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Review Article

A Proposal about a Prediction Strategy from Normality to Psychopathology According to Nine Types Temperament Model

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Abstract

It is important to focus on the concepts of temperament and personality for the understanding and definition of psychopathologies. In the literature, it seems that the temperament is a focus parameter between normal personality and psychopathology. However, the relationships between temperament, personality and psychopathology; it is not totally explained in terms of predisposition, etiology, experience and interaction with the environment. The aim of this study is to bring a new definition to the concepts of temperament, personality, psychopathology and the relations between these concepts in the perspective of the nine type temperament model. It suggests a new presentative perspective and psychopathological predictive system over Nine Types Temperament Model (NTTM) types of temperament at different levels from normal to psychopathology. In addition to this NTTM takes the psychopathology as a holistic approach, in terms of predisposition, etiology, experience and environment.

This study we proposed that; 1) The temperament is a common parameter under normal and psychopathological characteristics, 2) The static temperament traits reveal normal or psychopathological manifestations in dynamic personality by interacting with internal and external factors, 3) The temperament has predisposition to psychopathology and 4). The temperament play a role in the etiology of individual differences in psychopathologies. In addition, a triple taxonomy (normal, psychopathological appearance, psychopathological diagnosis) is proposed as a new spectrum perspective between temperament traits and psychopathological diagnosis. The proposed taxonomy may facilitate the understanding of psychopathologies and increase the likelihood of early detection.

Keywords: Temperament; Personality; Psychopathology; Nine Type Temperament Model

1. Introduction

The relationship between temperament and personality concepts and psychopathology attracts attention of many researchers [1-3]. Personality, which defines the way the individual interacts with the physical and social environment; is characteristic patterns of behavior, emotion and thought [4, 5]. Temperament is; biological-based, structural features that determines the emotional, attention and motor reactions of individuals and predict the personality. Adaptation and reaction patterns, internal concepts, and difficult events that influence personality interact on the basis of temperament [6, 7]. In this context temperament is seen as a common starting point for both normal personality traits and psychopathology [8-10].

According to Kagan et al. [11] temperament is the key to understanding the individual's personality pattern and the risk of psychopathology. In order to understand the relationship between temperament, personality and psychopathology, researchers suggest various views. One of these views is the spectrum model, which starts at the determinant of the temperament and from normal personality traits to psychopathology [9, 12, 13]. It suggests that personality traits which start in determining the temperament are spectrum structure from normal to psychopathology (the spectrum model). According to this view, psychopathological disorders and personality psychopathologies are considered as a risky / extreme issue of normal temperament and personality taxonomy [e.g. 8, 14, 15, 16]. Another view is defined as vulnerability model, temperament is the focal point of the etiology and heritability-environment interaction in the formation of psychopathology. Some early temperament traits increase the likelihood of individuals developing psychopathology [17, 18, 19]. The pathoplastic model suggests that,

temperament plays an important role in assessing the prognosis, severity, quality and predisposition of psychopathology [18, 19]. As for that the scarring model, psychopathology and temperament directly affect each other. For example, after an acute psychiatric illness, an individual's personality traits can also change [20].

Models developed to investigate temperament and normal personality traits can be used as tools for understanding psychopathologies in modern day [12, 21, 22]. For instance, the Five Factor Personality Model (FFM) is proposed as a hierarchical model for understanding normal and abnormal personality structure [23, 24]. Cloninger's personality dimensions which defined in the Psychobiological Personality Model (PPM) were found to match some psychopathologies [25]. Another temperamental modelist, Akiskal suggests that affective temperaments are the basis of mood disorders [26]. According to Millon's Evolutionary Model personality traits express themselves in a variety of ways as normal and abnormal [27]. As for that Zuckerman's Biosocial Model, biology-genetics, personality, and stressful events interact with social and familial factors, and creating a vulnerability to psychopathology [28]. The Nine Types Temperament Model (NTTM) , which suggests that psychopathology is on the basis of temperament and personality and is the source of the suggestions in this study, examines the relationship between these concepts from a new perspective [15, 30, 31]. According to NTTM, the innate static temperament traits create a dynamic personality organization by interacting with internal (gender, genetic, structure, age, intelligence, biological characteristics etc.) and external (family, education, culture, belief, life experiences etc.) factors [32, 33]. In addition, the proposals about the formation, development and interaction of this dynamic organization are detailed through the concepts of natural and synthetic personality.

The natural personality represents the personality which develops on the basis of the individual's temperament traits are expressed the same way as the temperament traits. The synthetic part of personality defines as the traits which do not exist in the temperament type of the individual and are acquired after birth through parents, school and social environment [34]. While temperament is the source of static potential for the formation of psychopathologies, personality reveals dynamic reflections of psychopathologies. In other words, psychopathologies are the result of temperament traits that are exhibited to a lesser or more extreme level than normal, in a way that disrupts everyday functionality in the personality manifestation [16].

Temperament traits of NTTM are presented in Table 1. (The traits of NTTM approach and temperament types are explained in detail in [29, 30, 31, 34, 35, 36]. According to our literature search, there is no holistic model of psychopathology that focuses on normality and psychopathology in a way that includes predisposition, etiology, interaction system with environment, and proposal of practice on the basis of temperament. The purpose of this study is to discuss in a holistic way the role of temperament which plays in predisposition, etiology and interaction with the environment in psychopathology from NTTM's perspective. At the same time, it is a factual new perspective on NTTM types that temperament traits may be experienced at different levels from normal to psychopathology. It also suggests a new psychopathological prediction system based on temperament from a broad perspective covering both normal and psychopathological features.

| Temperament Types | Positive Potentials | Risky Features | Susceptibility to Psychopathology |
|---------------------------------------|---|---|---|
| NTT1-Perfection Seeking | Serious, Mature, Idealist, Fair, Righteous, Perfectionist, Disciplined, Persistent, Diligent, Meticulous, Neat, Principled, Controlled, Coldblooded, Rational, Temperate, Acting With Plan, Formalist, Consistent, Responsible, Defining, Planning, Classifying, Comparing, Categorizing, Systematic, Reformist | Moralist, Critical, Judging, Too Detailed, Easily Getting Angry and Tense, Strict | Obsessive Compulsive Personality Disorder Intermittent Explosive Disorder Depressive Disorders (especially Major Depressive Disorder) Anxiety Disorders Somatoform Disorders Sleep Disorders |
| NTT2- Seeking to Feel Emotions | Full of Love, Relation Oriented, Very Emotional, Revealing Emotions, Warm-Hearted, Extroverted, Sincere, Talkative, Sympathetic, Compassionate, Strong Communication Skills, Amiable, Pitying, Helper, Altruistic, Giving | Quickly Affected, Touchy, Persistent, Tenacious, Reproachful, Likes to Get Attention, Jealous, Manipulative | Dependent Personality Disorder Borderline Personality Disorder Histrionic Personality Disorder Anxiety Disorders Somatoform Disorders Depressive Disorders Eating Disorders, Gender Identity Disorders |

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|---|--|--|---|
| NTT3- Admirable Self Image Seeking | Success and Career-Oriented, Competitive, Goal-Oriented, Not Taking Negative Feelings as an Obstacle, Motivator, Popular, Diplomatic, Practical, Adaptive, Zealous, Hardworking, Productive | Ambitious, Status Seeking, Self-Seeker, Cunning | Narcissistic Personality Disorder Somatoform disorders (especially body dismorphic disorder) Eating Disorders |
| NTT4- Seeking Meaning of Emotions | Individualistic, Unique, Extraordinary, Empathetic, Intense Emotional, Designer, Artistic, Has Aesthetic Perspective, Identity Seeking, Sensitive, Natural, Sincere, Friendly, Compassionate, Romantic | Rebellious, Marginal, Melodramatic, Easily Hurt/Vulnerable, Melancholic, Passionate, Envyng | Borderline Personality Disorder Histrionic Personality Disorder Mood Disorders substance abuse Dissociative Disorders Gender Identity Disorders Melancholic Depression |
| NTT5- Seeking the Meaning of Knowledge | Introverted, Quiet, Observer, Analytical Thinking, Deeply Curious, Rationalist, Objective, Investigator, Abstracting, Conceptualizing, Specialist, Archivist | Sceptic, Asocial, Cold, Distant, Distant From Emotions, Stingy | Schizoid Personality Disorder Avoidant Personality Disorder Paranoid Personality Disorder Social Phobia |
| NTT6- Intellectual Serenity Seeking | Safety and Security Oriented, Team Player, Cares About Loyalty, Spontaneous Curiosity, Collecting Data, Not Showing his True Colors, not Distinguished, Cautious, Thrifty, Meticulous, Neat, Covering all Bases, Secretive | Anxious, Worried, Needs Authority, Paranoid touchiness, Pessimistic, Insecure / Mistrustful, Cheeseparing, Opponent, Ambivalent, Indecisive, Unsure, Suspicious, Obsessive, Controller | Avoidant Personality Disorder Paranoid Personality Disorder Passive Aggressive Personality Disorder Dependent Personality Disorder Obsessive Compulsive Disorder Anxiety Disorders (especially phobia, generalized anxiety disorder, |

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|---|---|---|---|
| | | | panic disorder) Major Depression Somatoform Disorders Sexual Dysfunctions Eating Disorders Sleep Disorders (especially parasomnia) |
| NTT7-Seeking Joy of Discovery | Prone to Novelty, Curious to Discover, Active, Enterprising, Extroverted, Quickly Establishing Relations, Talkative, Experiencing, Visionary, Innovative, Creative, Imaginative, Cheerful, Witty, Optimistic, Practical, Quick associations, Seeking Excitement | Avoiding Boredom, Untidy, Extravagant, Trouble-free, Exaggerating, Impatient, Easily Bored, Unplanned, Impulsive, Scattered Attention, Whimsical, Flight of Ideas | Histrionic Personality Disorder Borderline Personality Disorder Substance abuse Impulse Control Disorder Attention Deficit and Hyperactivity Disorder |
| NTT8-Absolute Power Seeking | Leader, Self-Confident, Brave, Generous, Patronizing/Protecting, Contestatory, Challenging, Outspoken, Entrepreneur, Quick to Go Into Action, Clear, Enduring | Dominating, Oppressive, Authoritarian, Grandiose, Tough, Intervening, Intolerant, Furious, Combative, Prone to Violence | Antisocial Personality Disorder Narcissistic Personality Disorder, Substance Abuse Impulse Control Disorders |
| NTT9-Sensory Motor Comfort Seeking | Calm, Harmonious, Peaceable, Peacekeeper, Mild, Peaceful, Not Judging, Integrating, Avoiding Conflicts, Soft, Pliant, Patient, Likes Routing, Letting Things Flow | Sluggish, Passive Resistance, Having Trouble Saying No, Not Getting Involved, Suppressing Anger, Postponing, Shy | Avoidant Personality Disorder Passive Aggressive Personality Disorder |

Table 1: Traits and susceptibility to psychopathology of nine types temperament model types.

2. Methods

Both printed and online books and articles about psychopathology, temperament and personality which were published between the years of 1940 and 2017 are included in this study. The articles were searched on the PsycINFO, ebscohost/academic, eric, social science research network (SSRN), journal storage (JSTOR), googlescholar and pubmed databases. E books and articles were scanned by the words of psychopathology, temperament and NTTM in the databases. The abstracts of studies were evaluated by the relation of these terms with each other and psychopathology, etiology, spectrum and predisposition. 102 articles and 30 books that focus on the relationship between temperament and psychopathology more conceptually were examined as full texts. Within these studies, the work that is not related to the basic idea of the main article has been eliminated and included 45 articles and 15 books to study.

3. Discussion

In this section, relations between temperament, personality and psychopathology will be examined under the titles of; 1) The role of the temperament in the formation of psychopathology 2) Temperament, personality and psychopathology interaction, 3) The role of temperament as interacting with the environment in psychology formation, 4) The etiological role of temperament as individual differences in psychopathology. Finally, researchers will be offered a temperament-based psychopathology approach in the perspective of NTTM, which is the starting point of this article.

3.1 The role of temperament in the formation of psychopathology

There are arguments in the literature that there is no definite boundary between psychopathology and normality, and that both psychopathology and normal personality have the same underlying parameters [27]. For example, Cloninger [37] suggests that there is a common structure under normal and maladaptive personality traits other than schizotypal and paranoid disorders. Clark [8] claims that this common parameter underlying personality and psychopathology can be temperament. According to Spectrum Model, there is a common continuity, neurobiology and etiology without qualitative distinction between temperament and psychopathological features [20]. Recent studies have shown that affective temperaments often associated with mood disorders are also seen in the normal population, and that extreme variants of these temperaments are associated with psychopathological features [10, 38]. Jeronimus et al. [39]; found that extreme display of temperament traits predicted psychopathology. Miller et al

[40] suggests that personality disorders can be understood through extreme variants of the personality dimensions described in the FFM. All these arguments support that temperament is a common parameter under normal and psychopathological properties.

Personality and psychopathologies in the Diagnostic and Statistical Manual of Mental Disorders (DSM) 4 diagnostic systems are assessed in separate categories [5, 9] despite the views that address normal and abnormal personality traits with a spectrum perspective. Although a dimensional evaluation innovation has been introduced that will contribute to greater consideration of individual differences in personality on the DSM 5 [41] this perspective is open to discuss about the adequacy of this revision to explain the inseparable relationship between personality and psychopathology. According to A. Meyer who is the founder of the psychobiological model, personality is fundamental factor in the formation of all symptoms and diagnoses [42]. Thus, it is not possible to understand the psychopathology of an individual without considering the influence of personality and environmental factors [43]. According to NTTM; the interaction of personality and other factors, which are effective in the formation of psychopathology can be discussed and explained in a systematic way temperament-based perspective [16].

In this context, it can be revealed that temperament and the personality that develops on the basis of it, is the source of all psychopathologies with the understanding of predisposition, experience and the effects of the disease. According to NTTM, temperament, which is the basis of personality traits, also constitutes the potential source of all psychopathologies [15, 16, 36]. Static temperament characteristics can be affected by internal and external factors and may cause the normal or psychopathological manifestations in the dynamic personality [16, 31, 44]. For example; restlessness, headiness, extroversion, self-consciousness, impulsivity, fast associative, being distracted are the traits which exists potentially in Nine Types of Temperament (NTT) 7 [33]. These traits can present themselves, at the normal level in the appearance of dynamic personality on the other hand Impulse Control Disorder and Attention Deficit Hyperactivity Disorder may also be present at the psychopathological level [15, 31]. Temperament includes protective factors as well as predisposition to psychopathology as Rothbart and Ahadi [6] states. Although the internal and external factors interacting with the temperament are posing to risk of creating psychopathology (having unwanted biological traits, challenging life experiences, etc.), the individual can be protected from psychopathologies and exhibit a normal personality pattern through his/her own characteristics [45]. For example; when the individual in the NTT6 enters a new social environment, even though has anxiety

temperament type may compensate this condition with the coherence feature of his own temperament type and thus may not develop psychopathology (normal natural personality) [46]. On the other hand, individuals are able to develop psychopathology by exhibiting learned features from other temperament types, while their own temperament type has not include the risky features (synthetic psychopathological personality). On the other hand, individuals are able to develop psychopathology by exhibiting extrinsic features of other temperament types, if not in their own temperament (synthetic psychopathological personality). For example, even if an individual of the NTT4, does not have an anxiety as a potential temperament trait, can be interacted and affected from the family, education, culture, etc. and may show the pathological level of anxious behavior [48]. Therefore it could be said that psychopathology were composed by the individual exhibits extreme or minimal display of own temperament traits (natural psychopathology) and exhibits extreme traits which not found in own temperament and through learning interacting with features (synthetic psychopathology). However, the crucial point here is that the synthetic personality does not develop in a completely independent manner from the natural personality [34]. Because of temperament type, which determines the basic motivation and perception priorities of the individual, has a motivational effect on the learning of synthetic personality traits [33, 34]. Therefore it can be said that, temperament is the fundamental parameter underlying both natural and synthetic psychopathologies.

3.2 Temperament, personality and psychopathology interaction

According to Akiskal's Affective Temperament Model, temperament types play a decisive role in the emergence of psychopathologies, the degree of illness and individual differences in the experience of psychopathology [49]. Temperament can also play a decisive role in the course of psychopathologies. According to Pathoplastic view, temperament or personality can change the narrative and course of psychopathology, although not directly cause psychopathology [20, 50]. However, there is some evidence in the literature that there is a causal relationship between temperament, personality, and psychopathology, and that the relationship persists throughout the course of psychopathology [51, 52]. According to the scar model, temperament is mainly influenced by the psychopathology [53, 20]. According to NTTM, psychopathology is not an effect on static/unchanging temperament traits; it has an effect on dynamic personality manifestation [16]. This effect continues mutually throughout life (personality-psychopathology) on the premise of temperament. In some diseases such as Alzheimer's, it is suggested that the effect of the diseases on the personality is higher than the personality effect on the diseases [13]. In our opinion, although the symptomatic pattern of disease is predominant in such psychotic states, the most important parameter

in experiencing the disease is the personality that develops on the basis of temperament. For instance, diagnose of major depression, in NTT4 temperamental type of individual is melancholic and NTT6 temperamental type of individual is anxious, exhibit subtype features of depression [30] In addition, it can be said that temperament also influences the frequency of referral to the clinic, complaint type and disease prognosis. For example when it comes to the frequency of psychopathological consultation and complaining, NTT2 temperament type with the focus of love and attention who is quick to be influenced and cry easily is different from a NTT3 temperament type who is success drive and who tends ignore the negative feelings, or it can be predicted that the prognosis of depression of individuals with NTT4 temperament type will be longer than those of NTT3 temperament type.

3.3 The role of temperament as interacting with the environment in psychology formation

Researchers indicate that normal or psychopathological development does not depend solely on temperament traits, and emphasizes the importance of temperament-environment interaction from early on [51, 54]. According to Strelau [45] configuration of risky traits or traits in temperament interacts excessively, persistently, or recurrently with other factors (e.g., physical and social environment, educational treatment, situations, the individual's characteristics), increasing the risk of developing pathology or maladjusted personality. Besides environmental factors, biological factors also play an important role in the formation of psychopathologies [55]. For example; According to Kagan and Snidman [45], there are two distinct types of social phobia which have influence biological characteristics and temperament. NTTM have the opinion that the interaction of the temperament with environmental and biological factors importance in the formation of normal or psychopathological personality [16, 44]. According to NTTM, such as age, sex, intelligence, genetic structure which individual have no influence on, also are effective on personality [34, 57]. NTTM indicates the factors ,which plays a role on development of personality, in two facest: 1) The individual while not giving him the opportunity to make an impact on located at the bottom of internal factors (Intelligence, gender, genetics, age, biological properties, etc.) and 2) The effect on the individual from outside himself partially located at the bottom which allows you to have external factors (family, education, social environment, live events, culture, beliefs, etc.) tackles two aspects [34, 47]. When it comes to the factors which interacted the temperament and play a role when it come to the formation of personality. The effects of these factors on the personality both internal and external are determined according to perceptual priorities of a single concept (temperament) [29, 36]. In this context, two types of social phobia which Kagan and Snidman mention can be regarded as related to temperament. For example, an individual of the NTT6 temperament type may

exhibit social phobic characteristics as it has undesirable biological properties (dwarfness, cleft palate, etc.). An individual of NTT7 temperament type may make criticism of undesirable biological properties into a humorous topic and may not exhibit social phobic properties [46]. According to this example, it can be said from a wider perspective, all external and internal factors which are pose a risk for psychopathologies, that can be related to temperament and interact on the basis of temperament [16].

3.4 The etiological role of temperament as individual differences in psychopathology

Some studies in the literature show that specific temperament traits play a role in the etiology of psychopathologies. For example, it is suggested that fear, frustration, anger and sadness, which are the lower traits of temperament sensuality and neuroticism, are the origin of psychopathologies [18]. According to Nigg [58] argues that at the origin of anxiety disorders, there is a combination of high negative emotionality and low effortful temperament traits. An individual which experiencing anxiety disorder why does a low level of effortful control and high negative emotionality? As pointed out by Burger [59], this perspective allows for a consistent mapping between temperament traits and psychopathologies by the discriminative trait approach, but may be limited by not providing a dynamic etiologic explanation [29, 33]. At this point, the dynamic approach that defines NTTM's temperament types with the concept of existential position [29, 48] may be useful. Indeed, the existential position according to the NTTM includes the main cause determining the actional, emotional and intellectual behaviors/reactions of individuals in all the dynamic situations in life (e.g. NTT1 = seeking for perfection, NTT2 = seeking for feelings as presented in Table 1, etc.) [29]. In this context, temperament is a psychological structure that constitutes the root of individual differences [16, 29, 34, 48]. For example, an individual of the NTT6 temperament type, depending on the Intellectual Serenity Seeking; being a controllable, has all the features of calculation, data storage, indecision, uncertainty, suspicions, evasiveness, and anxiety and worry about uncertainty [36]. In times of uncertainty such individual may feel the fear of losing control and display these traits with the fear of losing control. This may cause the diagnosis of anxiety disorder. Therefore, it can be argued that an individual of NTT6 temperament trait experiencing anxiety disorder is the main reason underlying the psychopathology, Intellectual Serenity Seeking. When this example is generalized from the perspective of all temperament types, it can be said that the underlying cause of psychopathologies is individual's search for basic existential search. (Psychopathological diagnoses that can be suggested to be predisposed to the existential quests of temperament types are presented in Table 1).

The perception of any situation or incident that an individual come across, as a normal or abnormal/maladaptive stressor can be assessed primarily by the perception of perceived temperament. For example; the concept of anxiety is considered at two levels, being real and neurotic. Real anxiety is defined as a feeling of danger to the outside world, while neurotic anxiety is defined as a emotion of feeling despite the absence of a real threat or danger object. In terms of NTTM types; for an individual of the NTT6 temperament type who cannot tolerate uncertainty, it is dangerous not to feel safe and secure [60]. In terms of NTTM types; for an individual of the NTT6 temperament type who cannot tolerate uncertainty, it is dangerous not to feel safe and secure [57]. The separation from what sees as a relationship object is a danger to an individual of the NTT2 temperament type who is relationship-oriented and afraid of being alone [46]. In this case, different perceptions of danger for NTT6 and NTT2 temperament type individuals may cause anxiety [36, 57]. In terms of the other temperament types of an individual, the anxiety caused by the loss of a neurotic object can be regarded as normal for the individual of NTT2 temperament type. Furthermore, this anxiety can be experienced 1) normal 2) the level of psychopathological appearance that would not be diagnosed but would adversely affect daily life functioning, or 3) to meet diagnostic criteria, at the level of psychopathological diagnosis, which is experienced by a person through a real object of anxiety. Or it may be an sunormal mystical orientation and a natural feeling of lack of anxiety with the experience of mindfulness. On the other hand, under the psychopathological symptoms that seem to be the same, different etiologies may be lying, depending on their temperament differences. For example, the social anxiety experienced by an individual in temperament type (NTT9) Sensory Motor Comfort Seeking differs from NTT6; it may be due to the discomfort that he feels due to his relaxed and peaceful routine due to being on his eyes in the social environment [36, 47]. Therefore, temperament type according to NTTM may contribute to understanding different ethiological backgrounds between individuals exhibiting the same psychopathological appearance as well as explaining the etiologies underlying psychopathologies.

4. Conclusion

NTTM claims to evaluate temperament, personality, and psychopathology conceptually in a coherent and holistic manner. It can be thought that the temperament typology that forms the basis of the model is explained in a comprehensive and consistent manner with all its features, starting from exploring the existential basis underlying the behavior of individuals. At the same time, it can be said that the process in which the static temperaments are expressed as dynamic personality traits is described in a taxonomic way through the natural and synthetic

personality concepts. Conceptually, the relationship between temperament and psychopathology can be explained in a comprehensive way in terms of differences in predisposition, etiology, and experience by means of this explanatory description. The temperament which is common origin of normal and psychopathological features is having a critical role in the perception of internal and external factors and manifesting as personality manifestation.

The NTTM's reference to the natural and synthetic personality can provide explanatory data on the dynamic organizational role of the temperament in relation to the psychopathology. At the same time it can be argued that the temperament is also rooted in the individual differences in the experience of psychopathology as well as in personality. In addition, a triple taxonomy (normal, psychopathological appearance, psychopathological diagnosis) can be suggested within the spektrumic structure between temperament and psychopathological diagnosis. This proposed taxonomy may not only facilitate the understanding of psychopathologies but may also increase the likelihood of early detection by predicting the psychopathology predisposition of the subject. Although some studies (ADHD, depression, personality disorders, poster sources) that are related to the relationship between temperament types and psychopathologies, the extension of these studies and longitudinal follow-up studies will help to test our opinions and taxonomy.

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