

FORMATION OF LIFE MEANING AND HEALTH AT THE FOUNDATION OF FUNCTIONAL EQUIVALENCE THEORY

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At the foundation of functional equivalence theory it has been shown that the sense of an organism's function, meaning of life, condition of preserving health and remoting time of death is elimination of constantly-emerging imbalances that exist as early as at the stage of zygote. Human needs are development of imbalances of a different level of expression, caused by overflow of informational, physical, and chemical factors that is formed over the course of life, and these factors cannot be removed from an organism independently without a risk of structure disturbance. In order to liquidate imbalances it is necessary to find "channels" of establishing equivalence, they allow for transformation of overflow in informational, physical, and chemical components of life into functional and structural changes in an organism. Such processes, for example, as elimination or synthesis of certain substances, renewal of cellular composition, change in mass and volume of organs and tissues, change in motion and behavioral activity. Summary changes in informational, physical, and chemical factors after certain needs have been fulfilled are equal to such before the fulfilment. Only the proportion between the mentioned components of life activity processes changes. In case when temper of imbalance development exceeds temper of equivalence establishment stress develops that facilitates emergency formation of an adequate reply along different "channels" by an organism. At the same time, emotional stress can serve as an indicator of imbalance liquidation degree.

Keywords: theory of functional equivalence, needs, meaning of life, health, healthy lifestyle, emotional stress

In modern conditions one of the problems in establishing psychological comfort of a person is formation of meaning of life [9]. However, psychological comfort is unlikely to be achieved without establishment of a necessary level of health that requires formation of healthy lifestyle and presence of adequate medical activity [4]. The latter is achievable only in case of understanding the significance of health preservation. But, what is this meaning? The "New Encyclopaedic Dictionary" defines the meaning or sense as "internal logical content, significance of something, comprehended by mind; idea, essence, purpose, as well as end goal (value) of something (e.g. meaning of life, etc.)" [7]. At the same time, when speaking of self-actualized people, A.G. Maslow wrote: "... They... devote themselves to search for... value of existence – search for main eternal, underlying values that cannot be subordinated to any other, more important... These values... emerge as needs and behave accordingly... These are metaneeds" [6]. Thus, A.G. Maslow, on the one hand, established certain relations between needs, values, and meaning of life, and, on the other hand, he actually equaled meaning of life to metaneeds. In this regard the next step should be understanding of what needs are. There are many definitions of needs. For our theory most exact is definition by K.V. Sudakov [8], he wrote that needs are stable deviations of vital constants of an organism from the level that provides for its normal activity and create initial stimulus of activity in functional systems not only at physical-chemical basis, but also at informational foundation. While developing the idea by P.K. Anokhin that within lively sys-

tems initial and final link in information transition should be comparative, K.V. Sudakov wrote that within every link of a functional system one can find traits of a need and its fulfilment, in other words, certain equivalence. However, the above-mentioned authors studied equivalence only within the limits of lively systems as a condition of transiting information from one link to another.

However, we suppose that informational, physical, and chemical impacts upon an organism should be equal to totality of the transformed within the organism and eliminated from the organism informational, physical, and chemical components of life activity. Thus, in our opinion, a need is development in imbalance of different expression degree, caused by an overflow of informational, physical, and chemical factors that emerges over the course of life and cannot be eliminated by the organism independently without the risk of structure disturbance. Fulfilment of needs is a search for "channels" of equivalence establishment, in other words, increased or decreased number of informational, physical, and chemical stimulus for elimination of this overflow. The final result of fulfilling needs is establishment of equivalency due to transformation of surplus in informational, physical, and chemical components of life activity into functional and structural changes in an organism. Such processes, for example, as elimination or synthesis of certain substances, renewal of cellular composition, change in mass and volume of organs and tissues, change in motor and behavioral activity. Process of equivalency establishment can happen gradually. These grades we can define as "system quantum" according to

K.V. Sudakov [8]. Thus, while establishing imbalance, even if we received something from the outside, we give away a part of us in form of metabolites, products of life activity, hormones, movements, emotions, thoughts, words, and dreams. At the same time totality of physical, chemical, and informational changes in an organism after the needs are fulfilled is equal to the same before the fulfilment. Only proportion between physical, chemical, and informational components of life processes changes. Formation and elimination of imbalances goes on continuously over the course of life. In our work on problem of adaptation [1] we pointed out that theoretic foundation of our ideas is, on the one hand, thermal dynamics of irreversible processes, as according to I. Prigozhin. On the other hand we have a statement by I.I. Yuzvishin on the fact that total amount of information (i) and entropy (s) of i-condition of space or its corresponding area that emerges in result of any process, is always constant. Estimations by I.I. Yuzvishin prove that heat, work, and energy are forms (methods) of displaying (transiting) information. In this regard, from the position of our theory, imbalance emerges as early as at the stage of zygote and is defined by initial level of imbalance. The sense of an organism formation is, in our opinion, establishment of balance. Gradual process of forming equivalency allows us to slow the process of approaching complete balance – death. Elimination of imbalances without consequence for vital processes is possible only in amount pace, mostly defined by genetic features of an organism [3]. Generally, the meaning of our life and sense of forming a healthy lifestyle is timely elimination of imbalances at optimal pace in order to remote the time of death. At the same time, we cannot lower the degree of inborn imbalance. It is in our power only to limit it by establishing equivalency in timely manner. The pace of establishing equivalency, according to our theory, is highest with human embryo. As an organism ages, pace of equivalency establishment slows down. V.M. Dilman [5] wrote; "...When growth stops, the ongoing changes in physiological parameters that define condition of energetic, adaptive, and reproduction systems, no longer reflect dynamics of age norm, but the degree of oscillation from it, as rate of death, caused by major diseases is at lowest when these physiological parameters correspond to the level, typical for age of 20-25." We suppose this statement confirms our opinion on the fact that an optimal pace of equivalency establishment, particularly defined by abilities of an organism, achieved by the age of 20-25, provides for minimization of potential

costs for a specific person, thus supporting the best possible conditions for life and health. At the same time we suppose that the role of mind in process of forming and eliminating imbalances, should be outlined. On the one hand, through concentrating an individual's attention upon significant, in their opinion, problems and goals, our mind can strengthen informational consequences of vital processes, in other words, degree of imbalance development. On the other hand, a person can consciously avoid situations that increase individual unequivalence and, especially in case of preparation, find "channels" of equivalency establishment quickly. To preserve health, from our point of view, it is important to realize if the formed needs (imbalances) are actually necessary for a person or no. We should underline that needs are formed with embryo in mother's womb. After birth further development of system of needs takes place at both unconscious and conscious level. In process of upbringing within family and educational institutions of different levels, an individual obtains skills of eliminating the emerging imbalances through the formed "channels" of equivalency establishment. Modern society, interested in creation of a "qualified consumer" forms additional imbalances that are often unnecessary, within a person via means of mass media. At the same time, advertisement imposes "channels" of eliminating artificially-created imbalances through purchase of goods and services. As a result, development of economy through growth in sales volume can lead to degradation in population health and shorten its lifespan. Besides, constant participation in race of consumerism can keep a person from realizing and fulfilling metaneeds by A.G. Maslow [6], as well as finding their meaning of life. Conscious and unconscious formation of imbalances happens together with formation of certain hierarchical order of such imbalances. But, a person's abilities to eliminate these imbalances is limited by a person's health level on the whole as well as by specific system (organ), within which pace of equivalency establishment cannot exceed (not without structural consequences) minimal, in comparison to other organs and systems, value ("weak" link of an organism). A person, in our point of view, should constantly consider if elimination of certain imbalances (achievement of goals, often false ones) is worth risking their health, know and account for "weak" links in their organism.

How can an individual understand that needs are not fulfilled, and meaning of life is not found? To answer this question we should address the problem of stress from the

position of theory of functional systems in which a subject cannot fulfil their needs [8]. But, according to the theory of functional equivalency, an outlook of causes of stress can be different. The sense of stress reaction, in our opinion, is a response to situation when pace of imbalance development due to impact or sudden lack of impact of informational, physical, or chemical factors exceeds pace of establishing equivalency. In such case happens an effort of emergency equivalent response along different "channels". As a result, change in function of practically all systems of an organism takes place. However, since an organism reacts in emergency, stress in this phase of its development happens along with a considerable disintegration in work of functional systems [8] and negative emotions. Such type of stress that is also called acute, emerges when imbalance is expressed significantly and formed suddenly, for example, in effort to survive in a fire. In case an imbalance exists for a long period of time, in order to find "channels" of establishing equivalency in an organism chronic emotional stress is developed. In our opinion, its displays at the background of negative emotions can be described as condition of frustration, suspense, cognitive dissonance. If we are studying imbalances, related to efforts of fulfilling metaneeds of find meaning of life, we can speak of "existence vacuum" according to V. Frankl [10], or even remorse. We suppose that continuous lack of eliminating imbalances via establishing equivalency leads to such consequences as syndrome of emotional burn-out, syndrome of chronic exhaustion, neurosis, psychosomatic diseases, and finally, lifespan shortening. However, the needs can be fulfilled, and the meaning of life can be found. In case of establishing complete equivalency positive emotions are formed within a person, and transition from disorganization to correspondence in work of functional systems happens [8]. A sign of high-level imbalance elimination can be discovery of creative values by a person, as well as values of experience, and values of relationship according to V. Frankl [10], and also their self-actualization. V. Frankl [10, p. 58]. Also wrote: "... Like happiness, self-actualization is only a result, consequence of realizing the meaning of life". Another example of establishing complete equivalency can be catharsis as a result of finalizing unfinished situations [2].

Thus. Life always has a meaning, regardless of if a person realizes it or not. The meaning can form at unconscious or conscious level. While working on determining the meaning of life, within process of psychological of psycho-

therapeutic assistance, one should first of all evaluate indexes of lack of fulfilment of needs and the formed meaning of life. While estimating hierarchy of imbalances for a certain patient, it is necessary to reveal the most expressed ones, and also find ways to eliminate a imbalance. At the same time a patient should understand if their imbalances reflect their own unrealized interests and intentions, or they are created by someone else in order to use the person in their own interest (elimination of imbalance). According to principles of dominancy [8], in process of eliminating the most significant artificially-created imbalances a person tends to neglect natural imbalances, related to vital processes. A cost of such behavior can be diseases. The sense of health lies in the idea that when balance is being established at an optimal pace, and no risk of structural changes in an organism, a person will experience positive emotions more often, and more like to achieve self-actualization, realize their meaning of life. Explaining the sense of health to people is, in our opinion, the foundation in forming a healthy lifestyle. Components of healthy lifestyle programme can be presented as "channels" of establishing equivalency.

Thus, theory of functional equivalency, in our opinion, allows us to make work upon formation of the meaning of life as well as healthy lifestyle more conscious and efficient.

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The work is submitted to the International Scientific Conference "Topical issues of science and education", Moscow, may 20-22, 2019, came to the editorial office on 08.05.2019.