

TEMPERAMENT: HISTORICAL AND MODERN CONCEPTS IN PSYCHOSOMATIC RELATIONSHIPS

A.G.Arzibekov¹  F.Kh.Sultanova¹  A.S.Saliyev¹ 

1. Andijan State Medical Institute, Andijan, Uzbekistan.

Abstract.

This article presents historical and modern ideas about the role of temperament in psychosomatic relationships. The evolution and origins of the study of temperament and the origins of the formation of psychosomatic medicine are described in detail. The issues of the pathogenetic influence of mental factors on the somatic state of a person are revealed. This article emphasizes how the autonomic nervous system makes an important contribution to the development of disorders of psychosomatic relationships. The final part of the article focuses on the importance of temperament in the development of the individual personality of children and adolescents. It is noted that temperament, like all properties of the body, is subject to age-related changes. In childhood, changes in temperament are due to maturation. Possession of certain properties of temperament does not directly determine how the child's personality will develop. However, the indirect influence of temperament on the formation of personality is undoubtedly.

Key words: temperament, history, psychosomatics, deti.

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Correspondence

Arzibekov Abdikadir Gulyamovich
Andijan State Medical
Institute, Andijan, Uzbekistan

e-mail: pediatrArzibekov@gmail.com

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The somatic and the mental, being qualitatively different phenomena, represent only different aspects of a single specific person, and it is impossible to separate these aspects from each other when studying the problem of illness. The unity of the mental and the somatic has been pointed out by researchers [4, 9, 11, 13, 16, 22, 24, 30].

The psychosomatic problem arose simultaneously with the emergence of medicine in general [12, 26]. It is known that at the origins of scientific medicine stood two schools, reflecting two opposing approaches to the interpretation of the general concept of disease: the Cosmic school of Hippocrates, which interpreted disease as a disorder of the relationship between the subject and reality («a person is sick»), and the Cnidus school, which considered disease as a lesion of some organ («a person has a disease»). This opposition runs through the entire history of medicine. Modern psychosomatic medicine arose as a reaction to this narrow, localistic approach to the problems of disease [31]. The works of Freud, I.P. Pavlov and Cannon [47] were of the greatest importance for the development of psychosomatic medicine.

Freud's theory, as one of its main postulates, asserted the inseparable connection between the mental and the physical, and Freud's psychoanalysis postulated symbolic conversion as a mechanism linking these two realities - the mental and the physical [31]. The main conclusion of the theory of nervism by I.P. Pavlov and his students is the establishment of the fact that the nervous system in higher animals and in humans is the leading link that organizes a variety of regulatory mechanisms that ensure the normal state of the organism. All its humoral systems, the entire complex of metabolic processes are subordinated to the nervous system. Violation of nervous regulation leads to a disorder of all functions of the organism and its functional systems. The most striking manifestation of this theory in application to the problem of disease was the theory of cortico-visceral pathology by K.M. Bykov (1947, 1960).

In studies of the pathogenetic influence of mental factors on the somatic state of a person, after some cooling towards the classical theory of corticovisceral pathology of K. M. Bykov, the main attention was paid to the problem of iatrogenic diseases [20]. The second side of the problem is the influence of the somatic state on the human psyche. It has long been known that with any disease not only the human organs suffer, but also his soul (49). However, systematic scientific research on this issue began only in the 20th century. The works of I. P. Pavlov and his school established that with any visceral pathology, the functional state of the central nervous system and its highest part - the cerebral cortex - is disrupted. «In the higher nervous activity of the patient, - wrote A. T. Pshonik (1962), as in a mirror, the degree and depth of the disease is reflected» [1]. Research by K. M. Bykov and his students (1947, 1960) showed that the pathological process developing in the internal organs is capable of disorganizing higher nervous activity (HNA). Disorganized HNA, in turn, aggravates the pathological process.

Thus, the higher nervous activity and the pathological process are connected with each other by cause-and-effect relationships. It should be noted that corticovisceral relationships are especially evident in pathology, since normally the internal organs are self-regulated by the neural formations lying below the cerebral cortex - in various parts of the brain stem. Disease of any system of internal organs indicates a dysfunction of the cerebral cortex [10, 17, 25].

An important problem in psychosomatic relationships is the so-called «vicious circle» mechanism. Its essence lies in the fact that a disorder that occurs primarily, for example, in the somatic sphere, causes psychopathological reactions, which are the cause of further deterioration of the somatic state, and so on. K.M. Bykov wrote about this (1980).

The concept of temperament has a long past, but the real scientific history of this issue began not so long ago. In the past, there were endless arguments about the essence of temperaments, their definition, their classification. There were as many classifications as there were various theories on this topic. Each of these theories claimed universal significance and quickly turned into dogmas. Therefore, despite numerous publications, this issue remains practically little studied [27; 50].

The word «temperament», according to some authors, comes from the Latin root «temperamentum», which means «proportion», «proportion» or «ratio» [8, 36, 39]. The doctrine of temperament originated in the ancient world. The original sources of the doctrine of temperament are related to the «humoral pathology» of the ancient East (Egypt, India), which reflected the general views of ancient peoples on nature in general. In Ancient Greece (5-2 centuries BC), it was believed that a certain ratio of body fluids, of which four were known at that time: blood, bile, black bile and mucus, is the main reason for differences in human behavior (Hippocrates, Galen). The «humoral» (liquid) approach gave four types of temperament: sanguine (blood), phlegmatic (phlegm, mucus), choleric (bile) and melancholic (black bile). Until the end of the 18th century, «humoral» remained the main theory in the study of temperament.

At the end of the 18th century, the German philosopher E. Kant (1792-1804) put forward his doctrine of temperament, which laid the foundation for the psychological direction in this issue. Before Kant, there was a number of fragmentary data on the mental traits of temperament - this did not at all indicate the presence of a psychological concept on this issue. E. Kant divided temperaments into two types: temperaments of feelings and temperaments of activity. He attributed sanguine and its opposite - melancholic - to temperaments of feelings; and choleric and phlegmatic to temperaments of activity [39]. The doctrine of temperaments arose as part of medicine and was closely related to its practical tasks. Hippocrates also suggested taking into account temperament and constitution when making a diagnosis and choosing a method of treatment. However, although the concept of temperament developed in close connection with the doctrine of constitution, these concepts cannot be completely identified, since constitution is a broader concept, and temperament is only its component, reflecting the individual type of emotional-volitional self-regulation of life processes. At the beginning of the last century, E. Kretschmer tried to link the characteristics of temperament with the characteristics of body structure. He strongly emphasized the relationship between individual temperament and the corresponding constitution. According to his theory, asthenics are characterized by isolation, emotional vulnerability, and rapid fatigue. Picnics are talkative, sociable people who make friends easily; athletes are aggressive and power-hungry [51]. At the same time, American researchers W. Sheldon and S. Stevens worked in this direction. They also attempted to deduce a certain psychological makeup of temperament from the type of physique. W. Sheldon and S. Stevens assessed the physique by the development of three main human tissues: ecto-, meso- and endomorphic. According to this theory, ectomorphs, i.e. people with predominantly ectomorphic tissue development, are characterized by a cerebrotonic temperament, namely a craving for aesthetic pleasures and coldness. Endomorphs, people with well-developed internal organs, are distinguished by a lively, sociable temperament. Mesomorphs, i.e. people with well-developed bone and muscle tissue, are characterized by a craving for competition and aggressiveness.

Thus, for thousands of years too little has been done to move this problem forward. All this has led to the fact that unscientific statements have been spread about temperament. This lack of internal scientific progress should be explained, first of all, by the insufficient level of knowledge in the field of neurophysiology and, especially, psychology, the erroneous formulation of the problem and the absence of a scientific

research method by means of which it would be possible to strictly objectively study the temperaments of animals and humans. The situation was complicated by the fact that the study of temperament in terms of research had an extremely difficult and complex object of study - the general individuality (or behavior) of a person. For a very long period, views on behavior and its physiological mechanism were extremely primitive. Only gradually, with the growth of a number of branches of science (neurophysiology, endocrinology, psychology, psychiatry), a foundation was created on which a scientific interpretation of the study of temperaments could be formed. At the beginning of the last century, thanks to major discoveries in the field of anatomy and physiology, a decisive shift was made in the study of the physiological foundations of temperament. The first prerequisite for the development of this scientific direction was the theory of the properties of the nervous system, developed by I.P. Pavlov [52]. He was the first to express the idea that temperament is based not on the properties of fluids or body tissues, but on the peculiarities of the functioning of the nervous system. According to this theory, the excitatory and inhibitory processes occurring in the central nervous system are characterized by three main properties: strength, mobility and balance, the level of development of which is manifested in the individual characteristics of human higher nervous activity. Pavlov's principle of classifying types is original, it fully reflects the idea of nervism. I.P. Pavlov points out a wide variety of possible variants of higher nervous activity types; however, he believes that the most common are four «especially sharp, striking» types. These four types are as follows: strong, balanced, mobile type of the nervous system (NS); strong, balanced, inert; a strong, unbalanced type with a predominance of excitation and a weak type. According to Pavlov [52], the properties of the nervous system form the physiological basis of temperament, which is a mental manifestation of the general type of the nervous system. The general type of the nervous system plays a regulatory role in higher nervous activity (HNA). The dynamics of all conditioned reflex processes depend on its properties. Therefore, the properties of temperament, determined by the general type of the nervous system, play the same regulatory role in mental activity. The dynamics of all mental processes depend on them [10, 15, 54].

A lot was done to identify the types of nervous system in the school of B.M. Teplov - V.D. Nebylitsyn [53]. Having taken a critical approach to identifying 4 types of higher nervous activity, they not only created and substantiated an arsenal of new methods for studying the properties of the human nervous system, but also identified new, previously unknown properties of the nervous system, such as dynamism, lability of excitation and inhibition processes, and a fundamentally new interpretation of such a property as balance was given.

As a result of his research, V.D. Nebylitsyn formulated the principle of «three-memberedness» in the organization of the properties of the nervous system, according to which the following indicators should be taken into account when determining each given property: the index of a given property for excitation, the index for inhibition, and the index characterizing the balance of nervous processes for a given property.

Thus, he outlined a 12-dimensional classification of the properties of the human nervous system. V.D. Nebylitsyn identified eight so-called primary (strength, mobility, dynamism and lability in relation to excitation and inhibition) and 4 secondary properties indicating balance in these four parameters. Then experimental evidence was obtained for the existence of another independent property of the nervous system - concentrated and a 15-dimensional structure of the properties of the nervous system was proposed, and with the identification of such a property as activation [38], the structure of the properties of the nervous system becomes even more complex.

Thus, at different times, various biological subsystems of the human body were put forward as the basis of temperament: humoral, somatic, nervous. As a basis for temperament as an integral psychological formation in these theories, not the entire biological system of a person is taken, but only its part, which does not have a sufficient number of properties to represent and describe this system as a whole [40].

According to modern concepts, the properties of temperament are determined by differences in the excitability of brain systems that integrate an individual's behavior, emotions, and vegetative functions [10]. Any behavioral reaction can be described by a relatively small number of indicators: threshold, magnitude, sign, and time dynamics. Therefore, the number of temperament properties, although large, is not infinite, and typologies built on their basis should be fundamentally similar. From a materialistic point of view, there are no mental phenomena, states, or activities that do not depend on the

work of the cerebral cortex, and, consequently, there are no mental properties that do not depend on the physiological properties of the higher parts of the brain, i.e., on the general type of the nervous system. The properties of temperament, apparently, depend more directly and more unambiguously on the general type of the nervous system than any other individual mental characteristics. In this case, a certain general type of nervous system corresponds to a certain and only one type of temperament [10, 19, 41].

The general type of the nervous system plays a regulatory role in higher nervous activity. The dynamics of all conditioned reflex processes depend on its properties. Therefore, the properties of temperament, determined by the general type of the nervous system, play the same regulatory role in mental activity. The dynamics of all mental processes depend on them [43]. Since the general type of the nervous system is determined by the constitution of the organism, the properties of temperament usually include such mental properties that are preserved over a long period of life and change only slowly and gradually. Meanwhile, dynamic features of interests, character traits and other personality traits depend not only on the type of the nervous system, but also on other physiological conditions, for example, the functional state of the nervous system, the system of conditioned reflex connections, various physiological mechanisms, etc.

Recently, the concept of biological determinacy of formal-dynamic properties of individual human behavior, which originates in the works of I. P. Pavlov, B. M. Teplov, V. D. Nebylitsyn and their followers, has been widely developed. At present, this concept has come to be regarded as a special case of the more fundamental concept of functional-systemic organization of brain work proposed by P. K. Anokhin (1968). The properties of the nervous system are interpreted as basal characteristics of functional systems that ensure the integrative activity of the nervous system. This new understanding has not only dramatically changed the approach to the search for biological characteristics underlying individual differences in the structure of human individuality, but has also forced a new revision of the place of temperament in the structure of this individuality [44]

Previously, temperament was considered as a direct manifestation of human biological properties at the level of behavior. According to V.M. Rusalov (1989), temperament is the result of «systemic generalization of invariant biological components that are involved in functional systems of behavior.» Thanks to «systemic generalization,» the initially genetically determined system of individual biological properties of a person (with an initial hierarchy of needs, plan and method of action), being included in a wide variety of activities, is gradually transformed and forms, regardless of the content of the activity itself, a generalized, qualitatively new, individually stable system of invariant properties, but no longer biological, but psychobiological properties of individual behavior [54]. Thus, temperament is a psychobiological category that encompasses the entire wealth of substantive characteristics of human behavior. First of all, it is manifested in the energy level of behavior and in the time parameters of reactions. Temperament in itself does not constitute the content of behavior. It is manifested in actions regardless of their content and direction, and not only in emotional reactions, but also in the intellectual sphere.

As A. Thomas (55) emphasizes, the concept of «temperament» refers to the aspect of behavior that answers the question «How?» It differs from abilities that are associated with the questions «What?» and «How well?», as well as from motivation associated with answers to the questions «Why?» and «Why?» Temperament characterizes the mode of action, but not its content. The energy level of actions is characterized by two properties of temperament - reactivity and activity of behavior. Reactivity is understood as the level of intensity of the reaction in response to a stimulus. It depends on the excitability of the subject and the strength of the stimulus. This also includes performance (or endurance), i.e. the ability to adequately respond to strong, prolonged and frequent stimuli. According to Thomas, most individuals occupy an intermediate position in reactivity. Activity characterizes the intensity, duration and frequency of the actions performed. As a rule, low-reactive individuals are characterized by greater activity. For highly reactive individuals, maintaining an optimal level of excitation requires limiting activity. Temporal characteristics of behavior are expressed in the speed of reactions, mobility, or plasticity (i.e. the ability to move from one reaction to another, which is measured by the shortest time between stimuli necessary for an adequate response to them), aftereffect (the time during which the reaction continues after the impact has ceased). This also includes such characteristics of action as tempo and rhythm. Temperament is the central formation of the psychodynamic organization of a person. V.D. Nebylitsyn (1976) identifies three leading

components in temperament, related to the spheres of general activity, motor skills, and emotionality. Each of these components can be determined using psychological and psychophysiological research methods.

The original boundary concept of temperament is proposed by A. Elias (1990). It is based on the fact that temperament is an element of regulation of the stimulus system. It is understood by the author as a set of stimulus-regulated mechanisms that set the dynamics of behavior in a certain class of situations in a relatively stable manner. Temperament arises on the basis of biological prerequisites in the learning process.

Perhaps the most detailed review of the main concepts of temperament was made by Larsen, Randy J [21]. The author drew attention to the fact that the typologies of temperament or the set of features that make up this mental phenomenon proposed by various researchers differ greatly from each other.

Different authors point to different properties, considering them the most characteristic of temperament. Recently, more and more often in the works of domestic and foreign psychologists and physiologists, interest has been shown in the study of behavior at the level of physiological systems and humans as a whole. In the same conditions, different children behave differently, and distinctive behavioral traits are consistently manifested in a variety of situations. It is this stable individual style of behavior that is called temperament. Temperament is determined by the innate properties of the nervous system and is manifested in behavior by a stable combination of time and energy characteristics. Temperament marks all aspects of the human psyche as a whole. It colors not only internal mental activity, but also affects the choice of those situations in which the individual's unique behavioral style is manifested [2].

Modern psychophysiology explains the properties of temperament by the characteristics of three emotogenic systems of the brain: achievement, fight or flight, and behavioral inhibition. These systems control the individual's reactions to reward, punishment, and threat stimuli. The activity of the behavioral inhibition system is manifested in a decrease in current activity and an increase in the level of attention. Activation of the achievement system leads to impulsive behavior and a decrease in concentration. Each type of temperament can be characterized by a complex of both positive and negative psychological traits: «best» or «worst». Only positive or only negative temperaments do not exist. It is quite possible that the same situation can be assessed as dangerous by some individuals, and as attractive by others, depending on the temperamental and constitutional features of the inhibition and activation systems of behavior. Temperament, like all properties of the body, is subject to age-related changes. In childhood, changes in temperament are due to maturation. Having certain properties of temperament does not directly determine how the child's personality will develop. However, the indirect influence of temperament on the formation of personality is undoubtedly [19]. Gender differences in the structure of temperament are stable and are explained not so much by the results of training, education, but mainly by the action of innate biological factors. In the works of most scientists [14, 23, 32,], devoted to the study of temperament and behavior of children, it is noted that the manifestation of temperamental traits in younger schoolchildren is influenced by the environment, especially close (relatives, friends, teachers), a change in relationships (the child begins to be treated as an adult, putting forward new demands and responsibilities, often while leaving the previous children's rights), and a change in social conditions. Having assessed the contribution of biological and environmental factors to the development of deviations in behavior, according to many studies in modern Western countries, it was concluded that, in general, the influence of the child's personality traits prevails over parental influence [7, 29, 34, 35].

Temperament changes under the influence of upbringing, study, play, work. Of course, it is impossible to completely change temperament, since it is biologically determined. It can be changed within certain individual boundaries. Each of its properties («activity», «rhythm», «approach», «adaptability», «mood», «intensity», «threshold» of sensitivity, «attention», «distractibility») is not a discrete, single value, it has its own area, within the boundaries of which the property can change [37].

Thus, the conducted analysis of literary data shows that at the present time there is no reliable information about the influence of the type of temperament on the state of somatic health.

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