

Hyperstimulation of the Limbic Anti-Stress Barrier in the Genesis of Emotional Disorders

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ABSTRACT

Stress-inducing stimuli, both those originating from the transmission of the current situation from the sense organs and those generated vicariously by the neocortex, activate the emotional protective barrier, shifting the analytical-executive decision-making of thinking from the neocortex to the old one, focused on symbolic-impulsive thinking. This is associated with the dominant use of deeply implanted personality patterns from the period of individual emotional maturation and atavistic defensive reactions.

Keywords: Urban megaorganism; limbic anti-stress barrier; Short information loop; Symbolic-impulsive thinking; Emotional maturation; Intuitive Protective Barrier (IPB); Emotional alienation

INTRODUCTION

Thanks to new research methods that allow for non-invasive examination of the functional state of brain structures, we now have a number of detailed information on the role of limbic system structures in generating and controlling emotions, the ability to read non-verbal signals and intuitively analyze situations, and controlling basic instincts, including defensive reactions such as fight or flight. This research supports the concepts of Paul Maclean, accepted for over 70 years, that the central nervous system of homo sapiens is an evolutionarily shaped functional unity of three largely autonomous parts - the reptilian brain, the mammalian brain, and the human brain [1]. Over millions of years of evolution, a dynamic balance has been formed between these parts, allowing for collision-free cooperation of the old parts of the brain adapted to independent life and the fight for survival, with the new specifically human part, managing the collective existence and collective creativity of man. This balance, as a result of the current rapid acceleration of homo sapiens evolution, adapting it to function as an element of a macroorganism, at the cost of losing the ability to exist independently, has been permanently disturbed. Man evolutionarily adapts to a stationary collective existence, becoming capable only of existence as its integral element, a part of a megaorganism. The basis for the formation of megaorganisms of homo sapiens civilization are urban

organisms (POLIS) developed for over ten thousand years [2]. Urban organisms have all the components that a living organism requires, such as routes for supplying nutrients, routes for removing their metabolic products, organs generating energy resources and ensuring their distribution, and an extensive teleinformatic network ensuring the management of the entire organism. The exponential acceleration of many evolutionary processes of the current period of the turn of the industrial era and the post-industrial era also concerns the process of human adaptation to existence within new forms of collective existence-POLIS macroorganisms. The consequence of this process is the gradual regression of organs necessary for independent existence in the natural environment, including the musculoskeletal system, immunity as well as the brain, whose functions are taken over by collective intelligence, including artificial intelligence. These changes are in conflict with the functional priorities of the old parts of the brain protected by the limbic anti-stress barrier LAB [2,3].

The currently dominant way of interpreting the role of the old brain treats it as a subordinate, executive background for the activity of the purely human brain, as the only organ of a human being capable of thinking. Thinking, understood as the ability to analyze the surrounding environment and draw conclusions to adapt to its changes, is already characteristic of single-cell elements of the human body as well as their organ groups and

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functional systems. A person verifies the emotions experienced by registering numerous signals from the body's organs, which are the basis for the instinctive assessment of the degree of threat, reflexively activating the defensive reactions of evolutionarily old brain structures. This "thinking" of the visceral organs and muscles, accumulating the memory of alarming signals about the threat, conditions the way the limbic system reacts to stress-inducing stimuli coming from the sense organs and the neocortex. The indicator of the state of the natural organ buffer that conditions the body's response to stress is the state of balance between the sympathetic and parasympathetic nervous systems. The stress response is not only the activation of selected hormonal pathways, but in the case of prolonged stress, it leads to switching the entire functioning of the organism to emergency mode, because all metabolic and functional paths of the organism are interconnected. Long-term functioning of the organism in emergency mode is toxic and destructive, which is why the organism is equipped with evolutionarily distant multi-level defense mechanisms, including those operating at the level of limbic system structures, capable of cutting off stressful stimuli from the neocortex. The main executive element of the discussed safety mechanism is the symmetrical structures of the thalamus, which are the place of integration and verification of information from the sense organs reaching the cerebral cortex. The structures of the thalamus are responsible for the alternative use of the short information loop bypassing the neocortex, instead of the long information loop involving the neocortex (Figure 1).



Figure 1: Stress-inducing stimuli.

Stress-inducing stimuli, both those originating from the transmission of the current situation from the sense organs and those generated vicariously by the neocortex, activate the emotional protective barrier, shifting the analytical-executive decision-making of thinking from the neocortex to the old one, focused on symbolic-impulsive thinking. This is associated with the dominant use of deeply implanted personality patterns from the period of individual emotional maturation and atavistic defensive reactions. Conscious behaviors, controlled by the neocortex, in these situations have only a minority share in shaping the individual reaction to a stressful situation. The simplified, common understanding of the intellectual work of the brain treats emotions as a periodic interference in the course

of rational thinking, as the insertion of an external component that disrupts sober thinking. In reality, emotions and the associated instinctive-driven thinking path constitute the basis of our mental functioning, an integral emotional component accompanying every mental activity. The individual development of a human being is initiated by a several-year period of dominance of emotional-drive interactions and archetypal symbolism of thinking, followed by a long period of emotional maturation, which is determined by the 25-year period of functional maturation of the old cortex of the limbic system - the cingulate gyrus, which plays the role of a mediator between the intuitive thinking path of the old cortex and the rational thinking of the new cortex and the generator of reflexive motor activities [4]. During emotional maturation, we take over from selected people with whom we emotionally integrate, such as parents, patterns of intuitive interpretation and behavior in emotionally activated situations. For the full maturity of a human being in the dimension of a collective being, it is not only functioning within the real network of interpersonal contacts, but also having its virtual counterpart within the mental structure. The world of human mental existence must be populated with such characters that can be a reflection of both significant figures from childhood, such as parents or siblings, as well as virtual entities, such as the figure of God, national heroes or historical family figures. Characters implanted into the virtual mental world require constant "feeding" with real or virtual contact with memories. For a fully qualitative human existence, it is necessary to populate both worlds, the real and the virtual. Temporary shortages of contacts in the real world can be made up for by contacts in the virtual world, which does not happen when it is impaired. Dysfunction of personal and family functioning during long periods of quarantine during the Covid-19 epidemic, was associated with impaired support for the emotional development of children and the erosion of existing personal and moral authorities and the experienced sense of loneliness and lack of prospects, results in many people with a permanent impairment of the quality of mental functioning (Figure 2) [5].

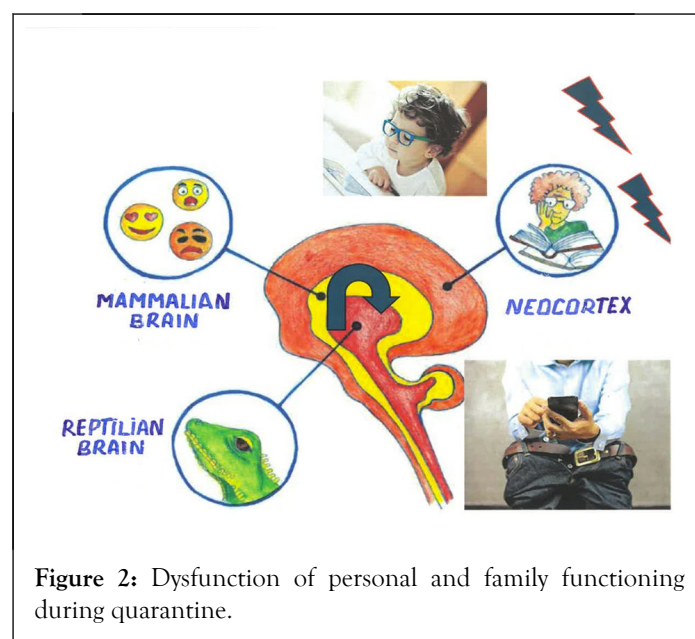


Figure 2: Dysfunction of personal and family functioning during quarantine.

This dysfunction is expressed by the overactivity of the Intuitive Protective Barrier (IPB), which is a component of the limbic anti-stress barrier LAB, which leads to the dominance of intuitive thinking over the logical-rational thinking of the neocortex. The action of the protective barrier IPB is confronted with both the alarming fear images reaching it from the neocortex, as well as the signals from the body and structures of the limbic system that mobilize alarm activation and at the same time inhibit their execution by dispositions from the neocortex based on the priorities of social relations. The resulting effect is often the instinctive activation of the escape reaction with a modified expression, limited to alienating attitudes, withdrawal and suspension of interpersonal contacts. Emotional alienation resulting in social alienation is combined with the suppression of the life instinct and toxic biological somatic consequences of a chronic, alarm stress reaction. The current phase of civilizational transformations and their exponential acceleration has caused the pace of transformations to disrupt the readability of the external world through its comparative reading to both previously learned conscious interpretation patterns and their counterparts in virtual existence. As a result of integration with smartphones and other information carriers, we are bombarded with a massive inflow of information and drawn into the analysis of thousands of situations and people, in a context distant from us, making it difficult to relate to our pool of integrated patterns and characters. This significantly exceeds our ability to process information that is invading us with a dominant threatening expression, which activates our emotional defense mechanism by reducing their absorption and activating patterns of thought and action with a dominant impulsive-driven character.

CONCLUSION

Forced continuation of professional activity with chronic remaining in a situation that the body perceives as a critical threat, with the body switching to an emergency mode of functioning, leads to emotional burnout with significant accompanying somatic consequences. The discussed dependencies apply in particular to Western civilization, where, despite a high level of prosperity and doubling of life expectancy, the most frequent manifestations of negative emotional symptoms are observed, including depression, anxiety and professional burnout.

REFERENCES

1. MacLean. The triune brain in evolution: Role in paleocerebral functions. Springer Science & Business Media, New York, 1990: 672.
2. Wasilewski B. Psychosomatic approach and the evolution of medicine in the 21st century. In: Wilczek-Rużyczka E (Ed). Man in a health-threatening situation from the perspective of psychosomatics. Jagiellonian University Publishing House, Kraków, 2020.
3. Wasilewski B. Psychosocial aspects of current civilization challenges from the perspective of a Balint group leader. Arch Psych Psych. 2022;4:62-67.
4. Rahman Z, Murray NW, Sala-Padró J, Bartley M, Dexter M, Fung VS, et al. Investigating the precise localization of the grasping action in the mid-cingulate cortex and future directions. Front Hum Neurosci. 2022;16:815749.
5. Wasilewski BW. Updating the perception of a human being and its mental functioning. J Psychiatry Psychiatric Disord. 2020;4(1): 21-30.