ,  $p = .07$ ). As reported in Table 1, the most frequently endorsed methods were wound interference and pinching, and no gender differences were found with regard to NSSI methods except for cutting and curving behaviors. As showed, both cutting behaviors (females = 19, males = 2,  $\chi^2(1) = 4.62$ ,  $p < .05$ ) and curving behaviors (females = 14, males = 0,  $\chi^2(1) = 5.80$ ,  $p < .05$ ) were more common in females than in males.

### PERSONALITY FUNCTIONING AND THE LIFETIME PRESENCE OF NSSI

ANOVA's results were reported in Table 2.

Results showed that all the SIPP's domains significantly differed between the NSSI group and the no NSSI group, except for the Relation domain. Lifetime self-injurers reported lower scores in Social Concordance, Self-control, Identity Integration and Responsibility than participants with no lifetime NSSI. On the contrary, no significant differences were found in the Relation domain between participants with and without lifetime NSSI.

More specific differentiation can be found at the facet level. Table 3 provides the mean scores on the SIPP facets for the NSSI group and the no NSSI group as well as the results of the MANOVA

analyses. Results showed that lifetime self-injurers reported fewer capabilities in regulating aggression (Social Concordance domain) than non-self-injurers. Moreover, lifetime self-injurers reported significantly lower scores in all

four facets of the Self-control domain. Again, lifetime self-injurers had significantly lower levels of self-respect, purposefulness and enjoyment (Identity Integration domain), responsible industry and trustworthiness (Responsibility domain) than non-self-injurers. Finally, results showed that lifetime self-injurers reported lower levels in feeling recognized by others (Relation domain) than people without a history of NSSI.

## DISCUSSION

Adolescence is a critical developmental period for understanding the relationship between NSSI and maladaptive personality functioning.

In line with previous studies (Klonsky & Muehlenkamp 2007; Nock et al., 2006), we found no gender differences in the presence and frequency of NSSI, while gender differences were found in some NSSI methods such as cutting behaviors which are more common in females than in males (Klonsky & Muehlenkamp 2007). Moreover, prevalence rates of lifetime NSSI in our sample is in supported by previous literature, stating that rates of self-injurious behaviors among high school students are high (Muehlenkamp et al., 2009).

The role of the severity of maladaptive personality functioning in the presence of NSSI arises up in recent studies among young adults (Muehlenkamp et al., 2011; Mullins-Sweatt et al., 2013). In line with such studies, our findings suggest that maladaptive personality functioning is strongly associated with the presence of NSSI among adolescents.

One explanation of our results might come from empirical literature on functions of NSSI. Many authors (Muehlenkamp et al., 2013; Nock & Prinstein 2004; Tatnell, 2014; Turner ,2012) have underlined the importance of considering functions of NSSI in order to deeply understand the phenomenon. The majority of studies showed that self-injurers reported intrapersonal functions of NSSI as more relevant in their experience than interpersonal ones (Klonsky et al., 2009; Nock & Prinstein 2005). Moreover, the DSM-5 AMPD (APA, 2013) suggests that personality

pathology features can be grouped in intrapersonal (e.g., Self) and interpersonal functioning dimensions.

Aspects of maladaptive personality functioning such as impairments in identity integration, self-control, responsibility and aggression regulation are core characteristics of the intrapersonal dimension; whilst aspects reflecting the capacity for empathy and for mature, mutually rewarding intimacy with others refer to the interpersonal functioning dimension. In this sense, our findings suggest that dimensions of maladaptive personality functioning involved in the lifetime presence of NSSI among adolescents are intrapersonal in nature. On the contrary, dimensions of maladaptive personality functioning which are interpersonal in nature, such as those related to difficulties in relational capabilities and social concordance, show to be less strongly linked to the lifetime presence of NSSI during adolescence.

Our findings support an exploratory qualitative study by Breen and colleagues (2013) showing that Self and Identity processes can particularly contribute to a vulnerability to NSSI. More specifically, NSSI can provide a source of self-identification to favor self-identity development and to find a community of other people to identify with (Muehlenkamp et al., 2013; Nock et al., 2004, 2005, 2008, 2014; Tatnell et al., 2014). Moreover, NSSI shows to be useful in order to handle negative emotions and to provide a basic sense of self-coherence that persists in time (Lear & Pepper 2016; Nielsen et al., 2017; Zetterqvist et al., 2015).

In addition, our explanatory hypothesis seems to be supported by results at a facet level. In line with previous studies (e.g., Lear & Pepper 2016; McLean et al., 2010; Turner et al., 2012), our results show that facets related to intrapersonal functioning are impaired in self-injurers. More specifically, facets of Self-control, such as Emotion regulation and Effortful control, as the capacity to tolerate, use, and control emotions and impulses, as well as Aggression Regulation (which pertains to the Social Concordance dimension), allow us to discriminate between lifetime self-injurers and non-self-injurers. Moreover, lifetime self-injurers showed significant impairments in all the facets of the Identity Integration such as Self-

respect, Purposefulness, and Enjoyment. Also, facets of Responsibility such as Responsible industry and Trustworthiness are crucial in distinguishing between self-injurers and nonself-injurers, as they have proven to be aspects of the wider construct of Identity (Lenzenweger & Clarkin 2005; Kernberg, O.F. 2006; Preti et al., 2015). In line with previous observations on the importance of intrapersonal functions of NSSI, the only facet of the relational capacity domain characterizing adolescent self-injurers is not feeling recognized. Such result is not surprising. Indeed, it is plausible to hypothesize that adolescents who usually do not feel to be recognized by others might experience loneliness and exclusion, and in turn, they might engage in NSSI in order to regulate such negative emotions.

The results of the current study can be better understood in the context of the study's limitations.

Our sample size does not allow for testing the influence of age on the relationship between maladaptive personality functioning and NSSI. In fact, it could be that the relationship between NSSI and maladaptive personality functioning changes at different age ranges. In a sense, it is plausible to hypothesize that the strength of associations between maladaptive personality functioning and NSSI would be higher in late adolescence than in early adolescence. Although maladaptive personality dimensions can arise up during early adolescence, they usually become stable patterns of pathological personality functioning during late adolescence (Klimstra et al., 2009). Finally, only self-report measures are used in the present study. It would be interesting to investigate dimensions of maladaptive personality functioning both using explicit and indirect methods of assessment in order to deepen the relationship between lifetime NSSI and personality functioning. Indeed, self-report measures can be highly influenced by social desirability bias, as participants can answer in a way to portray themselves in a good light, minimizing his intrapersonal and interpersonal difficulties.

In conclusion, results of the present study highlight the importance of considering a dimensional approach that considers the severity of personality functioning in order to deeper understand the association between maladaptive

personality and NSSI. In particular, our findings suggest that intrapersonal aspects of maladaptive personality functioning, rather than interpersonal ones, have a key role in the presence of NSSI during adolescence. Indeed, self-injurers in our sample do not seem to be socially deficient, but they show fragility of the self which is reflected in difficulties in regulating their internal emotional states (and aggression towards others), in having a clear and coherent self-image, as well as difficulties in self-directedness.

In this sense, our results might have relevant clinical implications. Indeed, the study suggests that clinical interventions with adolescent self-injurers should be focused on treating personality features linked to self-fragility, rather than be focused on modifying directly the behavior (e.g., skills to control the behavior). Helping adolescents to develop a more stable self-view, as well as to find more adaptive ways to tolerate and modulate inner states and impulses such as aggression and negative emotions, might decrease their need to engage in NSSI.



## TABLES

**Table 1. NSSI methods: endorsement rates among self-injurers and gender differences.**

NSSI methods	N	%	$\chi^2$
Cutting	21	18.9	4.62*
Severe Scratching	21	18.9	2.65
Biting	50	45.0	.86
Banging	40	36.0	.00
Burning	9	8.1	1.00
Interfere with wound healing	86	77.5	.00
Carving	14	12.6	5.80*
Rubbing skin	37	33.3	.00
Pinching	46	41.4	2.76
Sticking self with needles	16	14.4	.00
Pulling hair	34	30.6	.00
Swallowing dangerous substances	7	6.3	.00

N= 111; df  $\chi^2 = 1$ ; \* p < .05.

**Table 2. Personality Functioning domains: differences between self-injurers and non-self-injurers.**

	No NSSI group (N= 136)		NSSI group (N= 111)		F (1, 245)	$\eta^2$
	M	SD	M	SD		
Social Concordance	5.86	.06	5.67	.07	3.93*	.02
Self-control	5.33	.07	4.92	.08	15.17***	.06
Identity Integration	4.59	.05	4.33	.06	10.57**	.04
Relation	4.66	.06	4.52	.06	2.50	.01
Responsibility	4.71	.06	4.35	.07	14.99***	.06

\*p < .05, \*\*p < .01, \*\*\*p < .001

**Table 3. Facets of Personality Functioning: differences between self-injurers and non-self-injurers.**

	No NSSI group (N= 136)		NSSI group (N= 111)		F (1, 245)	$\eta^2$
	M	SD	M	SD		
<i>Social Concordance<sup>a</sup></i>						
Respect	3.11	.46	3.07	.47	.62	.00
Aggression regulation	3.54	.54	3.29	.65	11.26**	.04
Cooperation	3.19	.46	3.07	.56	3.22	.01
<i>Self-control<sup>b</sup></i>						
Effortful control	2.80	.04	2.54	.05	14.40***	.06
Emotion regulation	3.06	.05	2.81	.05	11.79**	.05
Stable self-image	3.05	.05	2.85	.06	6.36**	.02
Self-reflexive functioning	2.93	.05	2.74	.05	7.46**	.03
<i>Identity Integration<sup>c</sup></i>						
Frustration tolerance	2.80	.04	2.69	.05	2.89	.01
Self-respect	3.22	.04	3.04	.05	7.74**	.03
Purposefulness	3.17	.04	2.97	.05	10.51**	.04
Enjoyment	3.20	.05	3.04	.05	4.57*	.02
<i>Relation<sup>d</sup></i>						
Feeling recognized	2.89	.04	2.74	.05	4.91*	.02
Intimacy	2.84	.05	2.73	.05	2.22	.01
Enduring relationships	3.21	.04	3.15	.05	.76	.00
<i>Responsibility<sup>e</sup></i>						
Responsible industry	2.99	.05	2.75	.05	10.92**	.04
Trustworthiness	3.18	.04	2.96	.05	13.43***	.05

<sup>a</sup> F (3, 243) = 3.98, Wilk's  $\Lambda$  = .95, p < .05; <sup>b</sup> F (4, 242) = 4.16, Wilk's  $\Lambda$  = .94, p < .05; <sup>c</sup> F (4, 242) = 3.04, Wilk's  $\Lambda$  = .95, p < .05; <sup>d</sup> F (3, 243) = 1.84, Wilk's  $\Lambda$  = .98, p = .14; <sup>e</sup> F (2, 244) = 7.28, Wilk's  $\Lambda$  = .94, p < .05.

\* p < .05, \*\* p < .01, \*\*\* p < .001.

## CHAPTER 4

# ASSESSING PERSONALITY FUNCTIONING<sup>6</sup>

*The following chapter shifts the focus from the more theoretical debate to another fundamental topic that deals with the measurement and evaluation of severity of personality functioning in adolescence. The following studies present data on the construction of a self-report measure designed directly for adolescents, the Adolescent Personality Structure Questionnaire (APS-Q), based on the existing semi-structured interview, the Interview of Personality Processes in Adolescence (IPOP-A; Ammaniti et al., 2012). Finally, the studies discuss the associations of personality functioning with maladaptive traits as well as with borderline and narcissistic features.*

### STUDY 3

## DEVELOPMENT OF THE ADOLESCENT PERSONALITY STRUCTURE QUESTIONNAIRE (APS-Q)

### INTRODUCTION

As stated in Chapter 1, assessing the fundamental features of personality structure in adolescence is crucial in order to highlight prodromes of personality pathology as well as sub-threshold maladaptive personality features.

The major shortcoming of the self-report instruments presented (see Chapter 1, Table 1) is that they result from the adaptation of the adult version of the same instruments, which might be a limitation when it comes to capturing the peculiarities of adolescence. This aspect is significant not only regarding vocabulary but also in highlighting core components of maladaptive personality functioning

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<sup>6</sup> This chapter is partially based on **Benzi**, Preti, Di Pierro, Fontana, Perugini, Madeddu & Clarkin. Assessing personality functioning in adolescence: development of the Adolescent Personality Structure Questionnaire. The manuscript is currently under review in *Assessment*.

which are specific to this developmental phase. Furthermore, measures related to personality traits fail to capture the core impairment of personality functioning regarding self (identity) and interpersonal aspects which research has underlined as crucial in conceptualizing personality pathology (Bender et al., 2011; Sharp & Wall, 2017). Also, as adolescents are often averse to prolonged psychological assessments, the length of the instrument ought to be considered a weakness as well.

According to the object relations theoretical framework, we aim at developing an agile but reliable and valid measure that can be included in larger batteries for studies to measure pathological personality functioning in adolescence. Indeed, there is a lack of self-report instruments to assess pathological personality functioning in adolescence and shaped according to the core aspects of maladaptive personality. Hence, we aim at choosing a set of items into a range from 30 to 50, if warranted by the principal component analysis (PCA; Laher, 2010), from the initial item set. Also, we aim for it to acknowledge features related to self (identity) and interpersonal (object relations) dimensions and affect regulation.

Thus, we created a self-report measure, the Adolescent Personality Structure Questionnaire (APS-Q), based on the Interview of Personality Organization Processes in Adolescence (IPOP-A; Ammaniti et al., 2012). The IPOP-A is a semi-structured interview based on the object relations approach to personality pathology (Kernberg, P.F. et al., 2000). The IPOP-A measures some critical dimensions of pathological functioning in adolescence and young adulthood (from 13 to 21 years): Identity formation, Quality of object relations, and Affect regulation. The identity dimension differentiates between normal identity crisis and identity diffusion, as it explores the consolidation of the boundaries of the self and the ability to integrate developmental changes into a sophisticated experience and representation of the self. Indicators of integrated identity are the adolescents' abilities in tolerating and understanding other's point of view, as well as their engagement in activities and goals related to school, work, and recreational ones (Kernberg, O.F., 2006). The quality of object relations refers to both relations with

the family members and with others (peers and romantic partners). Among the indicators of the quality of object relations are the presence of authentic, long-lasting and intimate relationships, the degree of interdependence and reciprocity in loving relationships, and the involvement in sexual experimentation. The primary developmental task assessed in this dimension is the process of separation-individuation, meaning the emancipation from infantile inner representations (Blos, 1967). Finally, the affect regulation dimension investigates the capacity of adolescents to be aware of, to experience, and to modulate affects (e.g., rage, shame, guilt, joy, sexual excitement).

This contribution presents preliminary data on the development of the APS-Q. First, we developed a pilot set of items and checked for their clarity and comprehensibility. Then, we explored the factor structure of the APS-Q considering criteria of coherency and internal validity of its dimensions, as well as stability across different subsample (factor congruence). Also, we tested the APS-Q stability over a short period of time (test-retest validity). Finally, we investigated the construct validity of the APS-Q. We hypothesized the APS-Q scales to be significantly related with other measures of severity of personality pathology, maladaptive personality traits, and psychological distress (convergent validity) as well as provide unique information (discriminant validity). Also, we hypothesized the APS-Q scales to be able to highlight significant differences in personality functioning related to gender. Moreover, we assumed the APS-Q capable of capturing fluctuations in the level of impairment in personality functioning related to age differences.

## METHODS

### PARTICIPANTS

The study involved 848 participants, including 543 females (64.03 %) and 305 males (35.96 %) with an overall mean age of 16.37 ( $SD = 1.77$ ; range = 13-19) that completed the set of items of the APS-Q. Participants were recruited from middle

and secondary schools in Northern Italy. The assessment was performed after receiving authorization from both parents of underage students and older students themselves. To ensure their anonymity, students received a unique reference code and completed self-report questionnaires via a private web link. The Institutional Review Board approved all materials and procedures.

A subsample of 562 participants including 351 females (62.45 %) and 211 males (37.54 %) with an overall mean age of 16.24 ( $SD = 1.69$ ; range = 13–19) also completed measures of personality functioning, maladaptive personality traits, and psychological distress to investigate convergent and discriminant validity. Of this subsample, 451 participants, including 276 females (61.19 %) and 175 males (38.80 %) with an overall mean age of 16.15 ( $SD = 1.68$ ; range = 13–19), recompiled the APS-Q set of items after one month to assess test-retest reliability.

## MEASURES

### *Development of the Adolescent Personality Structure Questionnaire (APS-Q) set of items*

To identify the core aspects of adolescent personality functioning, we followed the structure of the IPOP-A interview (Ammaniti et al., 2012). The pool of 176 items was composed in Italian, evaluated, and discussed by a consensus group of five experts with a clinical and research background of at least ten years on the structural model of personality pathology (Kernberg, O.F. 2016) and personality disorders. According to the IPOP-A interview, items of the APS-Q covered the three main areas of identity, quality of object relations, and affect regulation.

Considering identity, we included the following areas of inquiry: self-description features, mentalizing capacities, self-esteem, acceptance of body development, coherence in time of self-image. Also, we added items related to the presence and stability of investments (efficiency, objectives and ambitions, satisfaction) and the presence of risky behaviors. To investigate object relations, we included items related to the representation of significant others outside and within the family (i.e., characteristics, mentalizing capacities, stability, romantic

investment, sexuality, fights and discussions, and secrets). Regarding affect regulation, we considered the presence of anger and attacks toward the self and others, the presence of guilt and shame, as well as feelings of anxiety and boredom.

As a first step, the pool of 176 items was administered to a group of teenagers (n = 10) to evaluate their clarity and intelligibility qualitatively. We eliminated items that teenagers assessed as not easily understandable (e.g., “Even if we do not tell each other, I always know what my role is in the group of friends”), too general (e.g. “Outside of my family, the people I look up to are only the best”), or addressing more than one aspect (e.g., “If I would make a fool out of myself with my friends because of a lie that I told, I think I would die from shame”). Also, to facilitate the adolescent on focusing on his most significant person inside and outside the family, we discarded items that were specifically referred to mother/father (e.g. “I feel that my mother/father would be ready to support me if I needed to”). With the same purpose, we discarded items referring in a too general way to friends (e.g., “My friends know that if they disappoint me, they will lose my friendship forever”). Rather, the questionnaire asked the adolescent to think of a significant other within or outside the family (“With whom of your family members do you have the strongest relationship?” and “Who is the most important person for you outside of your family?”) before rating the items related to the specific dimensions (i.e., Relationship with family and Relationship with friends).

Following the procedure described above, we identified the final set of 112 items of the APS-Q that was administered to the whole sample of the study. For each item, the questionnaire asked participants to rate their level of agreement on a 5-point scale (1 = *Never true* to 5 = *Always true*).

### *Severity Indices of Personality Problems – 118*

*(SIPP-118; Verheul et al., 2008)*

The SIPP-118 is a dimensional measure of 5 core components of (mal)adaptive personality functioning (Self-control, Identity integration, Relational capacities, Responsibility and Social concordance). The self-report questionnaire



consists of 118 items related to the last three months and measured on a 4-point Likert scale (1= *I fully agree* to 4= *I fully disagree*). High scores indicate better adaptive functioning, whereas low scores represent more maladaptive personality functioning. Reliability and validity of adolescents' samples have proven to be satisfactory (Feenstra et al., 2011). All the scales showed good internal consistency coefficients, with  $\alpha$  values ranging from .86 (Responsibility) to .91 (Self-control).

*Personality Inventory for DSM-5*  
(PID-5; Krueger et al., 2012; APA, 2013)

The PID-5 is a 220-item questionnaire that measures maladaptive personality traits as proposed in the AMPD of DSM-5. Responses are rated on a 4-point Likert scale (0 = *very false or often false* to 3 = *very true or often true*). The higher the scores, the higher the severity of pathological traits. The PID-5 measures five higher order traits domains: Internalizing traits (Negative affectivity and Detachment), externalizing traits (Antagonism and Disinhibition), and Psychoticism. The DSM-5 provides both an adult and child (11-17) version of the questionnaire (Somma et al., 2017). The five trait domains showed good internal consistency coefficients, with  $\alpha$  values ranging from .89 (Disinhibition) to .94 (Psychoticism).

*Symptom Check List-90-Revised*  
(SCL-90-R; Derogatis, 1994)

The SCL-90-R is a self-report measure that assesses psychological and physical symptoms during the last week on a 5-point scale, ranging from "no symptoms" to "many symptoms." The psychometric properties of the questionnaire have been investigated in several studies and resulted satisfactory both in clinical and control populations (Prunas, Sarno, Preti, Madeddu & Perugini, 2012). For the present study, we used the Global Severity Index (GSI), corresponding to the average score of all the items, as a measure of psychological distress. The GSI scale showed a good internal consistency ( $\alpha = .97$ ).

## STATISTICAL ANALYSES

Statistical analyses were conducted using R code (R Core Team, 2017). Using the R package *psych*, we performed parallel analysis (PA; O'Connor, 2000) to determine the most appropriate number of factors to retain. PA simulates random datasets with the same numbers of observations and variables as the original one. Then, it uses the random datasets to compute eigenvalues from its correlation matrix. The maximum number of factors to retain is obtained confronting these eigenvalues with those from the original data (the initial data values must be higher than the PA values). Considering PA results, we conducted principal component analysis (PCA; Laher, 2010) (available in the R package *psych*) evaluating several factor structures. Moreover, we performed PCA on different sub-samples to assess the factor solution and to compute Tucker-Phi for factor loadings congruence (Lorenzo-Seva & Ten Berge, 2006) (available in the R package *psych*). We considered Phi values higher than .85 as displaying fair similarity and higher than .95 as displaying equivalence between the compared factors. We investigated internal consistency (R package *DescTools*) and explored concurrent and discriminant validity, as well as test-retest reliability, computing Pearson correlations (available in the R package *stats*). Finally, after data were tested for normality and homogeneity of variance, we ran analyses (R packages *stats* and *DescTools*) to investigate score differences between males and females (Welch Two Sample t-test and Mann-Whitney test) and between age ranges (one-way MANOVA and Kruskal-Wallis test).

## RESULTS

### SELECTION OF FACTOR SOLUTION

Before running the principal components analysis (PCA) we tested the Kaiser-Meyer-Olkin coefficient to verify the sampling adequacy for the analysis  $KMO = .86$ , which is well above the acceptable limit of .5 (Dziuban & Shirkey, 1974). Bartlett's test of sphericity indicated that correlations between items were

sufficiently large for running a PCA ( $\chi^2(6216) = 26145.127, p < .001$ ). PA suggested a maximum of 14 components (Table 1) whereas the scree test allowed us to identify three main jumps in the eigenvalues (between the 4<sup>th</sup> and the 5<sup>th</sup>, the 6<sup>th</sup> and the 7<sup>th</sup>, and the 7<sup>th</sup> and the 8<sup>th</sup>) corresponding to a four, six, and seven-factor solutions.

We conducted PCA on the 112 items with oblique rotation (Promax). We chose an oblique rotation given the presence of correlations  $> .30$  among the factors in most solutions. Then, we discarded items according to their loadings ( $< .30$ ) and considered loadings  $> .30$  on different factors.

To individuate the best factor solution, we adopted a two-step approach. First, as the PA suggested, we evaluated the 14 components solution. We discarded it because of the insufficient number of items ( $< 3$ ) per component and the unclear interpretability of some of the factors. Second, we focused on the solutions suggested from the scree-test sequentially. Thus, we evaluated the 4, 6, and 7 components solutions. We discarded the first two because they excluded dimensions that we aimed to measure (e.g., the 4 components solution excluded items associated with the stability of investments and to relationships with friends; the 6 components solution excluded items related to the stability of investments). Finally, we evaluated a 7 components structure, which resulted more coherent from a statistical point of view, displaying a sufficient number of items per component. Also, the 7 components solution resulted more interpretable from a theoretical point of view. Such solution identified aspects related to self-description features and mentalizing capacities, acceptance of body development, being at ease with sexual impulses, representation of the significant other outside the family, representation of the other within the family, anger and attack toward the self and others, and satisfaction about and stability of investments.

#### FACTOR STRUCTURE AND INTERNAL CONSISTENCY

To obtain an agile and coherent measure based on the 7 components structure, we adopted a multi-step approach. First, discarding items with low loadings ( $< .30$ ), we reduced the initial set of 112 to 86 items. Second, we discarded

items with large secondary loadings ( $< .30$  on more than one factor), resulting in a set of 77 items. After this first round, we re-run a PCA on the remaining items with 7 components for the second round of selection aimed at identifying a final set of 30 to 50 items. After having verified that the 7-component solution was still overall adequate, we first eliminated 12 items that were less clear markers of the construct (e.g., “When I perceive a negative emotion, I behave in a way that I cannot explain to myself” under the Self dimension). Then, we discarded 14 items that were redundant (e.g., we maintained “If I think about it, every day I am like a different person” and deleted “Even if I’ve changed, I’m always the same person”). Finally, we reduced further by eliminating 12 items displaying low loadings ( $< .30$ ) or secondary loadings ( $< .30$  on more than one factor). All in all, we aimed at keeping items with high loadings ( $> .50$ ). However, we decided to keep two items with slightly lower loadings as they were considered theoretically relevant (i.e. “Nobody, other than my family, is really important to me, not even ...” = .39; “I think I’m a different person when I’m at home when compared to when I’m at school or at work” = .44). The final version of the APS-Q thus consists of 39 items.

The factors that resulted after rotation (Table 2) were interpreted as follows. Self-acceptance (Factor 1) is composed of 5 items that encompass acceptance of physical development and presence of shame. Sense of Self (Factor 2) includes 8 items on description and stability of the self-image and ability to mentalize internal states and behaviors. Aggression (Factor 3) comprises 6 items on the tendency to acting-out (toward self or others) or to lose control when emotions are overwhelming. Relationship with Family (Factor 4) includes 5 items on the quality of the relations inside the familiar context. Sexuality (Factor 5) has 4 items exploring how/whether adolescents are comfortable with their sexual desires/impulses. Relationship with Friends (Factor 6) is composed of 5 items on the quality of the relations with the most significant friend. Finally, Investments and goals (Factor 7) includes 5 items on presence and stability of goals and investments in school or work.

Inter-correlations between factors are reported in Table 3. Inter-correlations between factors were low ( $r < .30$ ). Only the Self dimension was associated ( $r > .30$ ) with the Self-acceptance, Aggression, and Relationship with Family dimensions.

Cronbach's Alpha values for internal consistency and average inter-item correlations for the seven dimensions are reported in Table 4. Overall, all the APS-Q dimensions showed acceptable internal consistency.

#### STABILITY OF THE FACTOR SOLUTION

In order to test the stability of the factor solution obtained, we tested it in two random subsamples (about 50% of the overall sample each): R1 ( $n=422$ ), including 271 females (64.21 %) and 151 males (35.78 %) with an overall mean age of 16.40 ( $SD = 1.76$ ; range= 13 - 19) and R2 ( $n=426$ ), including 272 females (63.84 %) and 154 males (36.15 %) with an overall mean age of 16.34 ( $SD = 1.77$ ; range= 13 - 19). Results showed that the same factor structure was replicated in both subsamples, proving that the factor structure solution was stable over different combinations of participants. We tested Tucker Phi coefficients for factor congruence. Values for all dimensions started from .94, therefore displaying a substantial equivalence between factors (Table 5).

Additionally, we tested the stability of the factor structure in a subsample 451 participants, including 276 females (61, 19%) and 175 males (38, 8%) with an overall mean age of 16.15 ( $SD = 1.68$ ; range = 13-19) that filled in the questionnaire again after 1 month. Still, the factorial structure was confirmed with values for all dimensions ranging from .94 to .97, therefore displaying a substantial equivalence between factors.

#### TEST-RETEST RELIABILITY

Test-retest reliability was explored over a 1-month period in the subsample of 461 participants previously described. We found high correlations for every dimension of the APS-Q (ranging from .72 to .87), showing substantial reliability over this period of time (Table 6).

## CONVERGENT AND DISCRIMINANT VALIDITY

As our questionnaire aims to measure pathological personality functioning, we tested the associations between the APS-Q dimensions and the SIPP-118 domains to explore convergent validity (Table 7). The APS-Q dimension of Sense of Self showed strong correlations with the correspondent SIPP-118 domains of Self-control (which refers to the capacity to tolerate, use, and control emotions and impulses) and Identity integration (which is related to coherence of identity and the ability to see oneself and one's own life as stable, integrated and purposive). Similarly, the APS-Q Self-acceptance dimension showed a strong association with the SIPP-118 Identity integration domain and a moderate association with the SIPP-118 Self-control domain. As expected, the APS-Q Sexuality dimension, which explores aspects that are not included in the SIPP-118, showed a weakly significant relationship with the primary domains of the SIPP-118. The APS-Q Investments and goals dimension was significantly associated with the SIPP-118 domains of Identity integration and Responsibility (that refers to the ability to set realistic goals and to achieve these goals in line with the expectations you have generated in others). The APS-Q Aggression dimension was strongly related to the SIPP-118 Self-control and Social concordance domains (the latter, including the ability to value someone's identity, withhold aggressive impulsive towards others and to work together with others, and including aspects such as aggression regulation, respect, and cooperation).

Both the APS-Q dimensions investigating quality of relations (Relationship with Friends and Relationship with Family) were associated with the SIPP-118 Relational capacities domain (which refers to the capacity to genuinely care about others as well as feeling cared about them, to be able to communicate personal experiences, and to hear and engage with the experiences of others often but not necessarily in the context of a long-term, intimate relationship).

To explore the relationship with DSM-5 maladaptive personality traits, we tested the associations between the APS-Q dimensions and the PID-5 traits (Table 8). As expected, we found significant associations between personality functioning

and DSM-5 maladaptive traits. Significant correlations were found between the APS-Q Sense of Self dimension and internalizing traits (Negative affectivity and Detachment), as also with Disinhibition and Psychoticism. Also, Self-acceptance was significantly related to internalizing traits. Furthermore, correlations between Aggression and externalizing traits (Antagonism and Disinhibition) were found. Finally, both APS-Q dimensions associated with the quality of relationships (Relationship with Friends and Relationship with Family) were associated with Detachment.

Finally, as the APS-Q dimensions aim to assess maladaptive personality functioning, we explored their associations with psychological distress (GSI). Positive correlations were found between the APS-Q self-related dimensions and the GSI (Sense of Self,  $r = .55$ ,  $p < .001$  and Self-acceptance,  $r = .50$ ,  $p < .001$ ), as well as between the tendency to acting-out aggressive impulses and the GSI ( $r = .31$ ,  $p < .001$ ).

#### DIFFERENCES RELATED TO GENDER AND AGE

We tested the APS-Q scales for normality (skewness, kurtosis, and Shapiro-Wilk tests) obtaining non-significant values for all dimensions, except the Aggression dimension. Thus, we calculated both parametric and non-parametric tests for this dimension.

As expected, Welch t-test indicated significant gender differences for the APS-Q dimensions, with the Aggression dimension that presented equivalent results for both parametric and non-parametric (Mann-Whitney test) analyses (Table 9). On the one hand, females exhibited significantly higher scores in the dimensions of Sense of Self, Self-acceptance, and Sexuality than males. In other words, females showed a higher impairment in these dimensions as compared to males. On the other hand, males displayed significantly higher impairments in the Aggression and Relationship with Friends dimensions than females. No gender differences were found for the dimensions of Investments and goals, and Relationship with Family.

In order to investigate differences in the APS-Q scores related to age, we ran one way MANOVA test (and Kruskal-Wallis test) using different age groups (age 13, n=37; age 14, n=111; age 15, n=147; age 16, n=153; age 17, n=129; age 18, n=143; age 19, n=128). Again, the Aggression dimension presented equivalent results for both parametric and non-parametric analyses. We found significant differences in the APS-Q scores based on age groups,  $F(13, 848) = 4.19, p < .001$ ; Wilk's  $\Lambda = .814$ , partial  $\eta^2 = .034$ . Precisely, for the dimensions of Sense of Self (13 and 15 years old group) and Sexuality (13-, 14- and 15-years old group) (Table 10). The lower the age, the higher the impairment in these dimensions.

## DISCUSSION

This contribution aimed at presenting preliminary data on the development of the Adolescent Personality Structure Questionnaire, a self-report measure aimed at capturing the core features of personality functioning in adolescence. In line with the dimensional approach to maladaptive personality, we developed an instrument that explores seven core dimensions. Coherently with the structural model for personality pathology (Kernberg, O.F. 1978; Kernberg, P.F. et al., 2000) and similarly to the IPOP-A (Ammaniti et al., 2012), the APS-Q explores dimensions theoretically related to identity integration, quality of object relations and affect regulation. Furthermore, coherently with Criterion A of the AMPD (APA, 2013), the APS-Q considers self and interpersonal related aspects of maladaptive personality functioning.

Empirical literature stresses that identity is a particularly complex and multifaceted construct in adolescence and it must be considered both from a more intrapsychic point of view (Kernberg O.F., 2016; Benzi & Madeddu, 2017) as according to its psychosocial characteristics (Kroger, 2007; Meeus, 2011). Thus, the APS-Q dimensions are in line with previous research highlighting the facets of identity integration in adolescence as related to the coherence and stability of self-image (Sense of Self dimension; Kernberg, P.F. et al., 2000; Preti et al., 2015) and also as accounting developmental changes related to body and the presence of shame



(Self-acceptance dimension; Finkenauer et al., 2002; Ammaniti et al., 2012). Also, being at ease with sexual impulses and desires (Sexuality dimension) is crucial to the overall well-being of the individual during this developmental phase (Kernberg, O.F., 1998b; Moore & Rosenthal, 2007). Finally, the APS-Q encompasses the stability and presence of investments and goals (Investments and goals dimension), which is also connected to the development of a healthy and integrated sense of self (Becht et al., 2016).

The APS-Q seems a suitable self-report measure of personality functioning in adolescence also because it is the first instrument assessing both quality of the relationship with significant figures within the family context (Relationship with Family dimension) and outside of it (Relationship with Friends dimension). According to an object relations model of personality pathology, the quality of relations and inner representations of relations are essential aspects as they define the adolescent's capacity of genuine, enduring and intimate relationships (e.g., Kernberg, P.F. et al., 2000).

Lastly, the Aggression dimension, which investigates the tendency to acting-out (toward self or others) or to lose control when emotions are overwhelming, acknowledges the need for considering the aspects related to affect regulation (e.g., Kernberg, O.F., 1994, 1998a; Garnefski & Kraaij, 2006).

Hence, consistent with our hypotheses, we proved the stability and coherence of the aforementioned factor structure of the APS-Q (factor congruence) and demonstrated its ability to provide stable profiles of personality functioning over a short period of time (test-retest validity).

Overall, the structure of the APS-Q is coherent with recent literature on maladaptive personality in adolescence suggesting that self and interpersonal aspects are core features of personality pathology (e.g., Morey et al., 2011; AMPD, APA, 2013; Sharp & Wall, 2017). Indeed, we found dimensions that explore both self-related facets of personality, such as identity (Sense of Self, Self-acceptance, Sexuality) and self-directedness (Investments and goals) and interpersonal-related aspects of personality, such as intimacy and empathy (Relationship dimensions).

Furthermore, the APS-Q showed good construct validity. The majority of the APS-Q dimensions were significantly related with all the SIPP-118 dimensions, supporting the validity of the constructs that the APS-Q measures. In other words, an impairment in personality functioning measured with the APS-Q corresponded to an impairment in corresponding dimensions in the SIPP-118. Also, as we expected, the Sexuality dimension, was barely related to any of the latter.

Second, as the AMPD suggests (e.g., Bender et al., 2011, Morey et al., 2011), we expected an impairment in the dimensions of the APS-Q to be related to maladaptive personality traits as well as provide unique information (discriminant validity). As far as our knowledge, the AMPD in adolescence has not been studied consistently, but the literature suggests a relationship between the level of impairment in personality functioning and maladaptive traits as independent yet mutually related facets of personality (De Clerq et al., 2014; Somma et al., 2017). Accordingly, we found that the Sense of Self and Self-acceptance dimensions were related to internalizing maladaptive personality traits of Negative affectivity and Detachment. In other words, features related to intrapsychic facets of self, have a significant association with maladaptive traits that account for emotional lability, anxiousness and separation insecurity (Negative affectivity) as well as withdrawal, anhedonia and intimacy avoidance (Detachment). Similarly, the Aggression dimension was related to maladaptive personality externalizing traits of Antagonism and Disinhibition. Thus, the tendency to act-out overwhelming emotional states is positively linked to traits describing manipulateness, deceitfulness and grandiosity features (Antagonism) as well as irresponsibility, impulsivity and distractibility features (Disinhibition). Moreover, impairments in the APS-Q interpersonal dimensions of personality were meaningfully related to traits of withdrawal, anhedonia and intimacy avoidance (Detachment).

Third, in line with previous research (e.g., Widiger, 2011), we found that an impairment in the Sense of Self, Self-acceptance and Aggression dimensions was related to the general psychological distress. In other words, the higher the

impairment in the self-related facets of personality the higher the presence of general pathological symptoms.

Finally, according to existing literature, we found that the APS-Q was able to account for crucial topics in adolescence such as gender and age differences (Feingold, 1994; Soto, John, Gosling & Potter, 2011). More specifically, for the age differences, in line with research that focus on identity as a crucial aspect of personality development in adolescence (e.g. Kernberg, P.F., et al., 2000; Ensink et al., 2015; Sharp & Wall, 2017), we found that having a stable self-image and the ability to mentalize internal states and behaviors (Sense of Self dimension), as well as the degree in which adolescents can integrate their first sexual impulses (Sexuality) vary significantly through different age groups.

Overall, the present study shows that the APS-Q is a promising instrument assessing pathological personality functioning in adolescence. However, the APS-Q needs further studies confirming its factor structure and investigating its construct validity. For instance, it would be crucial to explore the factor stability of the APS-Q on different samples, computing a Confirmatory Factor Analysis (CFA; Brown, 2014). In particular, it would be useful to test its factor structure among clinical samples of adolescents with personality disorders. Also, as the APS-Q is aimed to detect levels of personality functioning impairment, it would be relevant to administer the questionnaire to different clinical populations of adolescents to highlight pathological cut-offs. Future studies could also use the IPOP-A semi-structured interview to test the convergent validity of the APS-Q further. Finally, it would be essential to investigate whether the APS-Q can capture specific features of pathological personality functioning that are related to specific PDs (Kernberg, O.F., 1998a; Ensink et al., 2015; Normandin, Ensink & Kernberg, O.F., 2015).

In conclusion, our findings provide preliminary data supporting the validity of the APS-Q as a reliable and stable instrument to investigate personality functioning in adolescence. The APS-Q is in line with the promising dimensional approach to personality assessment that considers self and interpersonal features as core aspects of personality pathology (e.g., Morey et al., 2011; Sharp & Wall, 2017).

Also, the APS-Q, differently from other available instruments, was developed without the need to adapt it from adult assessment tools, but directly according to a developmental model for personality functioning in adolescence (Kernberg, P.F. et al.; 2000; Ammaniti, Fontana & Nicolais, 2015) which permits to capture those features that are distinctive in personality functioning during this developmental phase. Finally, it is a brief instrument (39 items) that allows identifying areas of impairment in personality functioning quickly, and this is particularly important when working with adolescents, that are often initially reluctant to lengthy psychological assessments.

TABLES

**Table 1. Parallel Analysis - Principal components and random normal data generation.**

Factors	Actual Data Eigenvalues	Random Data Eigenvalues	95% Percentile
1	14.026515	1.950368	2.008948
2	5.924647	1.894729	1.939724
3	4.324389	1.851818	1.889893
<b>4</b>	<b>3.890437</b>	<b>1.814953</b>	<b>1.847375</b>
5	2.874475	1.782820	1.814142
<b>6</b>	<b>2.708531</b>	<b>1.752711</b>	<b>1.782153</b>
<b>7</b>	<b>2.429104</b>	<b>1.724017</b>	<b>1.750912</b>
8	2.089035	1.698596	1.724732
9	1.983452	1.673755	1.698695
10	1.926886	1.649250	1.672804
11	1.766307	1.625867	1.650009
12	1.692953	1.604740	1.627757
13	1.656696	1.583453	1.605622
<b>14</b>	<b>1.589972</b>	<b>1.562568</b>	<b>1.583215</b>
15	1.523010	1.542582	1.563115

*Note* Tested factor solutions appear in bold.

**Table 2. Factor Structure of the APS-Q (Total Sample, n= 848; Promax rotation)**

Item	Factors	Self-acceptance	Sense of Self	Aggression	Relationship with Family	Sexuality	Relationships with Friends	Investments and goals
Often I cannot understand why I behave in a certain way rather than in another	<b>SELF</b>	-0.01	<b>0.79</b>	-0.07	-0.04	0.00	-0.07	-0.01
I see myself in completely different ways depending on the situation	<b>SELF</b>	0.00	<b>0.69</b>	0.00	-0.01	-0.05	0.04	0.05
Some of my friends would be surprised if they knew how much my behavior could change from situation to situation	<b>SELF</b>	0.02	<b>0.63</b>	0.12	0.05	-0.03	0.01	-0.03
If I think about it, every day I am like a different person	<b>SELF</b>	-0.05	<b>0.58</b>	0.05	-0.05	0.02	-0.03	0.20
I often feel emotions and I do not understand why	<b>SELF</b>	0.08	<b>0.63</b>	-0.09	-0.05	-0.02	-0.09	-0.02
Even people who know me better are not able to predict my behavior	<b>SELF</b>	-0.13	<b>0.59</b>	0.11	0.11	-0.04	0.09	0.01
I cannot explain the changes in my behavior	<b>SELF</b>	0.05	<b>0.53</b>	0.03	-0.05	0.12	-0.09	0.11
I think I'm a different person when I'm at home when compared to when I'm at school or at work	<b>SELF</b>	-0.04	<b>0.44</b>	0.00	0.12	0.09	0.07	-0.01
I often think that my body is defective	<b>SELFACC</b>	<b>0.89</b>	0.01	0.00	-0.06	-0.09	-0.07	-0.05
I am completely satisfied with my physical appearance	<b>SELFACC</b>	<b>0.88</b>	-0.16	-0.03	0.05	-0.05	0.03	-0.03
I would like to be able to completely change my physical appearance	<b>SELFACC</b>	<b>0.81</b>	-0.05	0.04	0.04	-0.01	0.00	-0.02
I often feel ashamed of myself	<b>SELFACC</b>	<b>0.74</b>	0.17	-0.04	-0.01	0.05	0.06	-0.01

If I think about it, I am not satisfied with myself	<b>SELFACC</b>	<b>0.63</b>	0.11	-0.01	0.10	-0.03	0.01	0.04
Often, when people look at me, I feel ashamed	<b>SELFACC</b>	<b>0.56</b>	0.18	-0.04	-0.13	0.19	0.07	-0.04
If I'm very angry I can even come to blows	<b>AGG</b>	0.00	-0.06	<b>0.81</b>	-0.03	-0.02	-0.05	-0.09
Sometimes I am so angry I am afraid I can become violent	<b>AGG</b>	-0.03	0.13	<b>0.75</b>	-0.02	-0.04	-0.01	-0.02
I happened to beat someone because he/she deserved it	<b>AGG</b>	-0.04	-0.17	<b>0.76</b>	-0.01	-0.01	0.05	-0.10
Sometimes I get so angry with my family that I am afraid I can become violent	<b>AGG</b>	-0.03	0.06	<b>0.66</b>	0.08	0.00	0.03	0.03
When I get angry with a friend I lose control	<b>AGG</b>	0.03	0.12	<b>0.58</b>	-0.04	-0.01	-0.03	0.02
When I get angry with my family, I lose control	<b>AGG</b>	0.10	0.18	<b>0.54</b>	-0.01	-0.07	-0.07	0.00

*Table 3 Continued...*

**Table 2. Continued.**

Item	Factors	Self-acceptance	Sense of Self	Aggression	Relationship with Family	Sexuality	Relationships with Friends	Investments and goals
With my family I talk about everything I care about	<b>RELFAM</b>	-0.01	-0.03	-0.04	<b>0.84</b>	0.01	-0.05	0.00
If I have a major problem, I turn to my family in search of help	<b>RELFAM</b>	0.04	-0.03	-0.01	<b>0.82</b>	-0.02	-0.01	-0.01
I do not want my family to know anything about my life	<b>RELFAM</b>	-0.04	0.02	0.10	<b>0.71</b>	0.09	-0.03	0.03
When I am in trouble I find it hard to ask Y for help	<b>RELFAM</b>	-0.01	0.26	-0.13	<b>0.57</b>	-0.05	0.07	-0.08
During fights my family members try to understand my point of view	<b>RELFAM</b>	0.06	-0.07	0.03	<b>0.57</b>	0.02	0.06	-0.02
I do not feel any interest in what concerns sexuality	<b>SEX</b>	-0.10	-0.02	0.08	0.04	<b>0.78</b>	-0.13	0.04
I enjoy experiencing my sexuality	<b>SEX</b>	-0.03	-0.09	-0.07	0.02	<b>0.77</b>	-0.04	-0.12
I feel comfortable with my sexual desires	<b>SEX</b>	0.03	0.01	-0.04	0.03	<b>0.72</b>	0.02	-0.01
When I think about sex, I feel very embarrassed	<b>SEX</b>	0.02	0.12	-0.10	-0.05	<b>0.68</b>	0.01	-0.05
I am sure X understands me without me needing to say anything	<b>RELFRI</b>	0.01	-0.07	-0.03	-0.03	-0.04	<b>0.82</b>	-0.03
I know for sure X will never disappoint me	<b>RELFRI</b>	0.12	-0.01	-0.04	-0.04	-0.21	<b>0.76</b>	0.04
With my best friend I share every intimate aspect of my life	<b>RELFRI</b>	-0.17	-0.10	-0.02	0.09	0.06	<b>0.67</b>	0.01
I cannot imagine what X might think about me	<b>RELFRI</b>	0.05	0.13	0.06	-0.05	0.04	<b>0.62</b>	0.02
Nobody, other than my family, is really important to me, not even .....	<b>RELFRI</b>	-0.12	0.07	0.10	-0.18	0.24	<b>0.39</b>	-0.04



When I start a new hobby after a while I get tired and quit	<b>INV</b>	-0.10	0.18	-0.15	-0.05	-0.12	-0.01	<b>0.85</b>
I throw myself into hobbies and new interests and then abandon them	<b>INV</b>	-0.12	0.19	-0.10	-0.01	-0.12	0.00	<b>0.75</b>
There is no particular activity I spend my free time doing	<b>INV</b>	0.05	-0.13	0.10	0.03	0.15	-0.09	<b>0.60</b>
When I dedicate myself to my hobbies, I feel much satisfaction	<b>INV</b>	0.14	-0.24	0.08	0.07	0.11	0.09	<b>0.56</b>
I like to keep myself busy even when I do not study/work	<b>INV</b>	0.08	-0.16	0.03	0.02	0.03	0.05	<b>0.50</b>
<b>Eigenvalues</b>		3.63	3.64	2.99	2.66	2.39	2.28	2.27
<b>% of variance</b>		9	9	8	7	6	6	6

*Note* Factor loadings over .30 appear in bold.

Table 3. Inter-correlations between APS-Q factors (n=848).

		APS-Q Dimensions						
		Sense of Self	Self-acceptance	Sexuality	Investments and goals	Aggression	Relationship with Friends	Relationship with Family
APS-Q Dimensions	Sense of Self							
	Self-acceptance	<b>.40**</b>						
	Sexuality	.07*	.18**					
	Investments and Goals	.25**	.26**	.02				
	Aggression	<b>.42**</b>	.09**	-.08*	.17**			
	Relationship with Friends	.15**	.04	.19**	.17**	.15**		
	Relationship with Family	<b>.30**</b>	.25**	-.01	.21**	.24**	.09**	

Note \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ ; correlations over .30 appear in bold.

Table 4. Alpha internal consistency and average inter-item correlations (n= 848).

APS-Q ( $\alpha = .85$ )				
Factor	Number of items	$\alpha$	Corrected item-total correlation	
			M	Range
Sense of Self	8	.79	.57	.42 - .67
Self-acceptance	6	.86	.66	.59 - .80
Sexuality	4	.73	.60	.58 - .65
Aggression	6	.79	.61	.54 - .75
Investments and goals	5	.67	.54	.39 - .74
Relationship with Friends	5	.68	.53	.35 - .69
Relationship with Family	5	.76	.61	.45 - .75

Table 5. Factor congruence between Random 1 (n=422) and Random 2 (n=451) subsamples.

		Random 2 subsample						
		Self- acceptance	Sense of Self	Aggression	Relationship with Family	Sexuality	Relationship with Friends	Investments and Goals
Random 1 subsample	Self- acceptance	<b>.96</b>	.04	-.02	.03	.01	.04	-.09
	Sense of Self	.00	<b>.97</b>	.02	.02	-.04	-.07	.11
	Aggression	-.03	.05	<b>.98</b>	.03	-.04	-.01	-.07
	Relationship with Family	.03	-.01	.00	<b>.95</b>	.01	-.02	-.03
	Sexuality	-.04	.00	-.03	-.01	<b>.97</b>	-.03	-.10
	Relationship with Friends	-.01	.00	-.02	-.01	-.07	<b>.95</b>	.01
	Investments and Goals	.00	.03	-.02	.04	.01	.03	<b>.94</b>

Table 6. Pearson Correlation Coefficients between Retest (T0 and T1) measurements (1 month) (n=451).

		APS-Q T0 Dimensions						
		Sense of Self	Self-acceptance	Sexuality	Investments and goals	Aggression	Relationship with Friends	Relationship with Family
APS-Q T1 Dimensions	Sense of Self	<b>.74**</b>	.33**	.12*	.21**	.39**	.18**	.32**
	Self-acceptance	.37**	<b>.87**</b>	.19**	.21**	.08	.01	.30**
	Sexuality	.17**	.21**	<b>.77**</b>	.10*	-.04	.20**	.07
	Investments and Goals	.24**	.28**	.04	<b>.76**</b>	.11*	.16**	.16**
	Aggression	.26**	.00	-.13**	.11*	<b>.74**</b>	.19**	.26**
	Relationship with Friends	.20**	.01	.16**	.20**	.15**	<b>.72**</b>	.12**
	Relationship with Family	.30**	.26**	.05	.20**	.31**	.17**	<b>.77**</b>

Note \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ ; correlations over .70 appear in bold.

Table 7. Pearson Correlation Coefficients between APS-Q dimensions and SIPP-118 domains (n=562).

		APS-Q Dimensions						
		Sense of Self	Self-acceptance	Sexuality	Investments and goals	Aggression	Relationship with Friends	Relationship with Family
SIPP-118 Domains	Self-control	<b>-.66**</b>	<b>-.41**</b>	-.06	<b>-.27**</b>	<b>-.53**</b>	<b>-.17**</b>	<b>-.28**</b>
	Social concordance	<b>-.33**</b>	<b>-.16**</b>	.01	<b>-.28**</b>	<b>-.53**</b>	<b>-.25**</b>	<b>-.28**</b>
	Identity integration	<b>-.61**</b>	<b>-.62**</b>	<b>-.17**</b>	<b>-.45**</b>	<b>-.33**</b>	<b>-.25**</b>	<b>-.36**</b>
	Relational capacities	<b>-.49**</b>	<b>-.36**</b>	<b>-.17**</b>	<b>-.30**</b>	<b>-.29**</b>	<b>-.46**</b>	<b>-.35**</b>
	Responsibility	<b>-.46**</b>	<b>-.31**</b>	.10*	<b>-.39**</b>	<b>-.45**</b>	<b>-.18**</b>	<b>-.39**</b>

Note \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ ; correlations over .30 appear in bold.

Table 8. Pearson Correlation Coefficients between APS-Q dimensions and PID-5 domains (n=562).

		APS-Q Dimensions						
		Sense of Self	Self-acceptance	Sexuality	Investments and goals	Aggression	Relationship with Friends	Relationship with Family
PID-5 Domains	Negative affectivity	<b>.51**</b>	<b>.52**</b>	.14**	.20**	.15**	-.01	.12**
	Detachment	<b>.42**</b>	<b>.36**</b>	.28**	<b>.33**</b>	.25**	<b>.35**</b>	<b>.33**</b>
	Antagonism	.22**	-.10*	-.19**	.15**	<b>.42**</b>	.05	.20**
	Disinhibition	<b>.48**</b>	.28**	-.05	<b>.35**</b>	<b>.48**</b>	.10*	<b>.35**</b>
	Psychoticism	<b>.60**</b>	<b>.31**</b>	.04	.18**	<b>.42**</b>	.10*	<b>.30**</b>

Note \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ ; correlations over .30 appear in bold.

Table 9. Welch Two Sample t-test (t) and Mann-Whitney (U) Coefficients for APS-Q dimensions and gender (n=848).

	M (n=305)		F (n=543)		95% CI for Mean Difference		t	df	U
	Mean	SD	Mean	SD	Lower	Upper			
<b>Sense of Self</b>	2.38	.69	2.51	.70	-.22	-.03	-2.54*	846	-
<b>Self-acceptance</b>	2.34	.85	3.01	.87	-.78	-.54	-10.76***	846	-
<b>Sexuality</b>	2.09	.71	2.48	.83	-.50	-.28	-7.10***	714,90	-
<b>Investments and Goals</b>	2.18	.69	2.25	.71	-.16	.03	-1.33	846	-
<b>Aggression</b>	2.00	.75	1.72	.67	.20	.38	5.44***	570,40	63587.00***
<b>Relationship with Friends</b>	2.31	.71	2.12	.72	.08	.29	3.65***	846	-
<b>Relationship with Family</b>	2.89	.80	2.85	.86	-.08	.15	.63	670,50	-

Note \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ ; M= males, F= females



**Table 10. One-way MANOVA (F) and Kruskal-Wallis (H) Coefficients for APS-Q dimensions and age (n=848).**

	13 (n=37)		14 (n=111)		15 (n=147)		16 (n=153)		17 (n=129)		18 (n=143)		19 (n=128)		F	H
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD		
<b>Sense of Self</b>	2.88	.74	2.43	.68	2.54	.68	2.38	.689	2.49	.69	2.43	.69	2.37	.72	3.36**	-
<b>Self-acceptance</b>	2.62	.99	2.63	1.05	2.89	.88	2.68	.884	2.88	.88	2.70	.88	2.86	.91	1.94	-
<b>Sexuality</b>	2.92	.88	2.83	.90	2.46	.80	2.24	.784	2.22	.73	2.11	.70	2.11	.68	16.50***	-
<b>Investments and Goals</b>	2.12	.80	2.19	.71	2.24	.71	2.21	.734	2.21	.69	2.26	.72	2.23	.61	1.02	-
<b>Aggression</b>	1.97	.67	1.81	.69	1.88	.72	1.91	.86	1.80	.68	1.77	.64	1.70	.62	1.47	6.8
<b>Relationship with Friends</b>	2.19	.79	2.22	.71	2.28	.80	2.20	.78	2.16	.76	2.04	.64	2.22	.61	1.50	-
<b>Relationship with Family</b>	2.85	.93	2.98	.89	2.93	.78	2.81	.80	2.87	.87	2.76	.83	2.89	.84	.25	-

Note \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$

## STUDY 4

### EMERGING PERSONALITY STRUCTURE IN ADOLESCENCE: ASSOCIATIONS WITH BORDERLINE AND NARCISSISTIC FEATURES

#### INTRODUCTION

We acknowledged that adolescence is a particularly “sensitive” period because it is during this phase of development that personality is structured (e.g., Ensink et al., 2015; Powers & Casey, 2015) (see Chapter 1). Also, the presence of maladaptive personality during this developmental phase represents a crucial risk factor for the exacerbation of other pathologies as well as for the appearance of PDs in adulthood (e.g., Chanen et al., 2005). Moreover, an increasing number of contributions have underlined the importance of adopting a dimensional approach to the evaluation of pathological personality in adolescence (e.g., Westen et al., 2003; Stepp, 2012). This, as we have seen, to address the many limitations that the adoption of a diagnostic system based solely on symptoms brings with it.

As pointed out by recent contributions (Sharp, Wright, Fowler, Frueh, Allen et al., 2015; Sharp & Wall, 2017) the presence of a borderline functioning (characterized mainly by a diffusion of the sense of self, by the lack of ability to regulate internal emotional states and by important impairments in interpersonal relationships) seems to be the foundation of what we define as personality pathology. In this regard, the model of object relations allows a better understanding of these aspects (e.g., Normandin et al., 2015; Kernberg, 2016). In fact, the concept of personality organization (PO) refers to internal structures of the individual’s functioning that are organized into stable patterns of emotions, behaviors etc. that influence self and interpersonal aspects of personality (Clarkin et al, 2006; See table 1).

Additionally, as previously stated, assessing potential areas of impairment in personality functioning in adolescence is crucial (see Chapter 1). To address some of the limitations of most of the self-report tools available, we have developed the

Adolescent Personality Questionnaire (APS-Q) (Benzi et al., *under rev.*). The APS-Q allows to assess both self and interpersonal aspects of personality, accounting for features such as the stability of the self-image, body changes and the presence of shame, the quality of the relationships with significant figures within the family and within peers, the tendency to acting-out when emotional states are overwhelming, the presence and stability of goals, as well as aspects related to sexuality.

Furthermore, as stated in previous chapters (i.e., Chapter 1 and 3) the AMPD model, in order to diagnose PDs, emphasized the importance of studying both functional impairment of personality (considering both self and interpersonal related aspects) as well as patterns of maladaptive personality traits. However, we have seen how we are faced with an almost paradoxical situation where the interplay of these two aspects is both blurry and at the same time fundamental to consider in assessing personality pathology (e.g., Morey, 2017; Boland et al., 2018).

#### RELATIONSHIP BETWEEN PERSONALITY FUNCTIONING AND BORDERLINE AND NARCISSISTIC FEATURES

Sharp and colleagues (2015) have recently pointed out that personality pathology in general accounts for many of the characteristics of BPD: identity diffusion, emotional dysregulation, impairment in interpersonal relationships, etc. For this reason, most of the studies on PDs in adolescence aim at specifically investigating BPD (e.g., Chanen et al., 2007; Stepp, 2012; Paris, 2013).

Another aspect, this time little examined in adolescence, is the association between maladaptive personality functioning and narcissistic traits. Kernberg (2007) differentiates between three levels of severity of narcissistic pathology on a continuum that starts at a neurotic level of personality organization (narcissistic syndrome, accounting for self and interpersonal impairments) up to a severe borderline organization characterized by antisocial behaviors and much more negative prognostic outcomes (see Caligor, Levy & Yeomans, 2015 for a comprehensive overview). Furthermore, Pincus and Lukowitsky (2010) proposed a taxonomy of narcissism accounting for its nature (normal/pathological), phenotype

(grandiose/vulnerable), manifestations (overt/covert) and structure (categorical/dimensional/prototypical). Morf and Rhodewalt (2001) described the concept of self of narcissistic patients as "paradoxically both grandiose and vulnerable", underling how the individual might manifest both grandiosity and sense of entitlement as well as a constant seek for admiration and attention from others.

All in all, narcissistic grandiosity (NG) refers to the engagement in regulatory fantasies of unlimited power, superiority and perfection, entitled attitudes and disregards for the needs and feelings of others whilst narcissistic vulnerability (NV) comprises the conscious experience of helplessness, emptiness, envy, shame, rage, and avoidance of interpersonal relationships that is due to hypersensitivity to rejection and criticism (e.g., Ronningstam, 2005; Pincus et al., 2014). Unlikely from what happens in the dynamics of borderline functioning, narcissistic features tend to increase during adolescence and to decrease during adulthood (Vater, Moritz & Roepke, 2018). Narcissistic features might also help adolescents overcoming challenges that are specific of this developmental phase (Hill & Lapsley, 2011).

#### AIMS OF THE STUDY

According to the object relations theoretical framework, this contribution aims at presenting further data on the development of the Adolescent Personality Questionnaire (APS-Q).

Thus, the first objective of this study is confirming the seven dimensions of functioning that assess emerging personality in adolescence: Sense of Self, Self-acceptance, Investments and Goals, Aggression, Sexuality, Relationship with Family and Relationship with friends. Moreover, the study aims at confirming factorial invariance between different gender groups of adolescents.

The second objective of this study is testing the ability of the APS-Q to unravel the specific associations of emerging personality with borderline and narcissistic traits. Thus, we expect to find strong associations of maladaptive

personality functioning with borderline features. Similarly, we expect to find specific associations with narcissistic grandiosity and narcissistic vulnerability.

## METHODS

### PARTICIPANTS

The study involved 982 participants, including 649 females (66.1%) and 333 males (33.9%) with an overall mean age of 16.18 ( $SD = 1.35$ ; range = 13-19). Participants were recruited from middle and secondary schools in Northern Italy. The assessment was performed after receiving authorization from both parents of underage students and older students themselves. To ensure their anonymity, students received a unique reference code and completed self-report questionnaires via a private web link. The Institutional Review Board approved all materials and procedures.

A subsample of 676 participants including 453 females (67.0%) and 223 males (33.0%) with an overall mean age of 15.8 ( $SD = 1.30$ ; range = 13-19) also completed measures of borderline features, and narcissistic features to investigate associations with pathological personality traits.

### MEASURES

#### *Adolescent Personality Structure Questionnaire*

*(APS-Q; Benzi et al., under rev.)*

The APS-Q is a self-report measure consisting of 39 items that assesses personality structure in adolescence according to 7 dimensions: Sense of Self, Self-acceptance, Sexuality, Investments and Goals, Relationship with Family, Relationship with Friends, and Aggression. The Sense of Self dimension describes the degree to which the teenager perceives him/herself as having characteristics, experiences and feelings that are stable and integrated over time (e.g. "I see myself in completely different ways depending on the situation", "I often feel emotions and I don't understand why"). The dimension Self-acceptance includes items related to the relationship with the body and the possible presence of shame (e.g. "I often

think that my body is defective", "I often feel ashamed of myself"). The Investments and Goals dimension is linked to the presence and stability over time of significant ambitions and purposes (beyond study and work) (e.g., "I throw myself into hobbies and new interests and then abandon them"). The Aggression scale includes items related to the presence (or propensity) to acting out (or desire to) aggression (e.g., "Sometimes I am so angry I am afraid I can become violent", "I happened to beat someone because he/she deserved it"). Sexuality explores how much the teenager is comfortable with his/her sexual impulses/desires ("When I think about sex, I feel very embarrassed"). Finally, Relationship with Family and Relationship with Friends, ask the teenager to think about the most significant person inside (and outside) the family nucleus, so as to give an assessment of the quality of their relationships (e.g. "I don't want my family to know anything about my life", "I cannot imagine what [my best friend] might think about me").

For each item, the questionnaire asks participants to rate their level of agreement on a 5-point scale (1 = *Never true* to 5 = *Always true*). All the scales showed good internal consistency coefficients, with  $\alpha$  values ranging from .65 (Relationship with Friends) to .85 (Self-acceptance).

#### *Borderline Personality Feature Scale for Children-11 - BPFSC-11*

*(Sharp et al., 2014; Fossati et al., 2016)*

The BPFSC-11 is a 11-item self-report that measures borderline personality features in children (from age 9 to adolescents). The items assess Borderline Personality disorder's features such as identity problems, affective instability and negative relationships rated on a 5-point scale (1 = *Never true* to 5 = *Always true*). The BPFSC-11 total score measures the overall level of borderline features: the higher the score, the greater the intensity of BPD characteristics. The BPFSC-11 total score showed a good internal consistency coefficient ( $\alpha = .77$ ).

### *Pathological Narcissism Inventory - PNI*

*(Pincus et al., 2009; Fossati et al., 2014)*

The PNI is a 52-item self-report measure that assesses pathological narcissism and accounts for overt and covert features of grandiose and vulnerable narcissism. PNI items are rated on a 6-point scale (0 = *Not at all like me* to 5 = *Very much like me*). Also, the PNI assesses seven scales: Contingent Self-Esteem, Exploitativeness, Self-Sacrificing Self-Enhancement, Hiding the Self, Grandiose Fantasy, Devaluing, and Entitlement Rage. For the purpose of this study, we considered the scales of Narcissistic Grandiosity (NG) and Narcissistic Vulnerability (NV). All the scales showed good internal consistency coefficients, with  $\alpha$  values ranging from .82 (Grandiose Narcissism) to .92 (Vulnerable Narcissism).

### STATISTICAL ANALYSES

Statistical analyses were conducted using R code (R Core Team, 2017). General descriptive statistics were computed to describe the sociodemographic characteristics of the participants (R package *psych*). Using the R package *lavaan*, we performed confirmatory factor analysis (CFA; Rosseel, 2012) to validate the factorial structure of the APS-Q. Since the APS-Q assesses emerging personality structure, item responses might be considered as continuous and skewed distributions might occur (Ellison & Levy, 2012). Thus, we utilized weighted least squares means and variance adjusted (WLSMV) estimation and standardized the latent factors, allowing for free estimation of all factor loadings. In order to evaluate goodness of fit, as  $\chi^2$  is associated with sample size, we considered the following indices: Comparative Fit Index (CFI; Bentler, 1990), Tucker-Lewis Fit Index (TLI; Bentler & Bonett, 1980), Root Mean Square Error of Approximation (RMSEA; Steiger, 1990) and standardized root mean square residual (SRMR; Hu & Bentler, 1999). CFI and TLI values between .90 and .95 indicated an adequate model fit, whilst values  $>.95$  implied an excellent fit. Adequate RMSEA values were comprised between .05 and

.08, whilst values  $<.05$  suggested an excellent model fit. Also, a SRMR value  $<.08$  is generally considered a good fit. Accounting for sample size, we considered the number of indicators (items) per factor and the number of factor estimates in order to compute item parcels aggregating items according to their factor loadings (Little, Cunningham, Shahar & Widaman, 2002).

Then, we evaluated measurement invariance of the factorial structure across gender groups utilizing multigroup CFA comparisons to test parameter equality constraints (Hirschfeld & von Brachel, 2014). Multigroup comparisons utilize nested models testing firstly configural invariance: this step assesses whether the estimated parameters (factors) have the same configuration of free and fixed factor loadings. Secondly, metric invariance constrains the item loadings of the factors to be equivalent across groups. If metric invariance is warranted, it is possible to subsequently test for scalar (equal covariances) and strict invariance (equal residual variances). In order to compare the nested models, Cheung & Rensvold (2002) recommend considering  $\Delta CFI \leq .01$  as displaying invariance between groups.

Finally, we investigated associations between personality structure and borderline and narcissistic features computing simple linear regressions (available in the R package *stats*).

## RESULTS

All in all, the APS-Q scales showed a good internal consistency, also considering gender subgroups (See Table 2 for a summary).

### STABILITY OF FACTOR SOLUTION AND MULTI-GROUP INVARIANCE

We conducted CFA on the global sample in order to confirm the best fitting solution for the APS-Q. We specified three oblique models with five, six and seven factors. The five-factor model included the following dimensions: Self (accounting for Sense of Self and Self-acceptance features), Investments and Goals, Sexuality, Aggression and Relationships (accounting for quality of relationships with friends and family). The six-factor model included the following dimensions: Self



(accounting for Sense of Self and Self-acceptance features), Investments and Goals, Sexuality, Aggression and Relationship with Family and Relationship with Friends. The seven factor model included: Sense of Self, Self-acceptance, Investments and Goals, Sexuality, Aggression and Relationship with Family and Relationship with Friends. As anticipated, chi-square was significant for all the considered models. However, as presented in Table 3, CFI, TLI, RMSEA and SRMR indices supported the goodness-of-fit of the model. Compared to the five and six solutions, the seven-factor solution resulted the most satisfactory.

Hence, we tested the seven-factor model in a series of multigroup CFA comparisons to test equivalence of constraints across gender subgroups. Firstly, the model fit showed adequate indices amongst both groups (males:  $\chi^2 = 182,707$ ,  $p > .05$ , CFI = .995, TLI = .994, RMSEA = .016, CI on RMSEA [.000-.030], SRMR = .048; females:  $\chi^2 = 198.461$ ,  $p > .05$ , CFI = .995, TLI = .994, RMSEA = .037, CI on RMSEA [.000-.025], SRMR = .037). Secondly, we tested progressively more restrictive configurations to assess multigroup invariance. Configural invariance had very good fit indices ( $\chi^2 = 381.168$ ,  $p < .05$ , CFI = .995, TLI = .994, RMSEA = .017, CI on RMSEA [.003-.024], SRMR = .041). Then, as we tested scalar invariance (a model that constrains factor loadings to be equal), we found no significant decrease in fit with  $\Delta CFI \leq .01$  ( $\chi^2 = 409.788$ ,  $p < .05$ , CFI = .994, TLI = .992, RMSEA = .019, CI on RMSEA [.009-.026], SRMR = .042), suggesting the factorial structure to be stable amongst males and females. Afterwards, we tested for metric invariance between the groups that resulted in  $\Delta CFI = .015$ . Thus, the two groups did not display equal covariances (See Table 4 for a summary of fit indices). All in all, data confirmed the seven-factor structure for the APS-Q, proving that the items of the APS-Q are related to the same factors across both gender groups.

#### ASSOCIATIONS WITH BORDERLINE FEATURES

In order to test the associations between personality dimensions and borderline features, we computed a multiple regression model. Results are reported in Table 5 and 6. Pearson  $r$  correlations showed significant relationships between all

the dimensions of personality and borderline features but the Relationship with Friends and Sexuality scales. Thus, the higher the level of Sense of Self, Self-acceptance, Aggression, Relationship with Family and Investments and Goals dimensions, the higher the level of borderline features. Then, we included gender in the regression model as we found significant differences between males ( $M = 2.56, SD = .60$ ) and females ( $M = 2.89, SD = .62$ ) in level of borderline features,  $t(645) = -6.28, p < .001$ . We did not include age as there were no significant correlations between age and borderline features ( $r = -.68, p = .08$ ).

The regression model showed that, together with all the other dimensions, also Sexuality was significantly associated with the severity of borderline features, although the lower the level of difficulties in the Sexuality dimension, the higher the borderline features. Thus, the higher the level of the other dimensions, the higher the level of borderline traits. On the other hand, the Relationship with Friends was not significantly associated with borderline features.

Data suggest significant associations between specific personality dimensions and borderline characteristics. In particular, results showed strong associations between borderline features and impairments in self related personality dimensions (Sense of Self and Self -acceptance) as well as with difficulties in aggression regulation (Figure 1).

#### ASSOCIATIONS WITH GRANDIOSE NARCISSISTIC FEATURES

In order to test the associations between personality dimensions and grandiose narcissistic features, we computed a multiple regression model. Results are reported in Table 7 and 8. Pearson  $r$  correlations showed significant relationships between all personality dimensions except for Relationship with Family, Investments and Goals and Sexuality. Thus, the higher the level of Sense of Self, Self-acceptance, Aggression the higher the level of grandiose narcissism features. On the contrary, the lower the level of severity in the and Relationship with Friends dimension, the higher the level of grandiose narcissism features.

Then, we did not include gender in the regression model as we found no significant differences between males ( $M = 3.66$ ,  $SD = .77$ ) and females ( $M = 13.76$ ,  $SD = .60$ ) in level of grandiose narcissistic features,  $t(634) = -1.50$ ,  $p = .111$ . We also did not include age as there were no significant correlations between age and grandiose narcissistic features ( $r = -.01$ ,  $p = .08$ ).

However, the regression model showed that also Aggression, together with Relationship with Family, were not significantly associated with grandiose features.

Then, together with all the other dimensions, also Sexuality and Investments and Goals were significantly associated with the severity of grandiose features. Thus, the higher the level of Sense of Self and Self-acceptance dimensions, the higher the level of grandiose narcissism features. On the other hand, the lower the impairment in the Relationship with Friends, Investments and Goals and Sexuality dimensions, the higher the presence of grandiose narcissism characteristics.

Results showed that impairments in specific dimensions of personality are differently associated to more severe grandiose narcissistic characteristics (Figure 2).

#### ASSOCIATIONS WITH VULNERABLE NARCISSISTIC FEATURES

In order to test the associations between personality dimensions and vulnerable narcissistic features, we computed a multiple regression model. Results are reported in Table 7 and 9. Pearson  $r$  correlations showed significant relationships between all personality dimensions except for Sexuality. Thus, the higher the level of these dimensions the higher the level of vulnerable narcissism features. We included gender in the regression model as we found significant differences between males ( $M = 3.21$ ,  $SD = .69$ ) and females ( $M = 3.47$ ,  $SD = .74$ ) in level of vulnerable narcissistic features,  $t(635) = -4.24$ ,  $p < .001$ . We also did not include age as there were no significant correlations between age and vulnerable narcissistic features ( $r = -.04$ ,  $p = .25$ ).

However, the regression model showed that only the self-related dimensions and Aggression were significantly associated with vulnerable features. Thus, the

higher the level of impairment in the Sense of Self, Self-acceptance and Aggression dimensions, the higher the level of vulnerable narcissism features.

Finally, data indicated significant relations between vulnerable narcissistic features and self-related aspects of personality as well as aggression (Figure 3).

## DISCUSSION

The aim of the study was to replicate the previous findings on the factorial structure of the APS-Q, a 39-item self-report measure aimed at assessing emerging personality structure in adolescence (Benzi et al., *under rev.*). Furthermore, we wanted to explore the specific associations of the level of personality functioning with borderline and narcissistic (both grandiose and vulnerable) features.

First, we were able to confirm the factorial structure of the APS-Q. The internal consistency of the instrument proved to be high in the overall sample and in gender sub-groups and the factorial structure was confirmed in the global sample. Moreover, the APS-Q displayed both configural and metric invariance across gender subgroups, showing that the items have the same factorial structure amongst males and females. Thus, according to an object relations framework, the APS-comprises the following dimensions (e.g., Kernberg, P.F. et al., 2000; Ammaniti et al., 2012): Sense of Self (accounting for the stability of the self-image and the ability to acknowledge/recognize internal experiences), Self-acceptance (considering to which degree is the adolescent at ease with the changes in his/her body as well as feelings of shame related to that), Aggression (assessing the tendency of the adolescent to acting out aggressively), Investments and Goals (looking at presence and stability of interests other than school or work), Sexuality and two scales on the quality of the Relationship with Family and with Friends. Also, in line with the recent A criterion for personality pathology proposed in the AMPD, the APS-Q comprises dimensions related to self/identity (i.e., Sense of Self, Self-acceptance) and self/direction (i.e., Investments and Goals) as well as dimensions related to interpersonal aspects that are crucial in adolescence (i.e.,

Relationship with Family and Friends). Furthermore, the APS-Q acknowledges one of the key features of borderline pathology which is the presence of Aggression, that, when uncontrolled, might be acted out against the self or/and against the others. Finally, the quality of the relationship with internal sexual impulses and general maturation (Sexuality) is also an emerging feature that heavily influences adolescents' lives and that might affect other areas of personality.

Second, as expected, we found specific association of emerging personality with both borderline and narcissistic traits. Considering borderline features, we found self-related dimensions of personality to be strongly related to borderline features. This is consistent with the majority of research on PDs, which endorses that an impairment in the image of the self (i.e., identity disturbance) is at the basis of borderline pathology (e.g., Sharp et al., 2015; Normandin et al., 2015).

Moreover, during this period of development it is important to consider that not only the internal image of the self plays a crucial role, but also at the same time the relationship with one's own bodily changes consistently contributes to the structuring of a stable and coherent identity, and that the body is often the place where adolescents "manifest" their identity difficulties (i.e., NSSI) (e.g., Davison & McCabe, 2006). Furthermore, even a lower level of impairment in the in sexuality, in managing aggressive impulses and in the stability of goals contribute are associated with fewer borderline feature.

As far as interpersonal relationships are concerned, in our sample, only the quality of relationships with the significant figure within the family was associated with the presence of borderline features. On the other hand, the quality of relationships with friends does not seem to contribute significantly to this relationship. One explanation might be the fact that the borderline aspects investigated by the BPFSC-11 are primarily related to the self-dimension (Sharp et a., 2014). Moreover, unlike relationships with family members, whose boundaries at this stage of development may be in the middle between self and interpersonal

aspects (i.e., separation and individuation; Blos, 1967; Sugimura et al., 2018), relationships with friends might be better representing the actual quality of the relational dimension.

Considering grandiose narcissistic features, data suggest once again the presence of a strong relationship between an impairment in aspects related to identity features and the presence of grandiosity. In line with the literature that defines grandiosity as a way of manifesting superiority and perfection, entitled attitudes and disregards towards others that, in this phase of development, can help to protect adolescents from a wound in their self-esteem, we have found inversely proportional relationships with the dimensions related to the quality of the relationship with friends, investment and sexuality (e.g., Ronningstam, 2005).

Therefore, a greater grandiosity was associated with a higher quality of relationships with friends, probably to demonstrate the desire not to show a difficulty in a dimension that is so important at this stage of life, as the one of the quality of the relationship with peers (e.g., Rubin, Bukowski, Parker & Bowker, 2008). Similar considerations can be made about the quality of the relationship with sexuality and the presence of interests/investments (e.g., Foser & Brunell, 2018). We have not found differences between males and females in this association, showing that grandiosity might be partly covering relational difficulties, while not eliminating a manifest difficulty in the integration of aspects related to identity.

Considering the aspects of vulnerability, instead, data suggest the presence of a strong association only between the dimensions related to self and acceptance of the self and of aggression. This is in line with the definition of vulnerability which includes the conscious experience of the subject of emptiness, shame as well as anger. Moreover, none of the other dimensions of personality was associated with NV, showing how the characteristics of pathological vulnerability are closely related to the pathology of the self (e.g., Thomaes, Bushman, Stegge & Olthof, 2008).

The results of this contribution should be also understood in the context of its limitations. First, our data confirmed the factorial stability of the APS-Q. However, it would be important to replicate the current results in clinical samples as well as in larger and culturally diverse populations of adolescents. Second, in order to further acknowledge the contribution of maladaptive personality functioning to borderline and narcissistic features, it would be essential to collect longitudinal data. Third, emerging personality structure, borderline traits and narcissistic features were evaluated with self-report measures. Future research should employ clinical interviews in order to assess more in-depth the severity of emerging personality pathology.

In conclusion, our study confirms the preliminary data on the APS-Q as an agile and reliable measure to assess emerging personality functioning in adolescence. Moreover, we found the APS-Q to be able to acknowledge for specificities of personality functioning in the relationship with maladaptive traits. This adds to the debate previously emphasized on the importance of adopting a dimensional perspective on PDs in order to explain pathological traits. Furthermore, in line with the AMPD model (APA, 2013) we provided further results on the importance of accounting for self and interpersonal features of maladaptive personality.

These findings encourage further reflections for clinicians in this developmental phase. Indeed, our results suggest that identifying crucial impaired dimensions of emerging personality structure might benefit clinical purposes and practice, given the specific associations between specific personality dimensions and their level of impairment with borderline and narcissistic features.

**TABLES AND FIGURES**

**Table 1. Summary of characteristic features of personality organization (adapted from Clarkin, Yeomans & Kernberg, 2006)**

	<b>NORMAL ORGANIZATION</b>	<b>NEUROTIC ORGANIZATION</b>	<b>BORDERLINE ORGANIZATION</b>
<i>Identity</i>	Integrated sense of self and others; investment in work and leisure	Coherent sense of self and others; investment in work and leisure	Incoherent sense of self and others; poor investments in work and leisure
<i>Defenses</i>	Use of more advanced defenses; flexibility; adaptive coping strategies	Use of defenses centered on repression; rigidity	Use of primitive defenses centered on splitting
<i>Reality Testing</i>	Accurate perception of self vs. non-self, internal vs. external; empathy with social criteria of reality	Accurate perception of self vs. non-self, internal vs. external; empathy with social criteria of reality	Variable empathy with social criteria of reality; lack of subtle tactfulness
<i>Aggression</i>	Anger modulated; appropriate self-assertion	Inhibited aggression; angry outbursts followed by guilt;	Self-directed aggression; some with aggression toward others; hatred in severe cases
<i>Internalized Values</i>	Stable, independent, individualized	Excessive guilt feelings; some inflexibility in dealing with self	Contradictory value system; incapacity to live up to own values; significant absence of certain values
<i>Object Relations</i>	Lasting and deep relations with others; sexual intimacy combined with tenderness; coherent working models of relationships	Some degree of sexual inhibition, or difficulties in integrating sex and love; deep relations with others, with specific focused conflicts with selected others	Troubled interpersonal relations; absence of or chaotic sexual relations; confused internal working models of relationships; severe interference with love relations



Table 2. Alpha internal consistency and average item-total correlations for total sample (n= 982) and gender subgroups (M=333, F=649).

		APS-Q ( $\alpha = .85$ )					
Factor	Number of items	$\alpha$			Corrected item-total correlation		
		Total sample	Males	Females	Total sample M [range]	Males M [range]	Females M [range]
Sense of Self	8	.80	.80	.80	2.43[1.55-2.91]	2.32[1.54-2.84]	2.50[1.56-3.00]
Self-acceptance	6	.85	.80	.85	2.68[2.27-3.31]	2.20[1.83-2.75]	2.92[2.45-3.60]
Aggression	6	.81	.82	.81	1.80[1.53-2.49]	2.04[1.60-2.30]	1.69[1.38-2.61]
Relationship with Family	5	.78	.70	.82	2.78[2.19-3.35]	2.80[2.23-3.30]	2.77[2.17-3.37]
Relationship with Friends	5	.65	.65	.65	2.15[1.90-2.38]	2.36[2.10-2.72]	2.05[1.80-2.20]
Investments and goals	5	.72	.66	.74	2.21[1.98-2.50]	2.20[1.92-2.64]	2.20[2.01-2.43]
Sexuality	4	.77	.68	.77	2.30[1.63-2.89]	1.91[1.45-2.37]	2.50[1.72-3.16]

**Table 3. Fit indices for confirmatory factor analysis (CFA) solutions for the APS-Q dimensions (n=982).**

<b>Model</b>	$\chi^2$	<i>df</i>	<b>p</b>	$\chi^2/df$	<b>CFI</b>	<b>TLI</b>	<b>RMSEA</b>	<b>90% CI</b>	<b>SRMR</b>
Five -Factors	1551.772	179	<.001	8.669	.855	.830	.088	[.084 - .092]	.084
Six-Factors	1041.261	174	<.001	5.984	.908	.889	.071	[.067 - .075]	.069
<b>Seven-Factors</b>	<b>438.479</b>	<b>168</b>	<b>&lt;.001</b>	<b>2.609</b>	<b>.971</b>	<b>.964</b>	<b>.041</b>	<b>[.036 - .045]</b>	<b>.044</b>

*Note.* CFI = Comparative Fit Index; TLI = Tucker-Lewis Fit Index; RMSEA = Root-Mean Square Error of Approximation; SRMR = Standardized Root-Mean-Square Residual

**Table 4. Fit indices for multigroup invariance solutions for the APS-Q 7 dimensions model between males and females.**

<b>Model</b>	$\chi^2$	<i>df</i>	<b>p</b>	$\chi^2/df$	<b>CFI</b>	<b>TLI</b>	<b>RMSEA</b>	<b>90% CI</b>	<b>SRMR</b>	$\Delta \chi^2(p)$
<b>Males (n=333)</b>	182.707	168	>.05	1.08	.995	.994	.016	[.000 - .030]	.048	-
<b>Females (n=649)</b>	198.461	168	>.05	1.18	.995	.994	.017	[.000 - .025]	.037	-
<b>Full configural invariance</b>	381.168	336	<.05	1.13	.995	.994	.017	[.003 - .024]	.041	-
<b>Full metric invariance</b>	409.788	350	<.05	1.17	.994	.992	.019	[.009 - .026]	.042	18.36 (p = .190)
<b>Full scalar invariance</b>	568.005	364	<.001	1.56	.979	.975	.034	[.036 - .045]	.049	230.24 (p = <.001)

*Note.* CFI = Comparative Fit Index; TLI = Tucker-Lewis Fit Index; RMSEA = Root-Mean Square Error of Approximation; SRMR = Standardized Root-Mean-Square Residual

**Table 5. Correlation (Pearson  $r$ ) within the Adolescent Personality Structure Questionnaire (APS-Q) domains and with the Borderline Personality Features Scale for Children 11 (BPFSC-11).**

	<b>BPFSC-11</b>
<b>APS-Q</b>	
Sense of Self	.565**
Self-acceptance	.503**
Aggression	.294**
Relationship with Family	.374**
Relationship with Friends	.076
Investments and Goals	.245**
Sexuality	.054

N= 676; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 6. Summary of multiple regression model testing the associations between personality dimensions and borderline features (controlling for gender) (n = 676).**

APS-Q	BPFSC-11	
	$\beta$	$t$
Sense of Self	.31	9.11***
Self-acceptance	.27	7.60***
Aggression	.06	6.10***
Relationship with Family	-.06	3.84***
Relationship with Friends	.19	.55
Investments and Goals	.12	2.13*
Sexuality	.01	-1.96*
Gender	.17	4.84***
$R^2$		.47
$F$		71.51***

Note \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ . APS-Q = Adolescent Personality Structure Questionnaire; BPFSC-11 = Borderline Personality Feature Scale for Children-11.

**Table 7. Correlation (Pearson  $r$ ) within the Adolescent Personality Structure Questionnaire (APS-Q) domains and with the Pathological Narcissism Inventory (PNI; Grandiose and Vulnerable Narcissism scales).**

	PNI	
	GN	VN
<b>APS-Q</b>		
Sense of Self	.212**	.484**
Self-acceptance	.137**	.440**
Aggression	.090*	.224**
Relationship with Family	.051	.258**
Relationship with Friends	-.098*	.109**
Investments and Goals	-.059	.180**
Sexuality	-.077	.054

N= 676; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 8. Summary of multiple regression model testing the associations between personality dimensions and grandiose narcissistic features (n = 676).**

APS-Q	PNI - NG	
	<i>B</i>	<i>t</i>
Sense of Self	.20	4.51***
Self-acceptance	.11	2.48*
Aggression	.05	1.28
Relationship with Family	-.02	-.64
Relationship with Friends	-.11	-2.87**
Investments and Goals	-.11	-2.87**
Sexuality	-.11	-2.69**
<i>R</i> <sup>2</sup>		.09
<i>F</i>		8.70***

*Note* \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ . APS-Q = Adolescent Personality Structure Questionnaire; PNI - NG = Pathological Narcissism Inventory - Narcissistic Grandiosity scale.

**Table 9. Summary of multiple regression model testing the associations between personality dimensions and vulnerable narcissistic features (controlling for age and gender) (n = 676).**

APS-Q	PNI - NV	
	$\beta$	<i>t</i>
Sense of Self	.29	7.47***
Self-acceptance	.28	6.81***
Aggression	.13	3.62***
Relationship with Family	.03	.88
Relationship with Friends	.05	.55
Investments and Goals	.03	1.43
Sexuality	-.05	-1.44
Gender	.08	2.20*
<i>R</i> <sup>2</sup>		.32
<i>F</i>		37.85***

*Note* \*\*\*  $p \leq .001$ ; \*\*  $p \leq .01$ ; \*  $p \leq .05$ . APS-Q = Adolescent Personality Structure Questionnaire; PNI - NV = Pathological Narcissism Inventory - Narcissistic Vulnerability scale.



Figure 1. Multiple regression model testing the associations between personality dimensions and borderline features (controlling for gender).

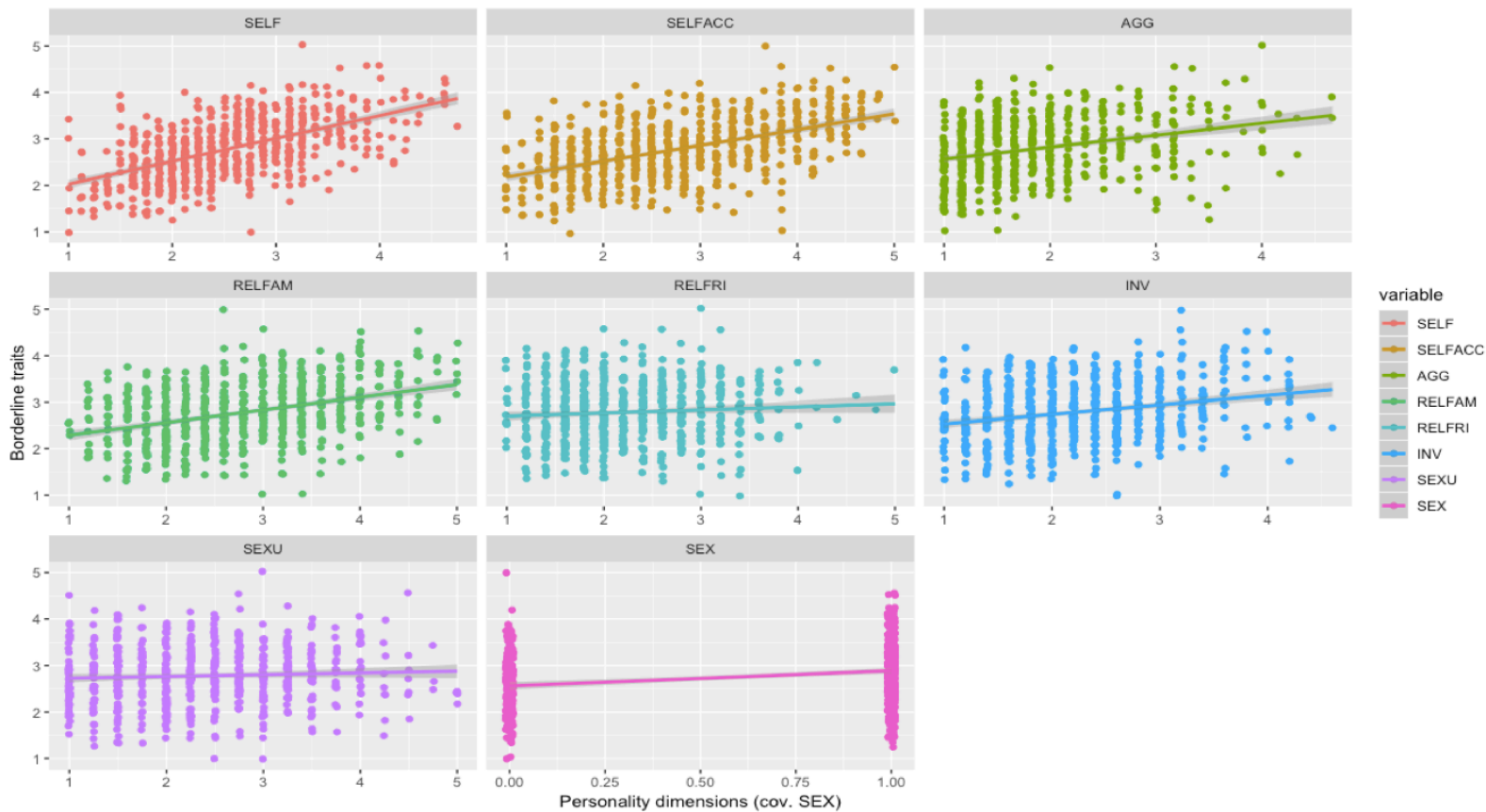


Figure 2. Multiple regression model testing the associations between personality dimensions and grandiose narcissistic features.

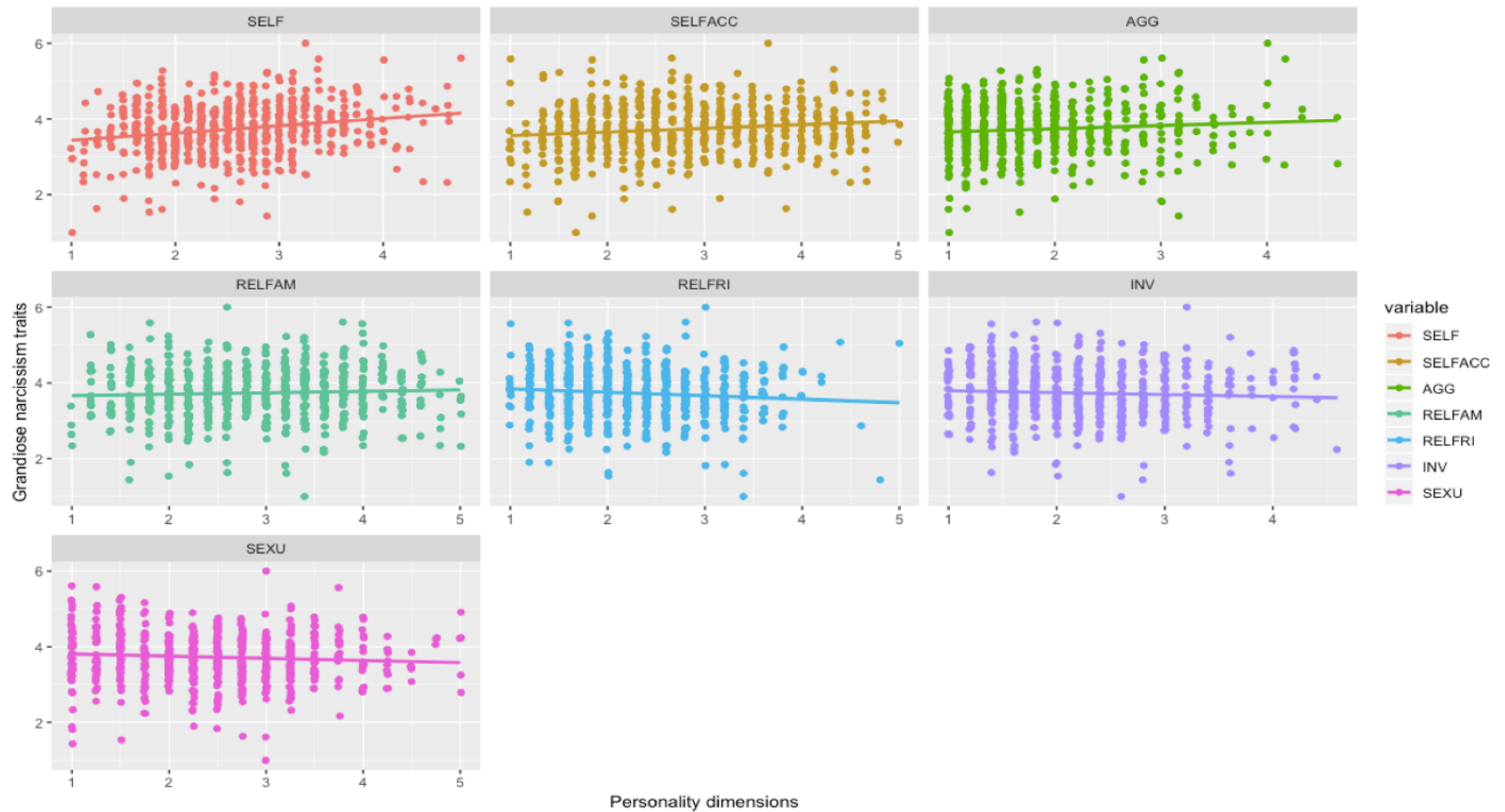
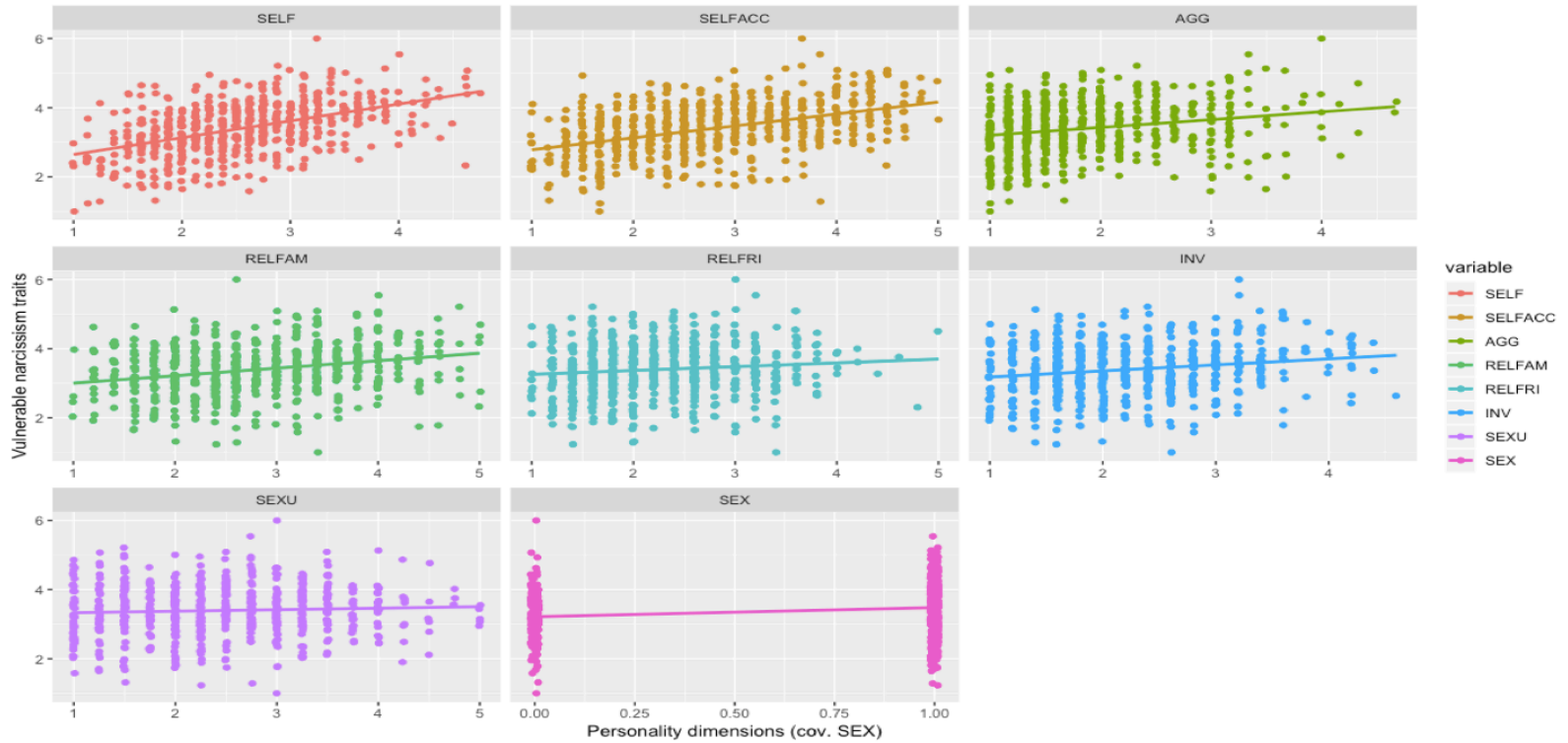


Figure 3. Multiple regression model testing the associations between personality dimensions and vulnerable narcissistic features (controlling for gender).



## CHAPTER 5

# FACETS OF EMERGING PERSONALITY FUNCTIONING

*The following chapter continues the exploration of the dimensions related to emerging personality structure in adolescence. In fact, a disruption in one's own identity (or sense of self) as well as in the quality of interpersonal relationships, might also influence the adolescent's ability to recognize mental states of others (regarding feelings, behaviors, intentions). Thus, accounting for a dimensional perspective, the following study aims at identifying specific personality dimensions that help explaining mentalistic abilities as well as highlighting gender differences in these associations.*

### STUDY 5

#### **RELATIONSHIP WITH PEERS, SELF-ACCEPTANCE AND GENDER DIFFERENCES: EXPLORING THE ASSOCIATIONS BETWEEN PERSONALITY STRUCTURE IN ADOLESCENCE AND MENTALIZING ABILITIES**

#### INTRODUCTION

Adolescence is characterized as a transitional phase, where rapid and sometimes dramatic changes entangle the realms of emotion, biology, cognition and interpersonal relationships (Kernberg, P.F. et al., 2000; Cicchetti, 2009). The self and interpersonal transformations that characterize this developmental phase are linked to the contexts where adolescents spend most of their time, particularly amongst their group of peers and at school. It is therefore in this crucial phase that social development and the quality of close friendships play a fundamental role (Rubin et al., 2008; Reitz, Zimmermann, Hutteman, Specht & Neyer, 2014).

As we have seen in Chapters 1 and 2, the construction of the emerging personality relates to some fundamental tasks that include the acceptance of body

changes, the establishment of a coherent, stable and original identity and the maturation of interpersonal relationships that represent adolescents' test-bed for identity development (e.g., Kroger, 2007).

Research has shown that the process of identity formation includes the ability of individuals to experience their mental states and to attribute meaning to their own emotions, behaviors and intentions (e.g., Lind, Vanwoerden, Penner & Sharp, 2018). This ability is associated with the broader concept of mentalization, or "theory of mind" (ToM), that allows the individual to understand the behaviors of others as influenced by underlying mental states. Literature has abundantly shown how a deficit in the ability to mentalize is a central part of borderline personality functioning. Similarly, a lack of mentalization has been shown to be strongly associated with vulnerabilities in personality functioning, especially in cluster A and cluster B patients (e.g., Fonagy & Bateman, 2008; Bleiberg, Rossouw & Fonagy, 2012).

As we have seen (see Chapter 1), despite the evident conceptual overlapping between personality functioning pathology and the concept of mentalization, few studies have investigated their relationship in adolescence. Sharp and colleagues (2011) suggest a motivation in the general low inclination to consider the diagnosis of PDs in youth not to foster stigmatization in such a crucial developmental phase. We suggest also that one reason might lie in the limitations of the categorical diagnostic system (frequently used for the assessment of PDs) that only grasps symptomatic aspects and therefore does not consider features of functioning and severity that are instead embedded in the concept of mentalization. Conversely, according to a psychodynamic framework, the ability to make sense of one's own and others' mental states is incorporated in the concept of identity integration, the impairment of which is the core of personality pathology (e.g., Kernberg, O.F., 2016).

Furthermore, gender differences are crucial to consider in adolescence, as previous research has shown different manifestations of personality pathology amongst boys and girls (i.e., boys displaying more aggressive behaviors, girls

displaying higher functioning and more internalizing features etc.) (e.g., Bradley et al., 2005; De Bolle et al. 2015).

#### AIMS OF THE STUDY

To our knowledge, only a few studies have investigated the specific associations between a dimensional approach to emerging personality structure and mentalizing abilities in adolescence (e.g., Fontana et al., 2018).

Thus, this contribution, accounting for a dimensional approach to (mal)adaptive personality, aims at exploring the specific associations between emerging personality structure in adolescence and mentalistic abilities. In particular, as we are investigating the ability to understand and make sense of others' mental states, we expect to find significant associations with the dimensions related to interpersonal aspects such as the quality of relationships with friends and family as well as with the ability to regulate aggressive and sexual impulses. Furthermore, it aims at exploring gender differences in the relationship between specific dimensions of personality and mentalization.

#### METHODS

##### PARTICIPANTS

The study involved 529 participants, including 311 females (58.8%) and 218 males (41.2%) with an overall mean age of 16.56 ( $SD = 1.36$ ; range = 14-19). Participants were recruited from middle and secondary schools in Northern Italy. The assessment was performed after receiving authorization from both parents of underage students and older students themselves. To ensure their anonymity, students received a unique reference code and completed self-report questionnaires via a private web link. The Institutional Review Board approved all materials and procedures.

## MEASURES

### *Adolescent Personality Structure Questionnaire*

*(APS-Q; Benzi et al., under rev.)*

The APS-Q is a self-report measure consisting of 39 items that assesses personality structure in adolescence according to 7 dimensions: Sense of Self, Self-acceptance, Sexuality, Investments and Goals, Relationship with Family, Relationship with Friends, and Aggression. The Sense of Self dimension describes the degree to which the teenager perceives him/herself as having characteristics, experiences and feelings that are stable and integrated over time (e.g. "I see myself in completely different ways depending on the situation", "I often feel emotions and I don't understand why"). The dimension Self-acceptance includes items related to the relationship with the body and the possible presence of shame (e.g. "I often think that my body is defective", "I often feel ashamed of myself"). The Investments and Goals dimension is linked to the presence and stability over time of significant ambitions and purposes (beyond study and work) (e.g., "I throw myself into hobbies and new interests and then abandon them"). The Aggression scale includes items related to the presence (or propensity) to acting out (or desire to) aggression (e.g., "Sometimes I am so angry I am afraid I can become violent", "I happened to beat someone because he/she deserved it"). Sexuality explores how much the teenager is comfortable with his/her sexual impulses/desires ("When I think about sex, I feel very embarrassed"). Finally, Relationship with Family and Relationship with Friends, ask the teenager to think about the most significant person inside (and outside) the family nucleus, so as to give an assessment of the quality of their relationships (e.g. "I don't want my family to know anything about my life", "I cannot imagine what [my best friend] might think about me").

For each item, the questionnaire asks participants to rate their level of agreement on a 5-point scale (1 = *Never true* to 5 = *Always true*). All the scales showed good internal consistency coefficients, with a value for the total score = .84 and a

values for the individual scales ranging from .65 (Relationship with Friends) to .83 (Self-acceptance).

*Movie for the Assessment of Social Cognition*  
(MASC; Dziobek, 2006)

The MASC is a computerized test that aims at assessing mentalizing abilities or theory of mind asking the subjects to evaluate a relational situation that is very close to the demands of everyday life. In fact, the subjects visualize a 15-minute film whose protagonists are four characters (Sandra, Michael, Cliff and Betty) who meet for a dinner party. The video is interrupted 45 times to ask participants to answer questions that are related to the mental states of the various characters (accounting for intentions, thought and feeling) (e.g. "What is Sandra thinking?", "What is Cliff feeling?"). The themes of each segment have to do with aspects related to both friendship and romantic relationships. Each of the characters experiences different mental and emotional states during the evening (i.e. affection, anger, jealousy, fear, disgust etc.). Moreover, the characters have different levels of intimacy and knowledge (friends to strangers) so that they can represent different types of attribution of mental states depending on the level of "closeness".

Through the MASC it is possible to score, together with a total score of mentalization, also other levels of social cognition abilities: hyper-mentalization, low mentalization and no mentalization. Each question has four answer choices, each related to a level of mentalization. The MASC also provides control questions which ask to make non-socially related questions to assess verbal understanding of the task stimuli. The MASC has proven to be a reliable instrument in previous studies both in normal and clinical samples.

#### STATISTICAL ANALYSES

Statistical analyses were conducted using R code (R Core Team, 2017). General descriptive statistics were computed to describe the sociodemographic



characteristics of the participants (R package *psych*). To test the associations between personality dimensions and mentalizing abilities, we conducted Pearson *r* correlations coefficients and a multiple regression analyses (R package *stats*). Finally, we examined whether gender contribution would moderate the effect of severity of personality functioning on the adolescent's mentalizing capacities. Thus, we performed a series of moderation analyses (R package *psych*). We considered the APS-Q dimensions as separate independent variables, the mentalizing scale as the dependent variable (MASC), and gender groups as moderators, controlling for the other personality dimensions as covariates.

## RESULTS

### ASSOCIATION BETWEEN EMERGING PERSONALITY STRUCTURE AND MENTALIZING ABILITIES

In order to test the associations between personality dimensions and mentalizing abilities, we computed a multiple regression model. Results are reported in Table 1.

Pearson *r* correlations for the associations between personality dimensions and mentalization, showed significant correlations for Self-acceptance and Aggression and Relationship with friends. Thus, on the one side, the higher the impairment in Self-acceptance, the higher the mentalization abilities. On the other, the lower the impairment in Aggression and Relationship with friends, the higher the level of mentalization.

Again, Pearson *r* correlations for the associations between personality dimensions and low mentalization, showed significant correlations for Self-acceptance, Investments and Goals, Aggression and Relationship with friends. However on the one side, the higher the impairment in the Aggression, Investments and Goals and Relationship with Friends dimensions, the higher the presence of low mentalization abilities. On the other, the lower the impairment in Self-acceptance, the higher the presence of low mentalization.

Pearson  $r$  correlations for the associations between personality dimensions and no mentalization, showed significant correlations for Investments and Goals, Aggression and Relationship with friends. Thus, the higher the impairment in these dimensions, the higher the presence of no mentalizing abilities. Finally, no significant Pearson  $r$  correlations were found with hyper-mentalizing.

We included gender in three models (predicting mentalizing, less mentalizing and no mentalizing) as we found significant differences between males and females in the level of mentalization. However, we did not include gender in the model predicting hyper-mentalizing as we found no significant differences between males ( $M = 9.19$ ,  $SD = 3.81$ ) and females ( $M = 8.81$ ,  $SD = 3.53$ ) in the level of mentalization,  $t(529) = -1.18$ ,  $p = .23$ . We included age in two models (predicting less and hyper-mentalizing) as there were significant correlations between age and level of mentalization. We did not include age in two models (predicting mentalizing and no mentalizing) as there were no significant correlations between age and level of mentalization.

Regression model for mentalizing (Table 2) showed that only lower impairment in Sexuality, Aggression and Relationship with Friends dimensions were significantly associated with higher mentalizing abilities. Thus, the lower the impairment in these specific dimensions, the higher the level of mentalizing abilities. On the other hand, Self-acceptance was no more significantly associated with mentalizing abilities.

Regression model for low mentalizing (Table 3) showed that only higher impairment was in Investments and Goals, Aggression and Relationship with Friends dimensions were significantly associated with higher impairment in mentalizing abilities. Thus, the higher the impairment in these specific dimensions, the higher the presence of low mentalizing abilities. On the other hand, Self-acceptance was no more significantly associated with low mentalizing abilities.

Regression model for no mentalizing (Table 4) showed that only higher impairment were in Sexuality and Relationship with Family dimensions were significantly associated with no mentalizing abilities. On the other hand, lower

impairment in Relationship with Friends and Investments and goals was associated with higher presence of no mentalizing abilities. As predicted, Regression model for hyper-mentalizing resulted non-significant (Table 5).

#### GENDER DIFFERENCES IN THE RELATIONSHIP BETWEEN EMERGING PERSONALITY STRUCTURE AND MENTALIZING ABILITIES

We explored the effect of gender differences on the relationship between maladaptive personality functioning as measured by the APS-Q and level of mentalizing capacities as measured by the MASC. For every model, we included all the personality dimensions as covariates, in order to acknowledge the contribution of the whole personality dimensions (see Table 1 for zero order correlations). Considering mentalization as a dependent variable (Table 6), results showed that gender moderated the contribution of Self-acceptance, Relationship with Family, Relationship with Friends and Sexuality. More specifically, belonging to the females' group, resulted in a stronger relationship between the level of impairment in the Self-acceptance dimension and mentalizing whilst belonging to the males group made no significant difference. Also, belonging to the males group, resulted in a stronger relationship between the level of impairment in the Relationship with Family dimension and mentalizing whilst belonging to the females group made no significant difference (Figure 1). Finally, belonging to the males' group, resulted in a stronger relationship between lower levels of impairment in the Relationship with Friends and Sexuality dimensions and mentalizing whilst belonging to the females group made no significant difference (Figures 2, 3, 4).

Considering low mentalization as a dependent variable (Table 7), results showed that gender moderated the contribution of Self-acceptance, Relationship with Friends. More specifically, although the first model was significant, there were no significant conditional effects, meaning that belonging to one of the groups made no significant difference in the strength of the relationship between Self-acceptance and Relationship with Friends. Nevertheless, the effect of the relationship between Self-acceptance on low-mentalizing is opposite, depending on the group (Figure 5).

Also, belonging to the males' group, resulted in a stronger relationship between the level of impairment in the Relationship with Friends dimension and low mentalizing whilst belonging to the females group made no significant difference (Figure 6). Finally, considering absence of mentalization as a dependent variable (Table 8), results showed that gender moderated the contribution of Self-acceptance, Relationship with Friends and Sexuality. More specifically, belonging to the females group, resulted in a stronger relationship between a lower level of impairment in the Self-acceptance dimension and absence of mentalization whilst belonging to the males group made no significant difference. Also, belonging to the males' group, resulted in a stronger relationship between the level of impairment in the Relationship with Friends and Sexuality dimensions and no mentalizing whilst belonging to the females group made no significant difference (Figures 7, 8, 9).

## DISCUSSION

This contribution aimed at investigating the specific associations between personality structure in adolescence and different levels of mentalistic abilities. Moreover, this study aimed at elucidating gender differences in the relationship between dimensions of personality and mentalization.

First, as expected, data suggested specific associations between personality dimensions and the ability to understand others' mental states. While the self-related dimensions did not show significant associations, aspects associated with the quality of the relationship with peers were strongly associated with correct mentalization. This is in line with data on social cognitive abilities that are indeed related to the quality of interpersonal functioning (Fossati, Borroni, Dziobek, Fonagy & Somma, 2017). Besides, we argue that the contribution of the quality of the relationships with the most significant figure within the family was not significant accounting for the specific developmental phase of the participants. Indeed, it is during adolescence that individuals experience the development of their social cognitive abilities especially amongst peers, rather than inside the familiar environment, which might be instead more related to the development and

integration of their sense of self. Thus, a higher investment and trust in the quality of the relationships with friends goes hand in hand with the ability to develop a significant closeness with them and though being able to understand their feelings, behaviors and motivations (e.g., Romund et al., 2017).

At the same time, aggression emerged as an important element. The difficulty in regulating emotional states is linked both to the presence of borderline personality functioning as well as to an impairment in the individual's mentalizing abilities. Similarly, the quality of the relationship with sexual impulses, which of course has an intrinsic relational dimension, contributes to explain a higher ability to understand others' mental states (e.g., Ensink, Bégin, Normandin & Fonagy, 2016; Abate, Marshall, Sharp & Venta, 2017).

Results are also similar when accounting for the relationship between personality and low levels of mentalizing abilities. In this case, we enter a more shadowy zone, where a mentalizing "effort" is somehow present, but not enough to let the individual attribute the correct mental states to others. It is once again the quality of the relationships with friends and aggression that are associated, in a direct proportion, with difficulties in mentalizing. Differently from the previous model, the contribution of an impairment in the stability of investments is also significant: this might be explained by a general lower functioning of the personality as well as to the inability to consider their present and future goals and interests.

Examining instead the association between emerging personality structure and a lack of mentalization, data showed again the significant contributions of the quality of the relationships with friends and the presence and stability of goals. This time, however, we found an inverse relationship: thus, a lower impairment in the quality of relationships with friends and investments was associated with a greater lack of mentalization. This relationship can be explained by reflecting on the possibility that adolescents who have difficulty understanding the mental states of others, also have difficulty understanding their own mental states and might report a good quality of their relationships with friends as well as for their personal goals. Moreover, an impairment in the quality of the relationship within the familiar

environment and the sexuality dimensions contribute to explain the lack of mentalizing abilities. As expected, this is in line with the fact that mentalization deficits are linked to difficulties in relationships with significant figures within the family (e.g., Fonagy & Luyten, 2009).

Finally, differently, than other studies on the role of hyper-mentalizing, data did not show significant associations with excessive mentalization. This result might be understood considering the type of this specific sample that showed impairment levels of personality functioning that were lower than clinical samples. Also, it might foster further discussions on the specificity of hyper-mentalizing features in adolescence (e.g., Sharp et al., 2011).

Second, we considered gender differences in the associations between personality dimensions and levels of mentalization. Data suggest that the dimension of self-acceptance is particularly crucial for females in explaining correct mentalization, as well as demonstrating a lack of it. More pathological scores in the dimension of personality that accounts for bodily changes and the presence of feelings of shame, therefore describing the difficulty in "looking at oneself", were linked for females, and not for males, to a greater ability to "look at the others". This result is in line with research that shows how borderline functioning in adolescence can correspond to an imbalance in the levels of self and interpersonal functioning, underlining the complex interplay between these two dimensions of functioning (e.g., Davison & McCabe, 2006; Preißler, Dziobek, Ritter, Heekeren & Roepke, 2010).

Moreover, data showed that for males, and not for females, the quality of the relationships with peers is fundamental in explaining all the levels considered: correct mentalization, low mentalization and a lack of it. This is in line with the literature that shows that males during adolescence have a strong investment in peers and this can help to exercise and develop their social cognitive abilities (e.g., Prinstein, Brechwald & Cohen, 2012; Reitz et al., 2014 ).

Moreover, for males, even the dimension of sexuality contributed to the understanding of correct mentalization as well as the absence of mentalization. This

data might be in line with the psychodynamic conceptualization of the quality of the relationship with aspects related to sexuality as an essential core of the ability to regulate "non-adjustable" impulses (Fonagy, 2008) and thus being associated with a correct mentalization. On the other hand, an inverse relationship associated the quality of relationships with family members with mentalizing abilities. Again, this might be explained with an imbalance in the quality of the relationship within the family, which might be considered more self-related, and the ability to understand others' mental states.

The results of the study should be understood in the context of its limitations. First, personality dimensions were evaluated with a self-report measure. Future research should employ clinical interviews to assess more in-depth the level of maladaptive functioning and its features. Also, the cross-sectional design of the study prevents from any inference on causality among the study variables; longitudinal studies could clarify how the development of personality is functioning through adolescence associated with different levels of mentalization. Finally, the current results need to be replicated in clinical samples as well as in larger and culturally diverse populations of adolescents.

In conclusion, our study adds further evidences to the discussion on emerging personality processes in adolescence (e.g., Fonagy & Bateman, 2008; Sharp et al., 2011; Fontana et al., 2018), suggesting that particularly mentalization and lower mentalization might be explained by the quality of the relationship with peers as well as the presence of aggression. Furthermore, the lack of mentalization, as might be explained by difficulties in the relations inside the family, might also be "covered" by a higher quality of the relationships with peers. Moreover, gender differences highlighted the importance of considering the way in which girls experience body changes during this stage of their personality development and how these can contribute to their difficulty not only in explaining their internal changes, but also others'. And considering boys, data suggest to acknowledge the

importance of the contribution of the relationships with peers as well as the quality of the relationship with their sexuality. Finally, these findings support further considerations for clinical practice during adolescence. Indeed, understanding which dimensions of emerging personality are associated with social cognitive abilities, as well as gender differences in these associations, is fundamental to structure practices and interventions properly.



TABLES AND FIGURES

**Table 1. Correlations (Pearson r) between the Adolescent Personality Structure Questionnaire (APS-Q) and the Movie for the Assessment of Social Cognition (MASC).**

	MASC			
	Mentalizing	Low mentalizing	No mentalizing	Hyper-mentalizing
<b>APS-Q</b>				
Sense of Self	-.06	-.01	.05	.04
Self-acceptance	.16**	-.10*	-.08	-.06
Investments and Goals	-.08	.10*	.11*	-.02
Sexuality	-.01	-.02	.07	.02
Aggression	-.26**	.18**	.17**	.03
Relationship with Family	-.01	-.03	-.03	-.01
Relationship with Friends	-.29**	.24**	.25**	.06

N= 529; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 2. Association between personality dimensions and mentalizing abilities (controlling for gender).**

	Mentalizing				
	$\beta$	$t$	$R^2$	$df$	$F$
			.24	8	20.91***
Sense of Self	-.03	-.69			
Self-acceptance	.07	1.71			
Investments and Goals	-1.16	-1.16			
Sexuality	-.12	-2.89**			
Aggression	-.13	-3.12**			
Relationship with Family	.04	.31			
Relationship with Friends	-.13	-3.11**			
Gender	.35	7.47***			

N= 528; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 3. Association between personality dimensions and low mentalizing abilities (controlling for age and gender).**

	Low mentalizing				
	$\beta$	$t$	$R^2$	$df$	$F$
			.14	9	9.33***
Sense of Self	-.04	-.80			
Self-acceptance	-.01	-.32			
Investments and Goals	.08	1.97*			
Sexuality	.03	.77			
Aggression	.10	2.26*			
Relationship with Family	-.08	-1.89			
Relationship with Friends	.15	3.24**			
Gender	-.21	-4.13***			
Age	.05	1.13			

N= 528; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 4. Association between personality dimensions and no mentalizing abilities (controlling for gender).**

	No mentalizing				
	$\beta$	$t$	$R^2$	$df$	$F$
			.13	8	10.21***
Sense of Self	-.21	-4.21			
Self-acceptance	.02	.41			
Investments and Goals	-.04	-.92*			
Sexuality	.09	2.20*			
Aggression	.11	2.47			
Relationship with Family	.08	1.85*			
Relationship with Friends	-.09	-2.06**			
Gender	-.21	-4.21***			

N= 528; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 5. Association between personality dimensions and hyper-mentalizing abilities (controlling for age).**

	Hyper-mentalizing				
	$\beta$	$t$	$R^2$	$df$	$F$
			.02	8	1.776
Sense of Self	.06	1.25			
Self-acceptance	-.08	-1.73			
Investments and Goals	-.02	-.53			
Sexuality	-.01	-.17			
Aggression	.02	.41			
Relationship with Family	-.01	-.36			
Relationship with Friends	.07	1.47			
Age	-.12	-2.57			

N= 529; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 6. Gender as a moderator of the relationship between personality dimensions and mentalizing abilities.**

	$\beta$	<i>t</i>	95% CI
<b>Gender</b>			
<i>Mentalization (MASC)</i>			
Self-acceptance (APS-Q)	-.19	-.38	[-1.20, .80]
Self-acceptance x Gender	1.23	1.99*	[.02, 2.44]
<i>Regression Model R<sup>2</sup> = .25***</i>			
<i>Conditional Effect on mentalization:</i>			
Males:	-.19	-.38	[-1.20, .80]
Females:	1.03	2.55*	[.23, 1.83]
<hr/>			
<i>Mentalization (MASC)</i>			
Relationship with Family (APS-Q)	1.03	2.17*	[.10, 1.96]
Relationship with Family x Gender	-.16	-1.99*	[-2.31, -.01]
<i>Regression Model R<sup>2</sup> = .25***</i>			
<i>Conditional Effect on mentalization:</i>			
Males:	1.03	2.17*	[.10, 1.96]
Females:	-.13	-.35	[-.89, .61]
<hr/>			
<i>Mentalization (MASC)</i>			
Relationship with Friends (APS-Q)	-2.04	-4.13***	[-3.01, -1.07]
Relationship with Friends x Gender	1.88	2.70**	[.51, 3.25]
<i>Regression Model R<sup>2</sup> = .25***</i>			
<i>Conditional Effect on mentalization:</i>			
Males:	-2.04	-4.13***	[-3.01, -1.07]
Females:	-.16	-.31	[-1.20, .86]
<hr/>			
<i>Mentalization (MASC)</i>			
Sexuality (APS-Q)	-2.2	-4.64***	[-3.20, -1.29]
Sexuality x Gender	2.12	3.60***	[.97, 3.28]
<i>Regression Model R<sup>2</sup> = .26***</i>			
<i>Conditional Effect on mentalization:</i>			
Males:	-2.24	-4.64***	[-3.20, -1.29]
Females:	-.12	-.33	[-.83, .59]

N= 529; \*\*\*  $p \leq .001$ ; \*\* $p \leq .01$ ; \* $p \leq .05$

*Note* APS-Q=Adolescent Personality Structure Questionnaire; MASC=Movie for the Assessment of Social Cognition; CI=Confidence Interval.

**Table 7. Gender as a moderator of the relationship between personality dimensions and low mentalizing abilities.**

	$\beta$	<i>t</i>	95% CI
<b>Gender</b>			
<i>Low mentalization (MASC)</i>			
Self-acceptance (APS-Q)	.40	1.46	[-.13, .93]
Self-acceptance x Gender	-.69	2.09*	[-1.3, -.04]
<i>Regression Model R<sup>2</sup> = .14***</i>			
<i>Conditional Effect on mentalization:</i>			
Males:	.40	1.46	[-.13, .93]
Females:	-.29	-1.35	[-.72, .13]
<hr/>			
<i>Low mentalization (MASC)</i>			
Relationship with Friends (APS-Q)	1.09	4.11***	[.57, 1.6]
Relationship with Friends x Gender	-.88	.09*	[-1.62, -.14]
<i>Regression Model R<sup>2</sup> = .14***</i>			
<i>Conditional Effect on mentalization:</i>			
Males:	1.09	4.11***	[.57, 1.61]
Females:	.20	3.37	[-.34, .76]

N= 529; \*\*\* p<.001; \*\*p<.01; \*p<.05

Note APS-Q=Adolescent Personality Structure Questionnaire; MASC=Movie for the Assessment of Social Cognition; CI=Confidence Interval.



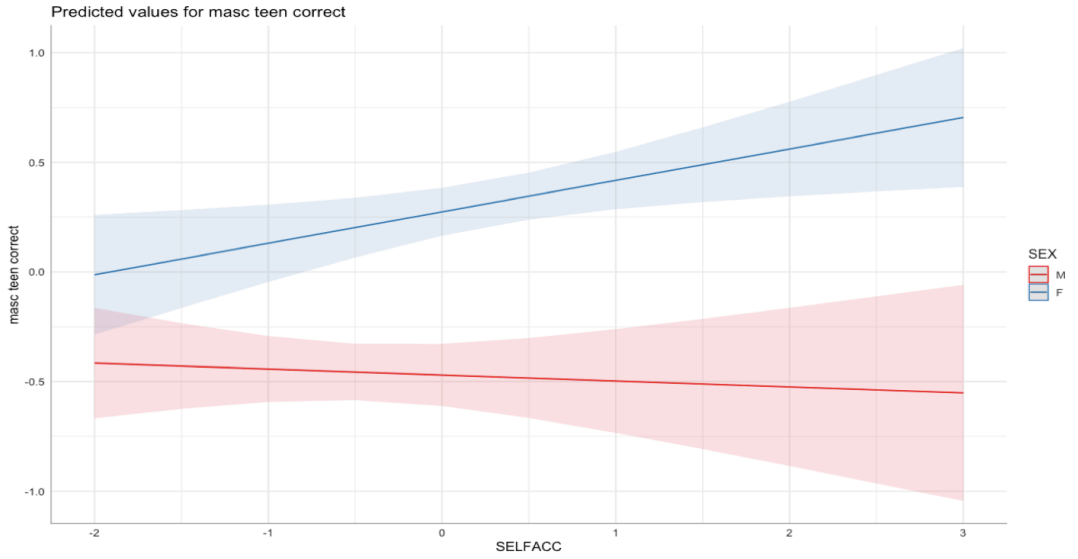
**Table 8. Gender as a moderator of the relationship between personality dimensions and no mentalizing abilities.**

	$\beta$	<i>t</i>	95% CI
<b>Gender</b>			
<i>No mentalization (MASC)</i>			
Self-acceptance (APS-Q)	.30	1.60	[-.07, .68]
Self-acceptance x Gender	-.67	-2.90*	[-1.13, -.21]
<i>Regression Model R<sup>2</sup> = .15</i>			
<i>Conditional Effect on mentalization:</i>			
Males:	.30	1.58	[-.07, .68]
Females:	-.37	-2.41*	[-.67, -.06]
<hr/>			
<i>No mentalization (MASC)</i>			
Relationship with Friends (APS-Q)	.87	4.65***	[.50, 1.23]
Relationship with Friends x Gender	-.85	-3.22*	[-1.36, -.33]
<i>Regression Model R<sup>2</sup> = .15</i>			
<i>Conditional Effect on mentalization:</i>			
Males:	.87	4.65***	[.50, 1.24]
Females:	.02	.10	[-.36, .41]
<hr/>			
<i>No mentalization (MASC)</i>			
Sexuality (APS-Q)	.66	3.58***	[.30, 1.02]
Sexuality x Gender	-.58	-2.60**	[-1.02, -.14]
<i>Regression Model R<sup>2</sup> = .15</i>			
<i>Conditional Effect on mentalization:</i>			
Males:	.66	3.59***	[.30, 1.02]
Females:	.07	.55	[-.20, .35]

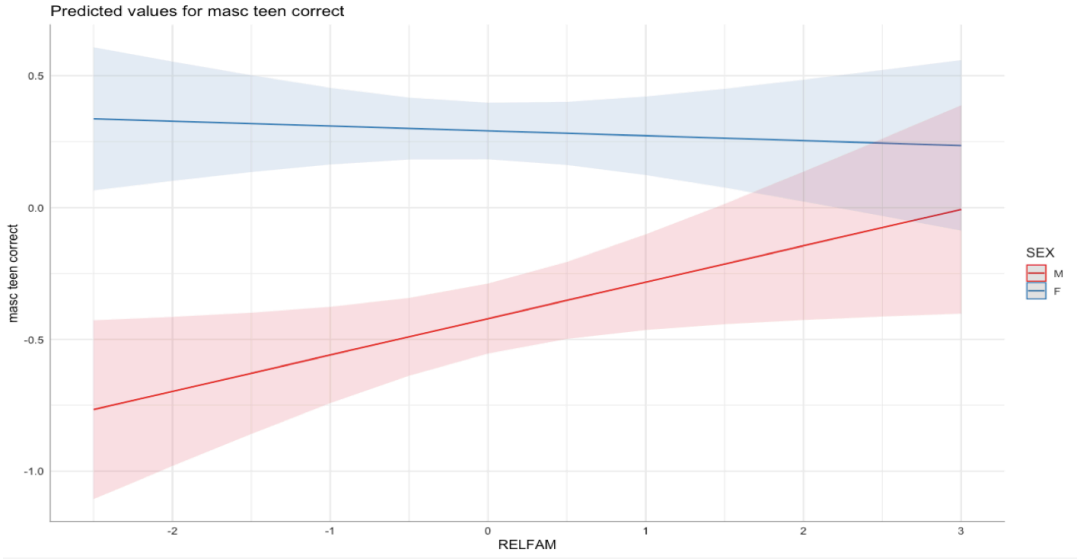
N= 529; \*\*\* p≤.001; \*\*p≤.01; \*p≤.05

Note APS-Q=Adolescent Personality Structure Questionnaire; MASC=Movie for the Assessment of Social Cognition; CI=Confidence Interval.

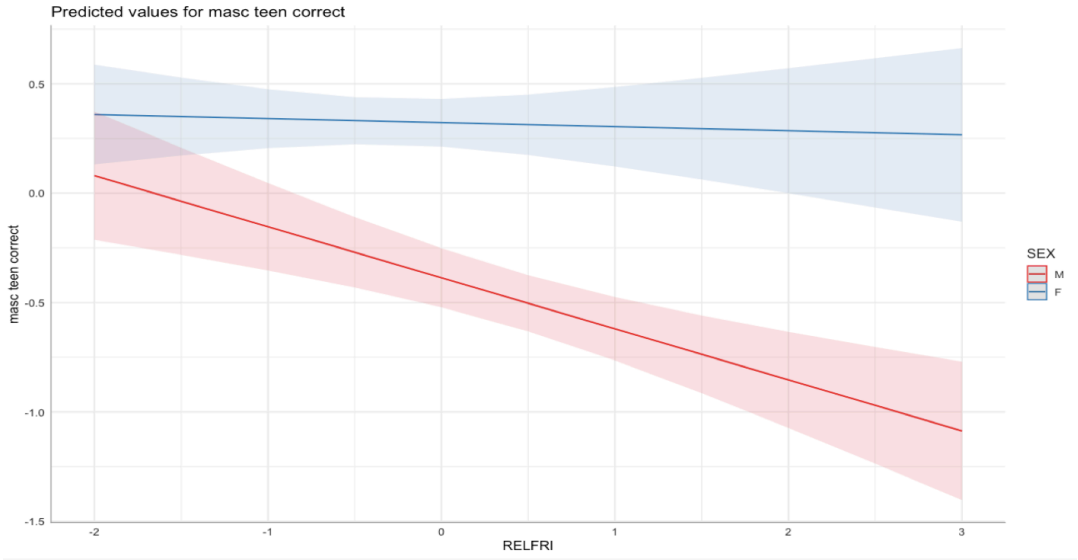
**Figure 1. Gender differences in the relationship between Self-acceptance and mentalization.**



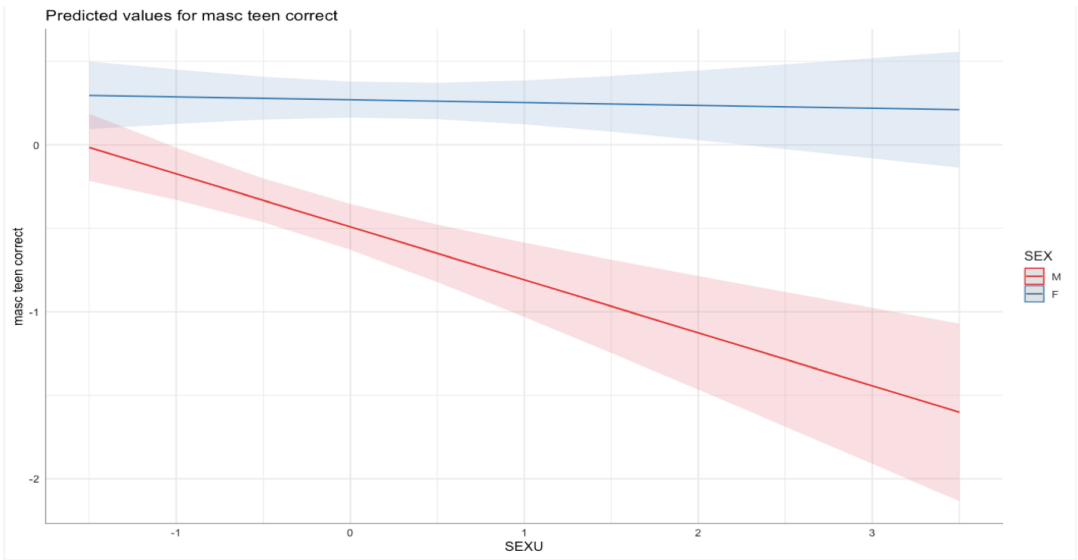
**Figure 2. Gender differences in the relationship between Relationship with Family and mentalization.**



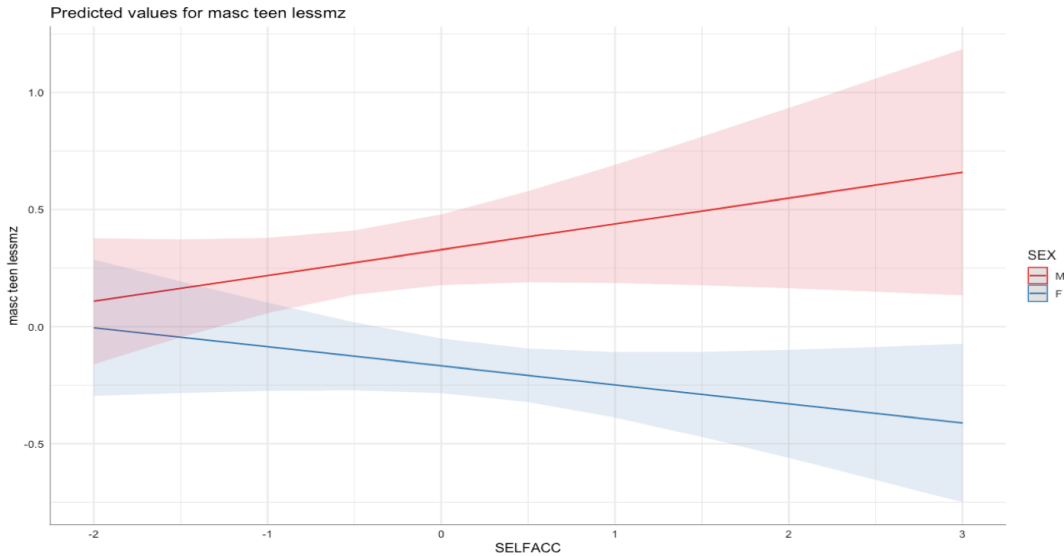
**Figure 3. Gender differences in the relationship between Relationship with Friends and mentalization.**



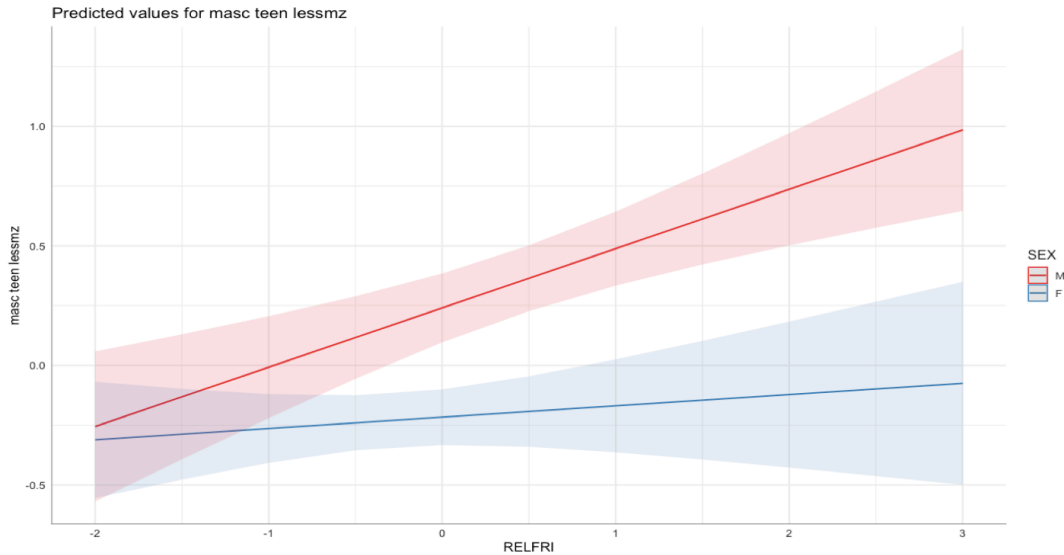
**Figure 4. Gender differences in the relationship between Sexuality and mentalization.**



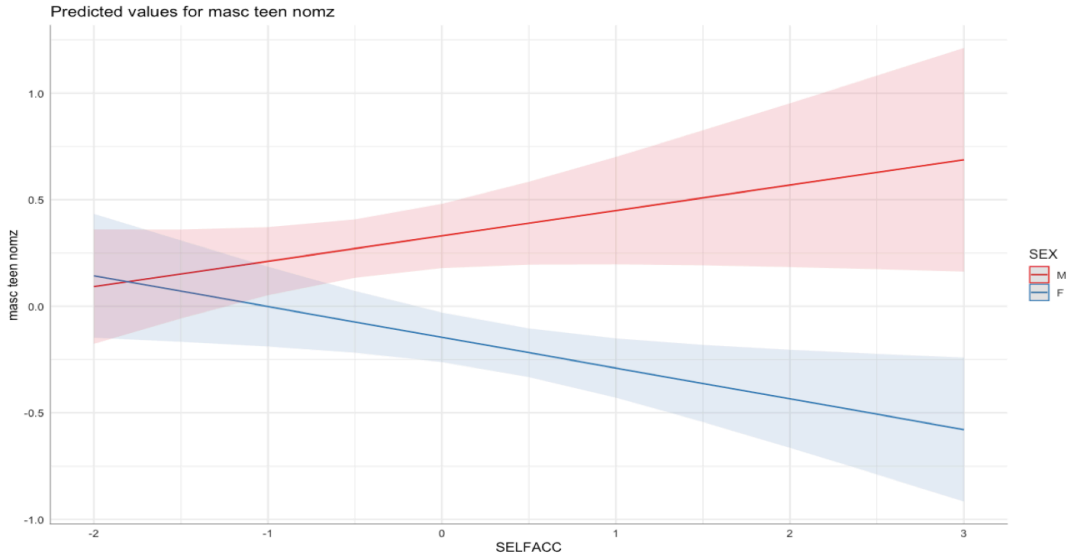
**Figure 5. Gender differences in the relationship between Self-acceptance and low-mentalization.**



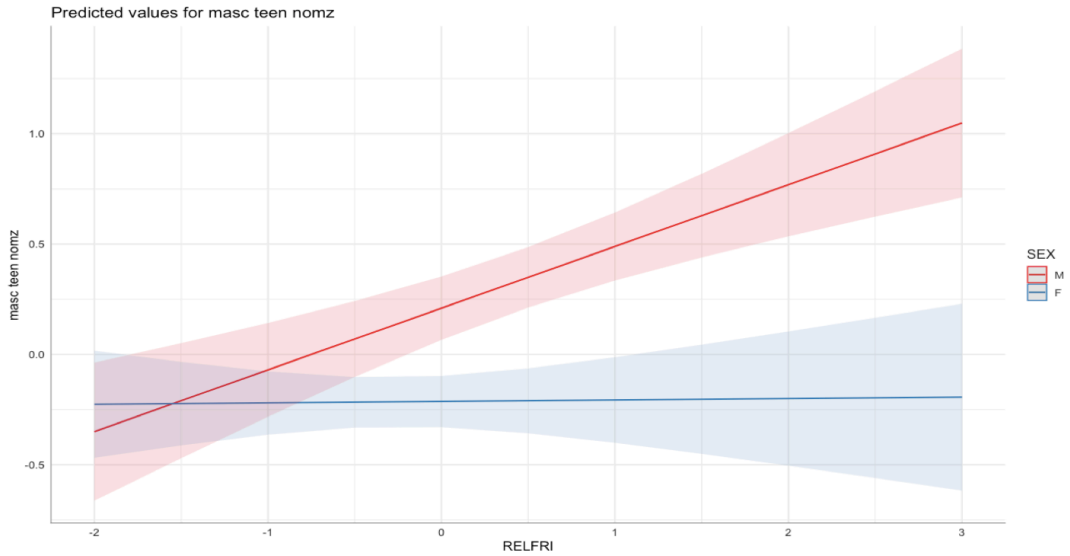
**Figure 6. Gender differences in the relationship between Relationship with Friends and low-mentalization.**



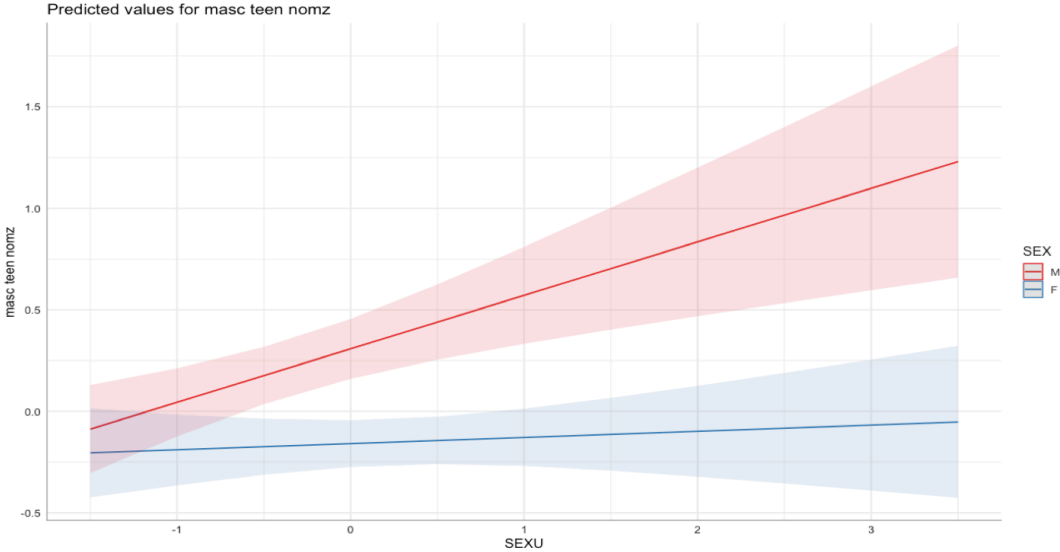
**Figure 7. Gender differences in the relationship between Self-acceptance and absence of mentalization.**



**Figure 8. Gender differences in the relationship between Relationship with Friends and absence of mentalization.**



**Figure 9. Gender differences in the relationship between Sexuality and absence of mentalization.**



## **CHAPTER 6**

# **DEVELOPMENTAL TRAJECTORIES**

*This final chapter further develops the discussion on developmental trajectories introduced in Chapter 1. More specifically, it presents preliminary data on the development of emerging personality structure in adolescence as conceptualized according to a dimensional approach, accounting for self and interpersonal impairments as well as aggression regulation. Moreover, acknowledging Sharp & Wall developmental model (2017), it explores the contribution of internalizing and externalizing problems in predicting personality pathology.*

### **STUDY 6**

#### **DEVELOPMENT OF PERSONALITY STRUCTURE IN ADOLESCENCE: PRELIMINARY CONSIDERATIONS**

##### **INTRODUCTION**

As highlighted in Chapter 1, it is crucial to study the development of personality structure not only emphasizing its specific dimensions and processes but also attempting to identify developmental trajectories that might not also implement theoretical models but as well inform clinical practice and interventions. In this sense, the CIC study provided a fundamental contribution to understanding how personality pathology might develop (Cohen et al., 2005), really acknowledging the need for more longitudinal studies.

All in all, research showed that personality pathology in adolescence includes the core features that actually constitute borderline pathology, meaning an impairment in integrating a stable and coherent sense of self, difficulties in interpersonal relationships as well as emotion dysregulation (e.g., Sharp et al., 2015). However, most of the research on the stability of personality pathology is based on categorical diagnostic frameworks and models that are grounded on maladaptive personality traits (De Clercq et al., 2014; De Fruyt & De Clercq, 2014).

The introduction of the AMPD marked a fundamental recognition of the importance of considering self and interpersonal impairment in personality functioning (Criterion A; APA, 2013) as the core of personality pathology. As we have seen, this approach recalls Kernberg's theoretical framework (Kernberg, O.F. 1984; 2016) of pathological personality organization.

According to literature, another important aspect that informs the exacerbation of PDs in adolescence is related to the influence of internalizing and externalizing problems (e.g. Stepp, Lazarus & Bird, 2016). Internalizing problems include pathological features such as anxiety, dissociation, depression, while externalizing problems comprise pathological features such as conduct disorder, substance use disorder, and attention-deficit hyperactivity disorder: research has demonstrated that both internalizing and externalizing problems represent significant predictors of PDs as well as remain comorbid to PDs throughout the development (Chanen et al., 2007; Belski et al., 2012; Conway, Hammen & Brennan, 2015).

Recently, Sharp & Walls (2017), summarized the results of research on the development of PDs in adolescence, suggesting a developmental psychopathology model that accounts for gender specificities in this development, as well as the contribution of internalizing and externalizing problems (Figure 1). This theoretical proposal includes as a core of personality pathology the Criterion A of the AMPD, thus an impairment in self (identity and self-direction) and interpersonal (empathy and intimacy) personality functioning. Furthermore, as it accounts for the general severity of the impairment (i.e., P factor; see Caspi et al., 2014), it considers the contribution of externalizing and internalizing problems as predictors of personality pathology. Also, the epidemiological factors, the developmental onset and persistence are considered. All in all, this model explicitly recognizes that only maladaptive traits cannot fully explain PDs, as maladaptive traits are *de facto* a part of the broader personality structure (Kernberg, O.F., 1984; Sharp et al., 2015).



## AIMS OF THE STUDY

Therefore, as there is a lack of studies that investigate the development of personality structure accounting for self and interpersonal aspects of personality functioning, this contribution aims at presenting preliminary data on the development of emerging personality structure in adolescence.

First, it aims at assessing specific associations between personality dimensions measured at baseline and after 12 months. Second, it aims at exploring the aforementioned developmental model, specifically testing which dimension of personality functioning might be predicted by externalizing and internalizing problems considering different gender groups.

## METHODS

### PARTICIPANTS

The study involved 200 participants, including 119 females (59.5%) and 81 males (40.5%) with an overall mean age of 16.11 ( $SD = 1.37$ ; range = 13-19) that were assessed for personality structure and psychological problems at baseline and after 12 months. All participants were recruited from middle and secondary schools in Northern Italy. The assessment was performed after receiving authorization from both parents of underage students and older students themselves. To ensure their anonymity, students received a unique reference code and completed self-report questionnaires via a private web link. The Institutional Review Board approved all materials and procedures.

### MEASURES

#### *Adolescent Personality Structure Questionnaire*

*(APS-Q; Benzi et al., under rev.)*

The APS-Q is a self-report measure consisting of 39 items that assesses personality structure in adolescence according to 7 dimensions: Sense of Self, Self-acceptance, Sexuality, Investments and Goals, Relationship with Family, Relationship with Friends, and Aggression. The Sense of Self dimension describes

the degree to which the teenager perceives him/herself as having characteristics, experiences and feelings that are stable and integrated over time (e.g. "I see myself in completely different ways depending on the situation", "I often feel emotions and I don't understand why"). The dimension Self-acceptance includes items related to the relationship with the body and the possible presence of shame (e.g. "I often think that my body is defective", "I often feel ashamed of myself"). The Investments and Goals dimension is linked to the presence and stability over time of significant ambitions and purposes (beyond study and work) (e.g., "I throw myself into hobbies and new interests and then abandon them"). The Aggression scale includes items related to the presence (or propensity) to acting out (or desire to) aggression (e.g., "Sometimes I am so angry I am afraid I can become violent", "I happened to beat someone because he/she deserved it"). Sexuality explores how much the teenager is comfortable with his/her sexual impulses/desires ("When I think about sex, I feel very embarrassed"). Finally, Relationship with Family and Relationship with Friends, ask the teenager to think about the most significant person inside (and outside) the family nucleus, so as to give an assessment of the quality of their relationships (e.g. "I don't want my family to know anything about my life", "I cannot imagine what [my best friend] might think about me").

For each item, the questionnaire asks participants to rate their level of agreement on a 5-point scale (1 = *Never true* to 5 = *Always true*). All the scales showed good internal consistency coefficients, with a value for the total score = .83 and  $\alpha$  values for the individual scales ranging from .65 (Relationship with Friends) to .84 (Aggression).

#### *Youth Self Report*

(YSR; Achenbach & Rescorla, 2001)

The Youth Self-Report (YSR) is a 112-item self-report measure that assesses general psychopathology. Each item is scored on a 3-point scale (0= "not true" to 2="very or often true"). The measure yields a Total Problems score of general pathological functioning and two comprehensive subscales of Externalizing behavior problems and Internalizing behavior problems. The Externalizing scale

encompasses the subscales of Aggressive behaviors and Rule-breaking behaviors. The Internalizing scale includes the Anxious/Depressed, Withdrawn/Depressed, and Somatic Complaints subscales. For the purpose of this study we utilized the Externalizing and Internalizing behaviors scales and the Thoughts problems scale (e.g., strange behaviors, hallucinatory experiences, sleeping less etc.). All scales showed good internal consistency ranging from  $\alpha = .73$  (Thought problems) to  $\alpha = .88$  (Internalizing problems).

### STATISTICAL ANALYSES

Statistical analyses were conducted using R code (R Core Team, 2017). General descriptive statistics were computed to describe the sociodemographic characteristics of the participants (R package *psych*). To test the associations between personality dimensions at baseline and after 12 months, we conducted multiple regression analyses (R package *stats*), controlling for the other personality dimensions as covariates.

Finally, to evaluate the contribution of externalizing and internalizing problems at baseline to the severity of personality functioning after 12 months, we conducted separate multiple regression analyses (R package *stats*) in the males and female subgroup.

## RESULTS

### ASSOCIATION BETWEEN PERSONALITY DIMENSIONS AT BASELINE AND AFTER 12 MONTHS

In order to test the associations between personality dimensions at baseline and personality dimensions after 12 months, we computed multiple regression models.

Pearson  $r$  correlations showed strong relationships between the same dimensions of personality measured as baseline and after 12 months (i.e., Sense of Self at T0 and Sense of Self at T1). Thus, the higher the impairment in all the dimensions measured at baseline, the higher the impairment in all the dimensions

measured after 12 months. Also, as expected other significant correlations were found (see Table 1 for summary).

Then, we included gender in four regression models (predicting Self-acceptance, Sexuality, Aggression and Relationship with friends) as we found significant differences between males and females in the dimensions of personality functioning. However, we did not include gender in three models (predicting Sense of Self, Investments and Goals, Relationship with Family) as we found no significant differences between males and females in the dimensions of personality functioning. We included age in two models (predicting Self-acceptance and Sexuality) as there were significant correlations between age and the dimensions of personality functioning. We did not include age in five models (predicting Sense of Self, Investments and Goals, Aggression, Relationship with Friends and Relationship with Family) as there were no significant correlations between age and dimensions of personality functioning.

Regression model for Sense of Self after 12 months (Table 2) showed that a higher impairment in the Sense of Self dimension predicted a higher impairment in the same dimension after 12 months. Also, Aggression, Relationship with Family and Relationship with Friends, contributed significantly in predicting the level of impairment after 12 months.

Regression model for Self-acceptance after 12 months (Table 3) showed that a higher impairment in the Self-acceptance dimension predicted a higher impairment in the same dimension after 12 months. Also, Sexuality contributed significantly in predicting the level of impairment after 12 months.

Regression model for Investments and goals after 12 months (Table 4) showed that a higher impairment in the Investments and goals dimension predicted a higher impairment in the same dimension after 12 months. No other dimensions contributed significantly in predicting the level of impairment after 12 months.

Regression model for Sexuality after 12 months (Table 5) showed that a higher impairment in the Sexuality dimension predicted a higher impairment in the

same dimension after 12 months. Also, Relationship with Friends contributed significantly in predicting the level of impairment after 12 months.

Regression model for Aggression after 12 months (Table 6) showed that a higher impairment in the Aggression dimension predicted a higher impairment in the same dimension after 12 months. No other dimensions contributed significantly in predicting the level of impairment after 12 months.

Regression model for Relationship with Family after 12 months (Table 7) showed that a higher impairment in the Relationship with Family dimension predicted a higher impairment in the same dimension after 12 months. No other dimensions contributed significantly in predicting the level of impairment after 12 months.

Regression model for Relationship with Friends after 12 months (Table 8) showed that a higher impairment in the Relationship with Friends dimension predicted a higher impairment in the same dimension after 12 months. Also, Aggression contributed significantly in predicting the level of impairment after 12 months.

#### CONTRIBUTIONS OF EXTERNALIZING AND INTERNALIZING PROBLEMS TO SEVERITY OF PERSONALITY FUNCTIONING AFTER 12 MONTHS IN MALES AND FEMALES SUB-GROUPS

In order to test our second hypothesis, we the associations between externalizing and internalizing problems at baseline and personality dimensions after 12 months, we computed a multiple regression model on males and females subsamples. Pearson *r* correlations showed significant relationships between internalizing problems and Sense of Self, Self-acceptance, Investments and Goals and Relationship with Family. Thus, on the overall sample, the higher the level of internalizing problems at baseline, the higher the level these personality dimensions after 12 months. Also, Pearson *r* correlations showed significant relationships between externalizing problems and Sense of Self, Self-acceptance, Sexuality, Aggression and Relationship with Family. Thus, on the overall sample, the higher

the level of externalizing problems at baseline, the higher the level of impairment in Sense of Self, Aggression and Relationship with Family dimensions after 12 months. Furthermore, on the overall sample, the higher the level of externalizing problems at baseline, the lower the level of impairment Self-acceptance and Sexuality dimensions after 12 months.

In order to test specific pathways for gender, we conducted regression models on gender sub-groups. We included age in two models (predicting Self-acceptance and Sexuality) in the females subsample as there were significant correlations between age and the dimensions of personality functioning. We did not include age in five models (predicting Sense of Self, Investments and Goals, Aggression, Relationship with Friends and Relationship with Family) in the females subsample and in the males subsample as there were no significant correlations between age and dimensions of personality functioning.

Considering the males subsample, only Self-acceptance after 12 months was predicted both by externalizing and internalizing problems at baseline. More specifically, the higher the level of externalizing problems, the lower the level of impairment in Self-acceptance after 12 months. Also, the higher the level of internalizing problems, the higher the level of impairment in Self-acceptance after 12 months.

Considering the females subsample, externalizing problems at baseline predicted Sense of Self, Sexuality, Aggression, and Relationship with Family. Thus, the higher the presence of externalizing problems, the higher the impairment in Sense of Self, Aggression and Relationship with Family after 12 months. Also, the higher the presence of externalizing problems, the lower the impairment in Sexuality after 12 months. Also internalizing problems at baseline predicted Sense of Self, Self-acceptance, Investments and Goals, Sexuality, Relationship with Friends and Relationship with Family. Thus, the higher the presence of externalizing problems, the higher the impairment in these dimensions after 12 months.

## DISCUSSION

This study aimed at assessing specific associations between emerging personality dimensions measured at baseline and after 12 months. Data suggest that each personality dimension, when considered individually, is predicted to a greater extent by its level of severity at baseline. However, at the same time results have shown that for some dimensions we ought to acknowledge the contribution of other specific dimensions of personality functioning.

First, an impairment in the Sense of Self is in fact also explained by the contribution of aggressive aspects and a poorer quality of significant relationships within the family and with friends. These results are in line with the literature that shows that identity integration is closely linked to the presence of aggressive aspects (e.g., Kernberg, O.F., 1978; Lenzenweger et al., 2001). Equally, much of the conflict that characterizes this developmental phase involves significant interpersonal relationships (e.g., Ammaniti et al., 2012). Another crucial dimension the constitutes personality structure, is the acceptance of body changes, that understandably was also predicted by how comfortable the individual was with his/her sexual impulses. In turn, the dimension of sexuality was influenced by the contribution of the quality of the relationship with friends. Once again, the possibility of feeling "integrated" within the group of peers is an important factor in predicting the quality of the relationship with one's own sexual (and romantic) impulses. Finally, the quality of relationships with friends was also predicted by the individual's ability to regulate their own aggressive impulses.

Second, this contribution aimed at presenting preliminary data on the exploration of the developmental model of personality pathology proposed by Sharp and Wall (2017), specifically testing which dimensions of personality functioning might be predicted by externalizing and internalizing problems considering different gender groups.

It is interesting to note that, studying the group of males, internalizing and externalizing problems did not predict the level of impairment of all the personality dimensions at 12 months, except for the aspects related to the presence of shame as

well as with being at ease with body changes (Self-acceptance dimension). Therefore preliminary data seem to suggest that among males the presence of anxious or depressive symptoms as well as uncontrolled behaviors might not be sufficient to predict the level of impairment in personality functioning. This might suggest that to further explore the joint contribution/interplay of personality structure and psychological problems. On the contrary, the individual experience of physical changes might be actually “closer” to psychopathological symptomatic manifestations.

On the contrary, when considering females, the contribution of internalizing and externalizing problems seems to have a much higher explanatory contribution, accounting for almost all of the dimensions of personality. In particular, the presence of internalizing problems predicted especially features related to a self and interpersonal impairment, contributing to the level of severity of the integration of the sense of self and the acceptance of body changes as well as to the quality of relationships with significant figures within the family and among peers. The presence of externalizing problems, on the other hand, explained the presence of a higher level of aggression as well as an impairment in the quality of the relationships with family members. Finally, noteworthy data emerged in the prediction of the level of impairment in the dimension of sexuality: in fact, the contribution of internalizing problems seems to unfold inversely than the one of externalizing problems.

The results of this contribution should be understood in the context of its limitations. First, as the longitudinal design represents a strength of the study, it would be important to increase the sample size as to be able to test multi-level interactions accounting for both within and between random and fixed differences. Second, personality dimensions and internalizing and externalizing problems were evaluated with self-report measures. Future research should also employ clinical interviews to assess more in-depth the level of maladaptive functioning and as well as psychological problems. Finally, the current results need to be replicated in

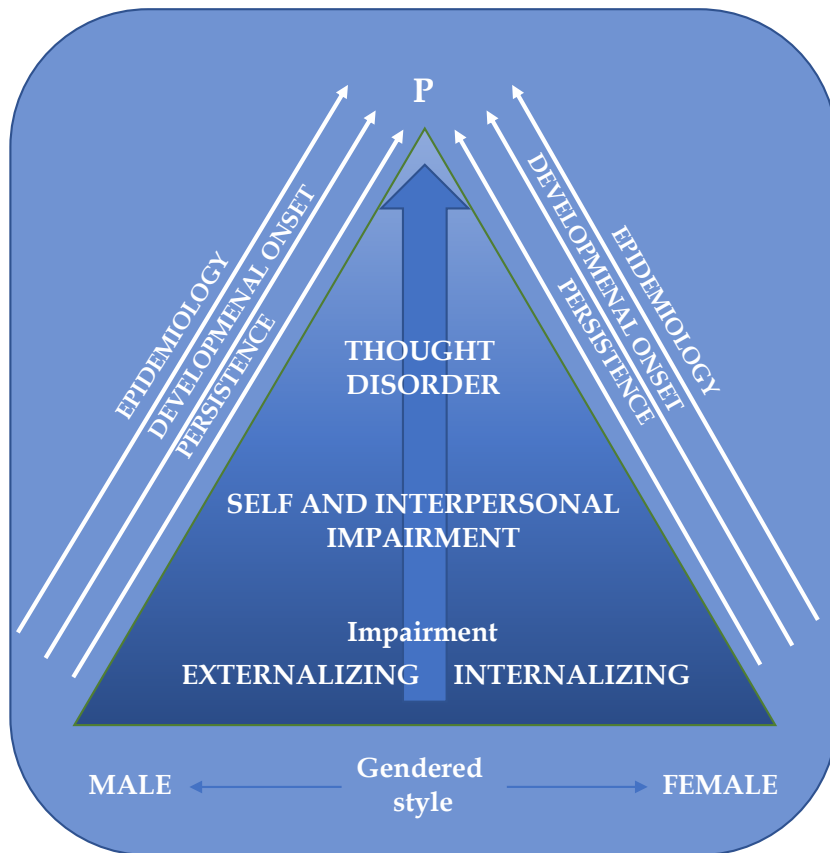


clinical samples as well as in larger and culturally diverse populations of adolescents.

In conclusion, this study adds preliminary considerations to the current debate on developmental trajectories of personality pathology in adolescence (e.g., Cicchetti & Crick, 2009; Sharp & Wall, 2017). First, it suggests that (mal)adaptive personality develops “as a whole”: indeed in order to grasp how specific personality dimensions unfold, it is also important to acknowledge the joint contribution of the severity of other dimensions. Second, preliminary data indicate that the predictive power of externalizing and internalizing symptoms might foster different developmental pathways in accounting for personality pathology amongst boys and girls. Ultimately, these findings support further reflections for clinical practice and intervention, highlighting the importance of considering the specific contribution of personality dimensions as well as differentiating developmental trajectories amongst gender groups.

TABLES AND FIGURES

Figure 1. Developmental model of personality pathology in adolescence (adapted from Sharp & Wall, 2017)



**Table 1. Correlations (Pearson r) between the Adolescent Personality Structure Questionnaire (APS-Q) dimensions and Youth Self Report (YSR) internalizing and externalizing problems measured at baseline and APS-Q dimensions measured after 12 months.**

APS-Q baseline	APS-Q after 12 months						
	Sense of Self T1	Self-acceptance T1	Investments and Goals T1	Sexuality T1	Aggression T1	Relationship with Family T1	Relationship with friends T1
Sense of Self T0	.52**	.22**	.17*	.04	.18**	.18*	.18**
Self-acceptance T0	.20**	.71**	.23**	.16*	-.11	.12	-.02
Investments and Goals T0	.16*	.17*	.71**	-.07	.19**	.28**	.14
Sexuality T0	.03	.34**	-.07	.69**	-.17*	-.09	-.02
Aggression T0	.32**	-.06	.12	-.13	.67**	.20**	.35**
Relationship T0 with Family T0	.25**	.14	.29**	-.09	.11	.77**	.11
Relationship with Friends T0	.25**	.06	.18*	.10	.23**	.15*	.45**
Internalizing problems	.22**	.43**	.18*	.13	.04	.20**	.12
Externalizing problems	.16*	-.19**	.12	-.29**	.42**	.29**	.10

N= 200; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 2. Associations between personality dimensions at baseline and Sense of Self after 12 months**

	Sense of Self (12 months)				
	$\beta$	$t$	$R^2$	$df$	$F$
			.33	7	14.09***
Sense of Self	.37	6.20***			
Self-acceptance	.02	.56			
Investments and Goals	-.05	-.99			
Sexuality	.02	.56			
Aggression	.12	2.23*			
Relationship with Family	.10	2.28*			
Relationship with Friends	.10	2.00*			

Note. N= 200; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 3. Associations between personality dimensions at baseline and Self-acceptance after 12 months (controlling for gender and age)**

	Self-acceptance (12 months)				
	$\beta$	$t$	$R^2$	$df$	$F$
			.56	9	27.51***
Sense of Self	-.04	-.77			
Self-acceptance	.70	11.91***			
Investments and Goals	-.03	-.58			
Sexuality	.13	2.36*			
Aggression	.02	.46			
Relationship with Family	.01	.18			
Relationship with Friends	.06	1.20			
Gender	-.00	-.01			
Age	-.07	-1.38			

Note. N= 200; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 4. Associations between personality dimensions at baseline and Investments and Goals after 12 months**

	Investments and Goals (12 months)				
	$\beta$	$t$	$R^2$	$df$	$F$
			.51	7	29.16***
Sense of Self	-.02	-.37			
Self-acceptance	.03	.68			
Investments and Goals	.64	12.05***			
Sexuality	-.04	-1.09			
Aggression	-.04	-.79			
Relationship with Family	.05	1.31			
Relationship with Friends	.03	.76			

*Note.* N= 200; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 5. Associations between personality dimensions at baseline and Sexuality after 12 months (controlling for gender and age)**

	Sexuality (12 months)				
	$\beta$	$t$	$R^2$	$df$	$F$
			.50	9	21.64***
Sense of Self	-.02	-.36			
Self-acceptance	.00	.00			
Investments and Goals	-.07	-1.18			
Sexuality	.69	11.65***			
Aggression	-.004	-.07			
Relationship with Family	-.00	-.09			
Relationship with Friends	.13	2.49*			
Gender	-.01	-.23			
Age	-.02	-.32			

Note. N= 200; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 6. Associations between personality dimensions at baseline and Aggression after 12 months (controlling for gender)**

	Aggression (12 months)				
	$\beta$	$t$	$R^2$	$df$	$F$
			.50	8	23.99***
Sense of Self	-.03	-.53			
Self-acceptance	-.00	-.07			
Investments and Goals	.07	1.28			
Sexuality	.01	.27			
Aggression	.61	10.36***			
Relationship with Family	-.04	-.83			
Relationship with Friends	.07	1.33			
Gender	-.19	-3.10**			

Note. N= 200; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$



**Table 7. Associations between personality dimensions at baseline and Relationship with Family after 12 months**

	Relationship with Family (12 months)			
	$\beta$	$t$	$R^2$	$F$
			.57	7
				36.47***
Sense of Self	.04	.74		
Self-acceptance	-.05	-1.12		
Investments and Goals	.05	.86		
Sexuality	.00	.11		
Aggression	.01	.22		
Relationship with Family	.67	14.19***		
Relationship with Friends	.05	.96		

Note. N= 200; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 8. Associations between personality dimensions at baseline and Relationship with Friends after 12 months (controlling for gender)**

	Relationship with Friends (12 months)			
	$\beta$	$t$	$R^2$	$F$
			.30	7
				10.24***
Sense of Self	.02	.28		
Self-acceptance	.01	.21		
Investments and Goals	.00	.03		
Sexuality	.08	1.29		
Aggression	.23	3.36**		
Relationship with Family	.01	.22		
Relationship with Friends	.36	5.55***		
Gender	-.18	-2.43		

*Note.* N= 200; \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 9. Summary of the contributions of externalizing and internalizing problems to severity of personality functioning after 12 months (Males subgroup, n = 81)**

	$\beta$	$t$	$R^2$	$df$	$F$
~Sense of Self			.03	2	1.33
Internalizing problems	.19	1.63			
Externalizing problems	-.05	-.50			
~Self-acceptance			.15	2	6.80**
Internalizing problems	.34	3.18**			
Externalizing problems	-.30	-2.73**			
~Investments and Goals			.00	2	.02
Internalizing problems	-.01	-.11			
Externalizing problems	.02	.20			
~Sexuality			.04	2	1.88
Internalizing problems	.22	1.94			
Externalizing problems	-.06	-.52			
~Aggression			.04	2	1.65
Internalizing problems	-.07	-.60			
Externalizing problems	.21	1.81			
~Relationship with Family			.05	2	2.08
Internalizing problems	-.03	-.32			
Externalizing problems	.23	2.02			
~ Relationship with Friends			.06	2	.37
Internalizing problems	.09	.78			
Externalizing problems	-.06	-.57			

Note. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

**Table 10. Summary of the contributions of externalizing and internalizing problems to severity of personality functioning after 12 months (Females subgroup, n = 119)**

	$\beta$	$t$	$R^2$	$df$	$F$
~Sense of Self			.14	2	9.63***
Internalizing problems	.20	2.29*			
Externalizing problems	.27	.27*			
~Self-acceptance			.30	3	16.92***
Internalizing problems	.52	6.50***			
Externalizing problems	-.14	-1.78			
Age	-.23	-.30**			
~Investments and Goals			.10	2	7.06**
Internalizing problems	.25	2.78**			
Externalizing problems	.16	1.75			
~Sexuality			.31	3	17.21***
Internalizing problems	.18	2.27*			
Externalizing problems	-.48	-6.01***			
Age	-.26	-3.43**			
~Aggression			.30	2	24.73***
Internalizing problems	.09	1.17			
Externalizing problems	.51	6.42***			
~Relationship with Family			.17	2	12.41***
Internalizing problems	.23	2.65**			
Externalizing problems	.30	3.42**			
~ Relationship with Friends			.07	2	3.83*
Internalizing problems	.25	2.67**			
Externalizing problems	-.00	.04			

Note. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$

## CONCLUSIONS

The general aim of this dissertation was fostering an in-depth exploration of features, processes and developmental trajectories that constitute emerging personality structure in adolescence. Moreover, it aimed at acknowledging recent theoretical reflections on the importance of adopting a dimensional approach to personality pathology that considered not only constellations of symptoms but also the degree of impairment in self and interpersonal related aspects.

All in all, to summarize the results of this contribution, we should focus on three main points.

### MALADAPTIVE PERSONALITY FUNCTIONING ACCOUNTS FOR PERSONALITY PATHOLOGY

*(e.g., Wygant et al., 2016; Boland et al., 2018; Sleep et al., 2018)*

The introduction of new diagnostic classifications such as the AMPD in DSM-5 and the upcoming ICD-11, strengthened the importance of a dimensional approach to personality pathology although leaving an open debate on the interplay/overlapping of maladaptive personality functioning and maladaptive personality traits.

Study 1 (“Maladaptive personality traits and psychological distress in adolescence: the moderating role of personality functioning”) aimed at disentangling this relationship. Thus, it provided evidence on the contribution of the severity of personality functioning in the relationship between maladaptive traits and psychological distress. Moreover, it showed that impairment in self and interpersonal-related areas of functioning increasingly enhances the effect of maladaptive traits on psychological distress and that the specific contribution of functional impairment might be crucial to consider.

Study 2 (“Maladaptive personality functioning and Non-Suicidal Self Injury in adolescence”) further explored the improvements of a dimensional approach examining the associations between personality pathology and NSSI. Hence, it

suggested that intrapersonal features of maladaptive personality functioning (as individual fragilities of the sense of self fostering difficulties in regulating internal emotional states), rather than interpersonal ones, contribute significantly to the presence of NSSI during adolescence.

### PERSONALITY IS STRUCTURE(D)

*(e.g., Kernberg, P.F., et al., 2000; Ensink et al., 2015, Kernberg, O.F., 2016)*

Adolescence, upheld as an essential developmental phase for personality structuring, represents an additional challenge for the current debate on the conceptualization of personality pathology. Therefore, clinicians and researchers must not only formulate sufficiently sensitive diagnostic systems to describe (or potentially make sense of) its many phenotypes. They must also search for a shared vision of the dimensions that, when impaired, can become significant prodromes of PDs.

Acknowledging the importance of adopting sensible and valid measures to assess emerging personality pathology that account for the crucial dimensions of personality in adolescence, Study 3 (“Development of the Adolescent Personality Structure Questionnaire - APS-Q”), provided preliminary data supporting the validity of the APS-Q as a reliable and stable instrument to investigate personality functioning during this developmental phase. Self-related dimensions such as Sense of Self, Self-acceptance, Investments and Goals, as well as interpersonal related aspects such as the quality of Relationship with Family and with Friends, proved to be significant constituents of personality emerging personality structure. Moreover, more affect-related dimensions such as Sexuality and Aggression contributed to describe how personality is structured in adolescence.

Moreover, Study 4 (“Emerging personality structure in adolescence: associations with borderline and narcissistic features”), in addition to confirming previous data on the APS-Q dimensions, highlighted specificities of personality functioning in the relationship with maladaptive personality features. Self-Related dimensions of personality functioning were strongly associated with both

borderline aspects and narcissistic vulnerability, supporting that an impairment in identity integration and stability is at the basis of borderline pathology.

### PERSONALITY DEVELOPS AS “A WHOLE”

(*e.g., Fonagy & Bateman, 2008; Cicchetti & Toth, 2014; Sharp & Wall, 2017*)

Although an object relations framework allows to reliably identify the specific dimensions that inform personality structure in adolescence, the growing number of contributions that come from different theoretical conceptualizations is a valuable opportunity to integrate visions and perspectives. Furthermore, personality dimensions can be further understood accounting for their mutual interplay as well as associations with other psychological processes.

Thus, Study 5 (“Relationship with peers, self-acceptance and gender differences: exploring the associations between personality structure in adolescence and mentalizing abilities”), adds further evidence on the associations between emerging personality and mentalizing abilities. Indeed, it suggests that the quality of the relationship with peers as well as aggression might contribute to the explanation of different levels of mentalization. Also, on the one hand, it highlights how the way in which girls experience body changes might affect not only a difficulty in explaining their own mental states, but also others’. On the other, considering boys, it emphasized that a fundamental contribution to mentalizing abilities might be the quality of their relationships with peers as well as the quality of the relationship with their sexuality.

Finally, Study 6 (“Development of personality structure in adolescence: preliminary considerations”), adds an initial contribution to the contemporary debate on the developmental trajectories of personality pathology in adolescence. All in all, it argues that (mal)adaptive personality develops “as a whole”: indeed in order to understand how specific personality dimensions unfold, it is also important to acknowledge the joint contribution of the severity of other dimensions. Furthermore, it suggests that the influence of externalizing and internalizing

symptoms might promote different developmental pathways amongst boys and girls.

### RESEARCH ON ADOLESCENCE “GROWS UP”

(e.g. *Clarkin et al., 2015; Powers & Casey, 2015; Sharp et al., 2015*)

Although this dissertation addresses some of the blistering themes of emerging personality structure in adolescence, researchers are facing a wide-ranging field for future developments.

One of the fundamental reasons that led to questioning the classic categorical system for the evaluation of PDs were the numerous evidences that came from clinical practice. To formulate a conceptual framework, it is essential to continue to walk back and forth the subtle yet vital line that connects research and clinical work. For this reason, to investigate how personality develops in adolescence, accounting for a dimensional approach is, although fundamental, just a starting line.

First, if on the one hand this contribution fosters the importance for clinical practice and interventions to take into account how the sense of self, the quality of relationships and the ability to regulate impulses are structured in adolescence, on the other hand it opens up to the need for further explorations, such as the interplay with different constructs and outcomes (i.e., mentalization, psychological difficulties, comorbid pathologies).

Second, research might also benefit from different methodological approaches such as the investigation of how personality functioning manifests itself on a daily basis, thus combining a more detailed kind of observation of daily dynamics (i.e., ecological momentary assessments techniques).

Finally, the exploration of the so-called "adolescent crisis" is an area where, beyond the contributions on the aspects that most directly result from pubertal changes, the identification of the subthreshold personality pathology remains an unknown map to be drawn.



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