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Thematic Article

From Attention Deficit/Hyperactivity Disorder to Borderline Personality Disorder: A Developmental Integrated Perspective

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Abstract

Adult patients with Borderline Personality Disorder (BPD) show about 40 - 60% of Attention Deficit/Hyperactivity Disorder (ADHD) diagnosis in infancy. Moreover, it has been found that BPD is frequently comorbid with ADHD in late adolescence and adulthood. ADHD tends to persist while aging in itself, especially if particularly severe, pervasive and not treated with a pharmacological approach. Therefore, ADHD influences the development of cognitive and metacognitive functions and the stabilization of proper interpersonal relationships, which are crucial to the development of personality. A pathoplastic perspective enlightens ADHD as a BPD-moderator for predisposed subjects. This paper aims to give some suggestions about the way in which a bio-psycho-social point of view could explain the high prevalence of previous ADHD in BPD subjects. A complex interpretation, integrating the findings from neuroscience with the psychosocial aspects underlined by attachment and psychodynamic perspectives will be presented, as well as clinical implications.

Keywords: *ADHD; BPD; Attachment; Neuropsychology; Psychoanalysis; Developmental Perspective*

Introduction

Borderline Personality Disorder (BPD) is commonly defined as a pervasive pattern of impulsivity and instability in interpersonal relationships, affects and self-image [1]. It is the most prevalent personality disorder diagnosis (30 - 60%; [1]) and it is frequently found in comorbidity with other mental diseases, like depression, minor psychotic symptoms, and substance abuse [1]. Studies which have been taken within BPD inpatients have also retrospectively found a percentage between 59.5% and 41.5% of Attention Deficit/Hyperactivity Disorder (ADHD) symptoms in subjects' childhood, thus suggesting a connection between the two psychopathologies [2,3].

Developmental psychopathology, which highlights the continuities between mental disorders through life, pointed out how ADHD tends to persist while aging, especially if particularly severe, pervasive and not treated with a pharmacological approach [4]. Moreover, a model based on a pathoplastic relationship describes ADHD as a critical developmental accident leading to personality disorders, in particular BPD [5,6]. This model shows how neurocognitive deficits -like ADHD- could prevent the parents (especially when they are primarily involved in stressing situations or suffer from other pathologies) from recognizing and giving an adequate response to the infant's needs, which remain unsatisfied and emotionally distressed [7].

Hughes [8] defined emotion regulation as both an individual and interpersonal process, emergent from attachment relationships and biologically carried out by prefrontal circuits. The caregiver-child relationship and the consequent emotional and behavioral management are stored as an Internal Working Model [9], connecting dorsomedial prefrontal cortex, amygdala and hippocampus [10-12]. These connections are reinforced through the dopamine and oxytocin supply, mediated by endogen opioids in secure attachment relationships [13-17]. Secure interpersonal relationships promote co-regulation, which reduces the depletion of individual prefrontal metabolic resources that permit, among the others, a proper functioning of attention, problem solving, cognitive planning, and the development of an appropriate social life [13,14,17,19-22].

According to the pathoplastic relationship model, it could be hypothesized an impairment of relational adjustment and common neurological dysfunctions both in ADHD and BPD [23]. Actually, the proposed model points out how the difficult interpersonal relationships described above frequently lead from the development of an insecure attachment to a particular subtype of BPD characterized by a large metacognitive impairment, frequent use of immature defense mechanisms, affect dysregulation (due to sexual and psychological abuse), and cognitive-perceptive symptoms [7,24,25].

The need of a complex interpretation, integrating the findings from neuroscience with the psychosocial aspects, underlined by attachment and psychodynamic perspectives, might be better developed; this paper aims to give some suggestions about the way in which a bio-psycho-social point of view could explain the high prevalence of ADHD in BPD subjects.

BPD through an integrated model

BPD individuals show constitutional dysfunctions in dopaminergic and oxytocinergic neurological systems, which predispose them to high impulsivity, emotional instability and poor interpersonal functioning [26-28]. Endogen opioids also present deficiencies in these subjects, and prefrontal functioning consequently results to be impaired [28]. Given the role of these neurobiological features in making and maintaining good social bonds, especially through a good emotion regulation [8,28], the dysfunctions presented could lead to an emotional dysregulated subject with a problematic social functioning [8,13,14,19]. Moreover, the neuropsychology of BPD enlightens attentional and memory deficits, poor inhibitory control and low emotion processing [24].

Parents of BPDs have been found to share borderline characteristics [29]. Moreover, Fonagy [10] and Strateharn [12] both pointed to dopaminergic and oxytocinergic dysfunctions in neglecting caregivers of subjects diagnosed as BPD in after years. Taken together, these findings could account for a pathological development of the child, which could not benefit of a proper responsivity to his needs [10]. Not surprisingly, BPD subjects have been living in a deficient, neglecting and abusing attachment environment since infancy [10,30].

Attachment relationship consequently encounters biological and interpersonal difficulties in its formation, as family environment, endogen opioids, dopamine and oxytocin roles in forming social bonds identified [10,29]. This motivates the fearful or unresolved pattern -the first combining both anxiety and avoidant features, the second in respect with loss and abuse- found in research on BPD's attachment [31-33]. These characteristics lead to the development of a fragile Self, which uses primitive defense mechanisms such as acting, splitting, projective identification, denial, identification with the aggressor, devaluation and projection to face affects [34-36]. Consequently, the symbolic function, which works to integrate conflicting affects and representations, fades, since those have been neglected in early interactions [37].

BPD subjects are then unfit to put up with loneliness and separations, show social hyper-reactivity, are unable to manage any depressive distress and to tolerate grief work [38]; however, they remain substantially untrusty and afraid of other's intrusion, which enhances their identity problems, probably due to the abuses experienced in early relationships [10,39-46]. Therefore, these inconsistent characteristics of borderline relationships expose BPDs to peer rejection and isolation, promoting self-destructive behaviors and suicidal attempts, typically after a loss [47-49].

ADHD through an integrated model

The research in neuroscience shows how children with ADHD are constitutionally dysregulated in dopaminergic and noradrenergic supplies [50,51]. These imbalances lead to high responsivity to environmental stimuli, due to the fast depletion of prefrontal resources [52,53]. Some researcher claims that these features could lead the subjects to hyperactivity and impulsivity to better control the randomized and flowing course of perceived events, otherwise causing a loss of attention and a decrease of motivational components [50,54,55]. Others [53] add to this hypothesis that behavioral dysfunctions in ADHD could also be caused by a deficient behavioral extinction process, which is to say the poor dopamine availability makes it difficult to direct resources to inhibit previous learned behavior and change the response to stimuli.

Moreover, genetics underlines that the same deficits seen in ADHD children are also present in their caregivers, with an heritability factor around 50% and above, according to twin studies [56]. Such findings could point to a neurological disease, not due to environmental interaction. However, attachment theory posits that learned behavioral patterns tend to repeat during interactions and be biologically stored via dopamine and oxytocin supply as IWM in caregiver-child early relationships [10-16]. In addition, researchers within the fields of epigenetics and brain plasticity have shown how brain rearranges itself in front of gene-environment interaction [57]. Taken together, these statements could suggest how caregivers of ADHD children, due to their neuropsychological deficits, do not permit a co-regulation of prefrontal resources and by consequence enhance both their ADHD features and child's ones, which are stored and repeated. Caregiver-child early interactions are then chaotic and incoherent, and a dysregulated interpersonal communication leads to an high expressed emotion (EE) environment, marked by strong affects out of the subjects' control [58]. These difficulties imply a problematic adjustment in the development of attachment relationship [9,59], and consequently lead to the development of negative Self and Others representations [60] stored as an insecure attachment pattern (typically combining both anxious and avoidant aspects). Then, the insecure mother-child relationship fails to fulfil the child's needs, which are faced by the infant with a primitive use of defense mechanisms, especially projective identification, omnipotent control, acting and identification with the aggressor [61-64]. Furthermore, the absence of a paternal figure, frequently not empathic neither involved [65], does not permit an appropriate correction to these dynamics and contributes in leaving mother-child relationship in a pathological status. Moreover, caregivers' projecting aggression and high level of frustration create a circulating conflictual relationship based on punishment and a not-expectable context, confirming ADHD behavioral dynamics [66-71].

The poor cognitive control on emotions, combined with chaotic relational dynamics and subsequent insecure attachment, causes inadequate prefrontal development and a psychological functioning characterized by acting. Acting, as a psychological defense which allows the subject to act undesirable thoughts instead of cognitively manage them [72], prevents the integration of good and evil internal representations and the constitution of an integrated Self, which works by splitting and cannot process depressive aspects as a result [59,73,74].

Not surprisingly, the school system -carrying society norms and rules on behavior- is the first to request intervention for the disease. Indeed, ADHDs tend to recreate their conflictual way of functioning with teachers and schoolmates, being isolated and confirming the already negative perception of the Self [68,75].

The continuum between ADHD and BPD: a developmental perspective

Considering the results of epidemiological studies [2,3,5,76-78] which highlight the evolution between the two diseases, and comparing what emerges from research in the single fields, we tried to outline a developmental perspective using a bio-psycho-social background on an hypothetical clinical subject.

Dopaminergic dysfunctions affect BPD as well as ADHD, both constitutionally characterized by high impulsivity, emotional instability and affect dysregulation [26,27,79]. Prefrontal deficits are also common features, explaining how it is difficult for these individuals to have cognitive control on emotion, attention, and a proper mnemonic functioning [80-87]. The resulting neuropsychological profile is that of a subject who suffers from attentional and memory deficits, poor inhibitory control, problematic elaboration of emotional stimuli and general reduction of cognitive flexibility [24]. More specifically for each cognitive domain, La Barbera., *et al.* [24] show that both the diseases have selective attention and verbal memory deficits, poor passive motor inhibition, and difficulties to express emotions.

Therefore, neuroscience enlightens specific common features, which could give support to our hypothesis of continuity between ADHD and BPD, and discriminate this developmental line from others with whom it shares the same deficient domains [88,89].

Given neuroscientific and family research results, both in ADHD and BPD, the cognitive dysfunctional pattern is frequently associated with a difficult parenting for caregivers, which also share personality traits and vulnerabilities with their children [12,29,56,61]. Thus, caregivers-child interactions, especially if not helped by an adequate social context, tend to be chaotic, not corrective, and promote a typical insecure attachment pattern, which is characterized by a combination of anxious and avoidant features [10,59]. Indeed, both ADHD

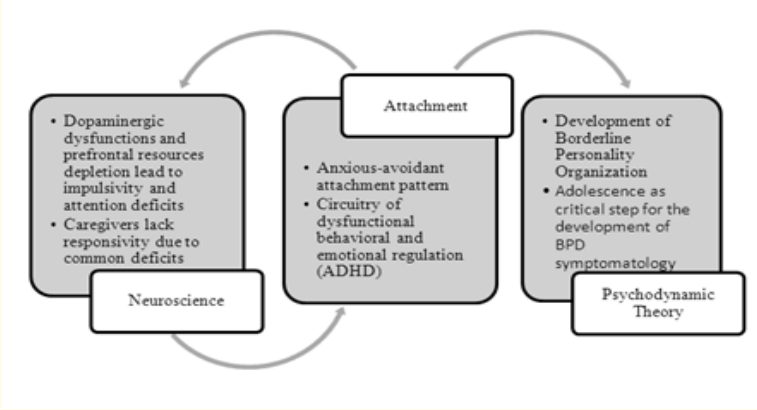
and BPD patients manifest an infancy characterized by disharmonic family life, with the presence of marital discord, hostile relationships and/or depressed mothers [10,66,67,69,90]. The concurrent presence of anxiety and avoidant behavioral styles, as well as the frequent history of abuse, loss, and high expressed emotion in infancy [10,58], are associated to a dependency-versus-independence conflict, which prevents individuation and leaves these subjects incapable of being alone [63,74,91-95]. Isolation has effectively been found as a common critical feature of ADHD and BPD [10,47-49,68], which are not able to integrate their good and evil sides, lack of reflective functioning and present a negative Self, fixated in the Separation-Individuation phase [10,37,61,73,75,96].

Again, the dynamics of the Self, show lot of common features between ADHD and BPD. Acting is the main and most striking characteristic of these subjects' interpersonal functioning, which is consequently shaped by impulsivity, hyperactivity and poor emotional regulation [34-36,59,73,74]. Moreover, defensive pattern includes primitive defenses like projective identification, identification with the aggressor and splitting [34-36,62-64]. "Splitting", being defined as the tendency to separate the world and the people into good and bad [72], accounts for the self-other representations not integrated and then projected or acted.

Psychodynamic theory could finally give a theoretical explanation to research data and outline a developmental perspective (Figure 1) to explain the presence of ADHD in BPD's biography. In a psychodynamic perspective, ADHD symptoms could be psychologically explained as defensive responses in order to manage affects and emotions in a dysfunctional and neglecting family context [10,97-101]. In other words, the constitutional neuropsychological deficits could be used by the child to express his emotional distress. These behavioral aspects would promote an atypical development, with a circularity of pathological family relationships that would make it difficult to the child to reach a proper organization of the Self [102]. Thus, ADHD temperamental traits could contribute to establish a Borderline Personality Organization [34,102]. Kernberg [34] described it in terms of intrapsychic features, emerging during adolescence and characterized by primitive defense mechanisms (projective identification, splitting, acting and identification with the aggressor), lack of structured Ego and object-relation maturity. These elements together lead to conflictual and not integrated self-other representations, difficulties in symbolization skills and in adjustment to reality [35,103].

A Borderline Personality Organization [34], is what seems to cover the relational common features between the two psychopathologies, attested by the chaotic arrangement of the Self emerged from the bio-psycho-social early interactions and insecure attachment patterns [34-36,62-64]. The outlined Self is fragile, not integrated, unable to self-reflect, and uses physical expressions and uncontrolled movements/actings as an instant satisfaction of not mentalized conflicts [35,103-106].

Finally, according to Shiner [107] and Kernberg [35], the early-adolescence period constitutes a critical step for ADHDs to develop the BPD, permitting the interaction between the first and the second axis pathologies described by DSM-IV-TR [1].



Conclusions

The present paper highlights the importance, in a developmental perspective, of considering the individual (and his/her pathological features) within a complex framework which considers the whole becoming-subject as a neurophysiological, psychological and behavioral Being, programmed to adjust to the early relational environment. As the National Research Council and Institute of Medicine committee [108] suggested, researchers should improve hypotheses and test the effects of genetic, environmental, and epigenetic influences on brain development, focusing on the whole childhood, from prenatal and early postnatal periods to early adolescence. Indeed, NRCIM pointed out the key role of brain development during the early stages, together with a good caregiving, in order to carry out the development of the neural systems that support secure attachment, positive socialization, adaptive learning, and emotional self-regulation throughout infancy, childhood, and adolescence environment. Moreover, adverse as well as positive experiences are proven to have strong influence on brain structure, changing its shape and functions during childhood. Following this statement, Perry [109] brought neuroscience to clinical practice, showing how brain development is strictly dependent on the environment and how different regions are connected to different stimuli. More specifically, subcortical and diencephalic structures development is negatively correlated with neglect and child abuse in infancy [109,110]. This historical background makes it difficult to maintain a cognitive focus on deficits, suggesting to start with a more attachment-informed intervention [109]. In prospect, secure attachment, emotional regulation, executive functioning and appropriate conduct are then associated with both positive development and prevention of mental illness.

The model proposed in this paper on the continuum between ADHD and BPD points to this direction. It suggests how this clinical profile is highlighted by statistical-descriptive research, but moreover it is very consistent in the single-considered perspectives. The developmental perspective proposed in this paper means to point out a possible integration between the neuroscience, psychodynamic and attachment approaches to human mind, in order to promote an interactive interpretation and preventive clinical interventions.

Borderline Personality Disorder is a challenging clinical diagnosis for clinicians to deal with. Patients frequently drop therapy before it could be effective or have troubles in being constant with sessions [111]. For these reasons, a better understanding of what are the antecedents of BPD, and what developmental steps subjects have passed through, could help clinicians in being more effective in treating patients.

The Borderline Personality Organization emergent from our analysis as the possible personality functioning of ADHD children, could account for research data on their dynamics and shows how a neuro developmental syndrome such as ADHD [112], which has widely been treated with a cognitive-behavioral approach, should be now worth considering for the emotional and subjective experience. This could help clinicians to understand its psychic dynamics in order to develop an appropriate psychological prevention/intervention for those aspects. Moreover, the paper aims to let the therapists treating BPDs to consider the pathology with a developmental sight, seeing more and new symptomatology aspects and dynamics to identify better and effective psychotherapeutic interventions. In this direction, we sustain Perry's Neurosequential model [109], which could be taken together our developmental perspective in considering the emotional and relational experience of ADHDs as a fundamental therapeutic goal to prevent BPD in adulthood. Otherwise, we could suppose that attachment-dependent regions of the brain would continue to work in a primitive way and cause severe difficulties while passing time.

The single theoretical specificities might be preserved, but acting within a unifying construct basis would allow a better "clinical equìpe work", permitting to structure a neuropsychological training to carry out psychoanalytic insights, or an intrapsychic-interpersonal development in a psychodynamic psychotherapy to restore a proper cognitive/neurological functioning [109,110,113-121].

Thus, researchers are encouraged to arrange collaborations between prevention scientists, clinicians and neuroscientists, supporting the establishment of multidisciplinary teams with expertise in developmental areas such as neuroscience, psychopathology, caregiving and social context. This would contribute to build up preventive interventions, leading to more research studies which would carry out further effective prevention efforts, by making and testing new hypotheses of causal mechanisms and theories of pathogenesis. It seems

necessary to build up this conjunction by supporting research multi-approaches teams with a national adequate economical funding resource [108].

This work has several limits, starting from the bibliographical recap of different fields, and the lack of clinical data and experience to validate the integration perspective. A comparison with other developmental lines of ADHD to better differentiate those at risk for BPD from other mental disorders (e.g. Antisocial Personality Disorder, Bipolar Disorder), is also suggested. However, the developmental model proposed could serve as a starting point to do so and it suggests researchers to examine in depth the continuum within the single theoretical perspectives and to find new similarities or differences that could enhance or change the model exposed.

Bibliography

1. American Psychiatric Association. "Manuale diagnostico e statistico dei disturbi mentali (DSM-IV-TR)". Milano: Masson (2000).

2. Fossati A., *et al*. "History of childhood attention deficit/hyperactivity disorder symptoms and borderline personality disorder: A controlled study". *Comprehensive Psychiatry* 43.5 (2002): 369-377.

3. Philipsen A., *et al*. "Attention-deficit/hyperactivity disorder as a potentially aggravating factor in borderline personality disorder". *The British Journal of Psychiatry* 192.2 (2008): 118-123.

4. Kessler RC., *et al*. "Patterns and predictors of attention-deficit/hyperactivity disorder persistence into adulthood: Results from the national comorbidity survey replication". *Biological Psychiatry* 57.11 (2005): 1442-51.

5. Miller TV., *et al*. "Axis I and II comorbidity in adults with ADHD". *Journal of Abnormal Psychology* 116.3 (2007): 519-28.

6. Philipsen A. "Differential diagnosis and comorbidity of attention-deficit/hyperactivity disorder (ADHD) and borderline personality disorder (BPD) in adults". *European Archives of Psychiatry and Clinical Neurosciences* 256 (2006): i42-i46.

7. Judd PH. "Neurocognitive impairment as a moderator in the development of borderline personality disorder". *Developmental Psychopathology* 17.4 (2005): 1173-1196.

8. Hughes A E., *et al*. "A developmental neuroscience of borderline pathology: Emotion dysregulation and social baseline theory". *Journal of Abnormal Child Psychology* 40.1 (2012): 21-33.

9. Bowlby J. "A secure base: Parent-child attachment and healthy human development". New York: Basic Books (1988).

10. Fonagy P., *et al*. "Borderline personality disorder, mentalization, and the neurobiology of attachment". *Infant Mental Health Journal* 32.1 (2011): 47-69.

11. Hofer M. "Psychobiological roots of early attachment". *Current Directions in Psychological Science* 15.2 (2006): 84-88.

12. Strathearn L. "Maternal neglect: Oxytocin, dopamine and the neurobiology of attachment". *Journal of Neuroendocrinology* 23.11 (2011): 1054-1065.

13. Coan JA. "Toward a neuroscience of attachment". In J. Cassidy & P.R. Shaver (Eds.), Handbook of Attachment: Theory, Research, and Clinical Applications, 2nd edition. New York: Guilford Press (2008).

14. Coan JA. "Adult attachment and the brain". *Journal of Social and Personal Relationships* 27.2 (2010): 210-217.

15. Eisenberger NI., *et al*. "Neural pathways link social support to attenuated neuroendocrine stress responses". *Neuro Image* 35.4 (2007): 1601-1612.

16. Way BM., *et al*. "Variation in the mu-opioid receptor gene (OPRM 1) is associated with dispositional and neural sensitivity to social rejection". *Proceedings of the National Academy of Sciences* 106.35 (2009): 15079-15084.

17. Wismer Fries AB., *et al*. "Early Experiences in Humans is Associated with Changes in Neuropeptides Critical for Regulating Social Behavior". *Proceedings of the National Academy of Sciences* 102.47 (2005): 17237-17240.

18. Butner J., et al. "Attachment style and two forms of affect co-regulation between romantic partners". *Personal Relationships* 14.3 (2007): 431-455.

19. Diamond L and Fagundes C. "Developmental perspectives on links between attachment and affect regulation over the lifespan". *Advances in Child Development and Behavior* 36 (2008): 83-134.

20. Fonagy P. "Attachment and borderline personality disorder". *Journal of the American Psychoanalytic Association* 48.4 (2000): 1129-1146.

21. Fuster JM. "Frontal lobe and cognitive development". *Journal of Neuro-cytology* 31.3-5 (2002): 373-385.

22. Gillath O., *et al*. "Attachment-style differences in the ability to suppress negative thoughts: exploring the neural correlates". *Neuroimage* 28.4 (2005): 835-847.

23. Levi G and Romani M. "Discontinuità e continuità tra disturbo da deficit dell'attenzione ed iperattività e disturbo borderline di personalità". *Psichiatria dell'Età Evolutiva e dell'Età Adulta* 14.3 (2008): 217-236.

24. La Barbera D., *et al*. "Disturbo da deficit dell'attenzione/iperattività e disturbo di personalità borderline: diagnosi differenziale e comorbilità dall'età infantile all'età adulta". *Giornale Italiano di Psicopatologia* 15 (2009): 250-268.

25. Zelkowitz P., *et al*. "Diatheses and stressors in borderline pathology of childhood: The role of neuropsychological risk and trauma". *Journal of the American Academy of Child and Adolescent Psychiatry* 40.1 (2001): 100-105.

26. Joyce PR., *et al*. "A dopamine transporter polymorphism is a risk factor for borderline personality disorder in depressed patients". *Psychological Medicine* 36.6 (2006): 807-813.

27. Nemoda Z., *et al.* "Association between dopaminergic polymorphisms and borderline personality traits among at-risk young adults and psychiatric inpatients". *Behavioral and Brain Functions* 6 (2010): 4.

28. Stanley B and Siever L. "The interpersonal dimension of borderline personality disorder: Toward a neuropeptide model". *American Journal of Psychiatry* 167.1 (2010): 24-39.

29. Gunderson JG., *et al*. "Family study of borderline personality disorder and its sectors of pathology". *Archives of General Psychiatry* 68.7 (2011): 753-762.

30. Hooley JM and Wilson-Murphy M. "Adult attachment to transitional objects and borderline personality disorder". *Journal of Personality Disorders* 26.2 (2012): 179-191.

31. Bartholomew K and Horowitz LM. "Attachment style among young adults: a test of a four category model". *Journal of personality and Social Psychology* 61.2 (1991): 226-244.

32. Main M and Solomon J. "Discovery of an insecure-disorganized/disoriented pattern". In T B Brazelton, M Yogman and N J Norwood. Affective development in infancy. University of Michigan: Ablex Publishing (1986).

33. Main M and Solomon J. "Procedures for identifying infants as disorganized/disoriented during the Ainsworth strange situation". In M T Greenberg, D Cicchetti, and E M Cummings. Attachment in preschool years: Theory, research and intervention. Chicago: University of Chicago Press (1990).

34. Kernberg O. "Borderline personality organization". *Journal of the American Psychoanalytical Association* 15.3 (1967): 641-685.

35. Kernberg O. "Sindromi marginali e narcisismo patologico". Torino: Bollati Boringhieri (1975).

36. Kernberg O. "Disturbi gravi della personalità". Torino: Bollati Boringhieri (1984).

37. Mangini E and Mondini S. "La psicoanalisi e il borderline". In E. Mangini (a cura di). Lezioni sul pensiero post-freudiano: Maestri, idee, suggestioni e fermenti della psicoanalisi del novecento Milano: Led (2003): 553-575.

38. Bergeret J. "La personalità normale e patologica". Milano: Raffaello Cortina Editore (1996).

39. Barnow S., *et al*. "Temperament and character in persons with borderline personality disorder". *Nervenarzt* 76.7 (2005): 839-840, 842-834, 846-838.

40. Bender D. S and Skodol A. E. "Borderline personality as a self-other representational disturbance". *Journal of Personality Disorders* 21.5 (2007): 500-517.

41. Critchfield KL., *et al.* "The relational context of aggression in borderline personality disorder: Using adult attachment style to predict forms of hostility". *Journal of Clinical Psychology* 64.2 (2008): 67-82.

42. Gunderson JG and Lyons-Ruth K. "BPD's interpersonal hypersensitivity phenotype: A gene-environment-developmental model". *Journal of Personality Disorders* 22.1 (2008): 22-41.

43. Klonsky ED. "What is emptiness? Clarifying the 7th criterion for borderline personality disorder". *Journal of Personality Disorders* 22.4 (2008): 418-426.

44. Sar V., *et al*. "Axis I dissociative disorder comorbidity in borderline personality disorder and reports of childhood trauma". *Journal of Clinical Psychiatry* 67.10 (2006): 1583-1590.

45. Stiglmayr C E., *et al*. "Dissociative symptoms are positively related to stress in borderline personality disorder". *Acta Psychiatrica Scandinavica* 117.2 (2008): 139-147.

46. Zanarini MC and Frankenburg FR. "The essential nature of borderline psychopathology". *Journal of Personality Disorders* 21.5 (2007): 518-535.

47. Heikkinen M., *et al*. "Recent life events and suicide in personality disorders". *Journal of Nervous and Mental Disease* 185.6 (1997): 373-381.

48. Kelly TM., *et al*. "Recent life changes, social adjustment and suicide attempts in patients with major depression and borderline personality disorder". *Journal of Personality Disorders* 14.4 (2000): 316-326.

49. Pagano ME., *et al*. "Stressful life events as predictors of functioning: findings from the collaborative longitudinal personality disorders study". *Acta Psychiatrica Scandinavica* 110.6 (2004): 421-429.

50. Killeen PR., *et al*. "A behavioral neuro-energetics theory of ADHD". *Neuroscience and Bio-behavioral Reviews* 37.4 (2013): 625-657.

51. Madras BK., *et al*. "The dopamine transporter and attention-deficit/hyperactivity disorder". *Biological Psychiatry* 57.11 (2005): 1397-1409.

52. Castellanos FX and Proal E. "Large-scale brain systems in ADHD: Beyond the prefrontal-striatal model". *Trends in Cognitive Sciences* 16.1 (2012): 17-26.

53. Sagvolden T., *et al*. "A dynamic developmental theory of attention-deficit/hyperactivity disorder (ADHD) predominantly hyperactive/impulsive and combined subtypes". *Behavioral and Brain Sciences* 28.3 (2005): 397-418.

54. Barkley R. A. "Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment". New York: The Guilford Press (1990).

55. Volkow ND., *et al*. "Motivation deficit in ADHD is associated with dysfunction of the dopamine reward pathway". *Molecular Psychiatry* 16.11 (2011): 1147-1154.

56. Scordo MR. "Disturbo da deficit di attenzione/iperattività". In M. G. Martinetti e M. C. Stefanini (a cura di), Approccio evolutivo alla neuropsichiatria dell'infanzia e dell'adolescenza. Firenze: SEID Editori (2012): 264-270.

57. Moro V and Filippi B. "La plasticità cerebrale: Alle radici del cambiamento". Firenze: Seid Editori (2010).

58. Antonietti A., *et al*. "Le dinamiche emotivo-relazionali in pre-adolescenti con disturbi dell'attenzione". *Psicologia Clinica dello Sviluppo* 2 (2010): 359-377.

59. Finzi-Dottan R., *et al*. "ADHD, temperament, and parental style as predictors of the child's attachment patterns". *Child Psychiatry and Human Development* 37.2 (2006): 103-114.

60. Bowlby J. "Attachment and loss: Attachment". New York: Basic Books, and London: Hogarth (2nd rev. ed., 1982) (1969).

61. Cavallina C., *et al*. "Attachment and parental reflective functioning features in ADHD: enhancing the knowledge on parenting characteristics". *Frontiers in Psychology* 6 (2015): 1313.

62. Heinemann E and Hopf H. "AD(H)S. Symptome – Psychodynamik – Fallbeispiele – Psychoanalytische Theorie und Therapie". Stuttgart: Kohlhammer (2006).

63. Klein M. "A contribution to the psychogenesis of manic-depressive states". In R Money-Kyrle (Ed.). The writings of Melanie Klein, London: Hogarth Press (1935).

64. Streeck-Fisher A and Fricke B. "Lieber unruhig sein als in einem tiefen dunklen Loch eingesperrt. Zum Verständnis und zur Therapie der Aufmerksamkeitsdefizit- und Hyperaktivitätsstörung aus psychodynamischer Sicht". *Praxis der Kinderpsychologie und Kinderpsychiatrie* 56.4 (2007): 277-299.

65. Edel MA., *et al*. "Interaction of recalled parental ADHD symptoms and rearing behavior with current attachment and emotional dysfunction in adult offspring with ADHD". *Psychiatry Research* 178.1 (2010): 137-141.

66. Battle E. S and Lacey B. "A context for hyperactivity in children over time". *Child Development* 43.3 (1972): 757-733.

67. Brandon S. "Over activity in childhood". Journal of Psychosomatic Research 15.4 (1971): 411-415.

68. Crittenden PM and Kulbotten GR. "Familial contributions to ADHD: An attachment perspective". *Tidsskrift for Norsk Psykologforening* 44.10 (2007): 1220-1229.

69. Gillberg C., *et al*. "Hyperkinetic disorders in seven-year-old children with perceptual, motor and attentional deficits". *Journal of Child Psychology and Psychiatry* 24.2 (1983): 233-246.

70. Lana N. "Riflettendo sui genitori ed insieme ai genitori". Richard & Piggle 19.2(2011): 192-202.

71. Levy TM and Orlans M. "Attachment disorder a san antecedent to violence and antisocial patterns in children". In TM Levy (Ed.). Handbook of attachment interventions. San Diego: Academic Press (2000).

72. McWilliams N. "Psychoanalytic diagnosis: Understanding personality structure in the clinical process". New York: Guilford Press (2011).

73. Palombo J. "Learning Disorders and Disorders of the Self". *New York: Norton* (2001).

74. Rainwater JB. "A psychoanalytic contribution to the understanding and treatment of attention deficit hyperactivity disorder". Dissertation Abstracts International: Section B: The Sciences and Engineering, 63.3-B (2007): 1940.

75. Fabro C. "Non fermarsi mai per non pensare". Richard e Piggle 19.2 (2011): 183-191.

76. Anckarsater H., *et al*. "The impact of ADHD and autism spectrum disorders on temperament, character, and personality development". *American Journal of Psychiatry* 163.7 (2006): 1239-1244.

77. Biederman J., *et al*. "Are girls with ADHD at risk for eating disorders? Results from a controlled, five-year prospective study". *Journal of Developmental and Behavioral Pediatrics* 28.4 (2007): 302-307.

78. Faraone SV., *et al*. "Attention-deficit/hyperactivity disorder in adults: An overview". *Biological Psychiatry* 48.1 (2000): 9-20.

79. Spencer TJ., *et al*. "Functional Genomics of Attention-Deficit/Hyperactivity Disorder (ADHD) Risk Alleles on Dopamine Transporter Binding in ADHD and Healthy Control Subjects". *Biological Psychiatry* 74.2 (2013): 84-89.

80. Castellanos F. X., *et al*. "Varieties of attention-deficit/hyperactivity disorder-related intra-individual variability". *Biological Psychiatry* 57.11 (2005): 1416-1423.

81. Herman JL., *et al*. "Childhood trauma in borderline personality disorder". *American Journal of Psychiatry* 146.4 (1989): 490-495.

82. Johnsen BH., *et al*. "Alcoholic subjects' attentional bias in the processing of alcohol-related words". *Psychology of Addictive Behaviors* 8.2 (1994): 111-115.

83. Lavy EH and van den Hout MA. "Attentional bias for appetitive cues: Effects of fasting in normal subjects". *Behavioral and Cognitive Psychotherapy* 21.4 (1993): 297-310.

84. Sabo AN. "Etiological significance of association between childhood trauma and borderline personality disorder: Conceptual and clinical implications". *Journal of Personality Disorders* 11.1 (1997): 50-70.

85. Sieswerda S., *et al*. "Hypervigilance in patients with borderline personality disorder: Specificity, automaticity, and predictors". *Behavior Research and Therapy* 45.5 (2006): 1011-1024.

86. Weissman DH., *et al*. "The neural bases of momentary lapses in attention". *Nature Neuroscience* 9.7 (2006): 971-978.

87. Zanarini MC. "Role of sexual abuse in the etiology of borderline personality disorder". Washington, DC: America Psychiatric Press (1997).

88. Biederman J., *et al*. "Attention-deficit/hyperactivity disorder and pediatric onset bipolar disorder". *Economics of Neuroscience* 3.5 (2001): 45-48.

89. Biederman J., *et al*. "Futher evidence that pediatric-onset bipolar disorder comorbid with ADHD represents a distinct subtype: Results from a large controlled family study". *Journal of Psychiatric Research* 47.1 (2013): 15-22.

90. Tallmadge J and Barkley R A. "The interactions of hyperactive and normal boys with their fathers and mothers". *Journal of Abnormal Child Psychology* 11.4 (1983): 565-579.

91. Adler G. "Borderline psychopathology and its treatment". New York: Jason Aronson (1985).

92. Haeussler G. "Das Aufmerksamkeitsdefizit- und hyperaktivitätssyndrom aus psychoanalytischer Sicht". Praxis der Kinderpsychologie und Kinderpsychiatrie 51.6 (2002): 454-65.

93. Kernberg O. "Structural derivatives of object relationships". *International Journal of Psychoanalysis* 47.2 (1966): 236-253.

94. Mahler MS., *et al*. "La nascita psicologica del bambino". *Torino: Bollati Boringhieri* (1975).

95. Winnicott DW. "La difesa maniacale". In G. Martinelli (Ed.). Dalla Pediatria alla Psicoanalisi. Firenze: Giunti O. S (1935).

96. Fast I. "Aspect of work style and work difficulty in borderline personalities". *International Journal of Psychoanalysis* 56.4 (1975): 397-403.

97. Cassidy J and Berlin L. J. "The insecure/ambivalent pattern of attachment: Theory and research". *Child Development* 65.4 (1994): 971-991.

98. Cassidy J and Kobak R. R. "Avoidance and its relation with other defensive processes". In J Belsky and T Nezworski (Eds), Clinical implications of attachment Hillsdale, NJ: Erlbaum (1988): 300-323.

99. Mikulincer M and Shave PR. "The attachment behavior system in adulthood: contents and processes". In M. P. Zanna (Ed.). Advances in experimental social psychology. San Diego, CA: Academic Press 35 (2003): 53-152.

100. Mikulincer M and Shaver PR. "Attachment in adulthood: structure, dynamics and change". New York: Guilford Press (2007).

101. Mikulincer M and Shaver PR. "Adult attachment and affect regulation". In J. Cassidy & P. R. Shaver (Eds.). Handbook of attachment: Theory, research and clinical applications. New York: Guilford Press (2008): 503-531.

102. Gunter M. "Attention deficit hyperactivity disorder (ADHD): An affect-processing and thought disorder?" *The International Journal of Psychoanalysis* 95.1 (2013): 43-66.

103. Laplance J and Pontalis JB. "Enciclopedia della psicoanalisi". Bari: Biblioteca Universale Laterza (1967).

104. Bick E. "Note sull'osservazione del lattante nell'addestramento psicoanalitico". In V. Bonamino & B. Iaccarino (a cura di). L'osservazione diretta del bambino. Torino: Boringhieri (1964).

105. Meissner WW. "The borderline spectrum". New York: Jason Aronson (1984).

106. Salomonsson B. "Psychoanalytic conceptualizations of the internal object in an ADHD child". *Journal of Infant, Child, and Adolescent Psychotherapy* 10.1 (2011): 87-102.

107. Shiner RL. "The development of personality disorders: Perspectives from normal personality development in childhood and adolescence". *Development and Psychopathology* 21.3 (2009): 715-734.

108. National Research Council (US) and Institute of Medicine (US) Committee on the Prevention of Mental Disorders and Substance Abuse Among Children, Youth, and Young Adults: Research Advances and Promising Interventions. Preventing Mental, Emotional, and Behavioral Disorders Among Young People. Progress and Possibilities. Editors: Mary Ellen O'Connell, Thomas Boat, and Kenneth E Warner. Washington (DC): National Academies Press (US) (2009).

109. Perry B and Dobson CL. "The Neurosequential Model of Therapeutics". In J D Ford (Ed). Treating Complex Traumatic Stress Disorders in Children and Adolescents: Scientific Foundations and Therapeutic Models. New York: Guilford Press (2013).

110. Sori CF and Schnur S. "Integrating a neurosequential approach in the treatment of traumatized children: An interview with Eliana Gil, Part II". *The Family Journal* X.XX (2013): 1-8.

111. Gunderson JG. "Borderline personality disorder: A clinical guide". American Psychiatric Association Publishing (2009).

112. American Psychiatric Association. "Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing (2013).

113. Solms M and Turnbull O. "The brain and the inner world: Introduction to the neuroscience of subjective experience". NY: Other Press (2002).

114. Bion W. R. "Transformations". London: Karnac (1965).

115. Bion W. R. "Second thoughts. Selected papers on psycho-analysis". New York: Basic Books (1967a).

116. Bion W. R. "Attention and interpretation". London: Tavistock Publications (1970a).

117. Magai C and McFadden JP. "The role of emotion in social and personality development". *New York: Plenum Press* (1995).

118. Peris T and Hinshaw S. "Family dynamics and preadolescent girls with ADHD: The relationship between expressed emotion, ADHD symptomatology, and comorbid disruptive behavior". *Journal of Child Psychology and Psychiatry* 44.8 (2003): 1177-1190.

119. Schore AN. "Affect regulation and the repair of the self". *NY: Norton* (2003).

120. Siegal D. "The developing mind: How relationships and the brain interact to shape who we are". *NY: Guilford* (1999).

121. Solms M. "The neuropsychology of dreams". NJ: Erlbaum (1997).

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