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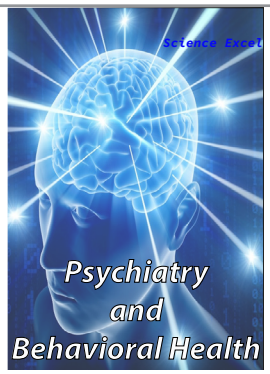

What Is Mind? A Holistic Perspective

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Abstract

The object of the concept of mind and how it interacts with the brain and the environment are still unclear. This article argues that healthy or impaired states of mind are identical to the neurobiological functions of the brain; however, it suggests that changes in these functions are the result of the organism's mutual causal interaction with its environment. According to this perspective states of mind cannot be reduced to the brain or social factors alone. Additionally, this article provides a brief critical review of prominent psychological and psychiatric models of the mind from a holistic perspective.

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Mind Problem

The mind is a subject of common interest across disciplines such as psychology, psychiatry, philosophy, sociology and neuroscience. The reason for this interest is that the question of the relationship between the mind and the brain is still a matter of debate [1]. Western psychiatry adopts a simplified Cartesian dualism that proposes two fundamentally irreducible ontological categories (a physical body-brain, and a disembodied mind), but there is still no consensus on the best model to explain the causes of mental illness [2]. According to Kuhn [3], members of a mature scientific community generally work from a single paradigm or a set of closely related paradigms. Using Kuhn's criterion, Kendler [4] suggested that psychiatry is in an 'immature pre-paradigmatic' state.

When it is accepted that the mind is a set of functions (consciousness, perception, attention, thought, emotion, memory, abstraction, behaviour, etc.), it is still unclear what the object of these functions is and how they are related to the brain and the environment. Since mental phenomena exhibit subjective, non-directly measurable characteristics and are not independent of social value judgements, they are unsuitable for naturalistic, empirical scientific investigation. Due to these limitations, the main problem remains the lack of an explanation for the interactions between the mind, the environment and the brain.

This article aims to offer a new perspective on the relationship between the mind, the brain, and the environment, based on two interrelated hypotheses concerning the nature of the mind. Additionally, leading psychological and psychiatric theories of the mind are critically reviewed from a holistic perspective.

Modern Society, Conflict and Stress

Human beings are biological and social beings. It is imperative for humans to satisfy their biological and social needs in order to maintain the survival and homeostasis of their species. Humans can only satisfy these needs by living in society and working to produce the objects of their needs. What distinguishes societies throughout history is how they are organised, primarily economically, to meet basic human needs.

Generally presents modern societies as a system based on private property, where free individuals enrich themselves and society by pursuing their personal interests. In this system, personal competition is paramount, individuals work on the basis of mutual consent and division of labour in economic relations. In this way, goods that satisfy basic human needs are produced and exchanged. According to modern individualist view, this system is fair and in accordance with human nature, because individuals acquire money and capital according to their abilities and efforts.

The main characteristics of these modern societies are individualism [5], competition, earning money and accumulating goods as status indicators, measuring human actions by market values and encouraging consumption [6,7]. The individual consequences of adopting this dominant value system of modern societies are as follows: separation of individuals in society into winners and losers; fear of failure as a source of anxiety, depression and hopelessness [6,7]; perception of failure as a personal defect and inadequacy [8], association of happiness, life satisfaction and superior status with accumulation of money and goods; weak social ties and relationships; loss of individual self-confidence and self-esteem [9].

Freud [10] stated that people become unhappy when they cannot withstand the inhibitions

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that society imposes on them through cultural ideals, and that the reduction or elimination of these demands can restore the possibility of happiness. In my view, the primary conflict between the individual and society is between the demands of individuals living in a society for the fulfilment of their basic needs and the social reality that does not allow and suppresses the fulfilment of these demands. If the primary conflict remains unresolved, the individual's sense of homeostasis is disturbed and stress arises. Whether individual stress can be resolved depends on the nature, severity and duration of social stressors (primarily economic, socio-cultural inequalities, family, religious, political/ideological, ethnic, racial and gender discrimination, etc.) and the individual's biological (genetic, temperamental, intelligence, etc.) and social coping and support resources (economic, family, cultural, religious, etc.). Failing to cope with stress can lead to abnormal neurobiological changes in the brain, resulting in mental health problems. This is the brain's neurobiological adaptation to chronic stress

The Neurobiological Consequences of Unresolved Organism-Environment Conflict

Physical and social environments have powerful effects on the body and brain through the neuroendocrine, autonomic and immune systems [11]. In the acute phase of stress, the sympathetic nervous system and the hypothalamic-pituitary-adrenal (HPA) axis are activated in the organism, preparing it for the biological 'fight or flight' response to maintain homeostasis, glucocorticoids are released from the adrenal cortex and noradrenaline from the medulla [12,13]. The HPA response of the organism to stress changes with chronic stress exposure [14]. Chronic stress exposure has been reported to be associated with an increased risk of neuropsychiatric disorders [15]. It has been suggested that prolonged and intense stress may trigger psychological and cognitive deficits such as depression and anxiety by causing structural and functional damage in key brain regions such as the hippocampus, amygdala, hypothalamus and prefrontal cortex [16]. The neurobiological effects of chronic stress are associated with loss of synapses in the prefrontal cortex, decreased neurogenesis in the hippocampus [17] and neuronal dendritic hypertrophy in the amygdala, which is associated with emotional processing, underlying cognitive and behavioural deficits [14].

A study of conditioned learning in Aplysia has suggested that the environment can alter brain structure and that the nature of brain-environment interaction is bidirectional [18]. Epigenetic modulation, defined as inherited changes that do not depend on genomic sequence, may act at the interface between the environment and genes [19]. There is evidence from human experiments that environmental factors induce epigenetic changes [20]. Epigenetic modifications are all important mechanisms that cause changes from transient environmental stimuli to permanent changes in gene expression and ultimately behavioural changes [21]. It has been reported that activation of glucocorticoid receptors during stress causes epigenetic and transcriptional changes in the nucleus and that chronic stress can permanently affect brain function by altering gene expression [22]. Gene-environment interactions influence susceptibility to disease by causing epigenetic changes in gene expression patterns, which are the on/off switches of genes [23]. Depending on the environment, epigenetic changes are either adaptive or maladaptive, either protecting against illness or increasing the risk of illness [24].

Normal / Abnormal Mind: Two Hypotheses

I present two interrelated hypotheses concerning the nature of mental states, the formation of normal and abnormal mental states, and the influence of environmental and biological factors on mental state formation. I will then discuss whether progress can be made in solving the problem of the mind on the basis of these two hypotheses.

Hypothesis 1: Mental functions are identical to the neurobiological functions of the brain; however, neurobiological functions are not identical to the brain itself.

Mental functions are, in fact, neurobiological functions of the brain. However, this does not mean that mental functions can only be explained by the brain. The brain is an organ of communication that is constantly in mutual and causal interaction with the body and environment via a network of nervous systems spread throughout the organism. These interactions serve to maintain homeostasis by providing adaptive responses to the ever-changing physical and environmental demands placed on the organism. As a result of these interactions, the neurobiological functions of the brain change. At the same time, the organism changes the body and the environment, whose neurobiological functions have also changed. This mutual, causal interaction of organism and environment can explain the constant change and development of human existence and the environment throughout history..

Hypothesis 2: The biological equivalent of mental disorders is impairments in neurobiological functions, but these impairments are not the cause of mental disorders; rather, they are their consequence.

The biological equivalent of mental disorders should be sought in impairments to these functions, because the adaptive or non-adaptive biological result of the aforementioned interactions is manifested by changes to them. However, mental disorders cannot be caused by impairment in these functions because this impairment is a consequence, not a cause, of organism-environment interactions. For instance, it is incorrect to attribute depression or anxiety disorders to dysregulation in neurotransmitter systems (e.g. serotonergic or noradrenergic) in the brain, as this dysregulation is a consequence, not a cause, of these disorders. In a modern, individualistic society, health and disease states are assessed individually. This conceals the real cause and presents the 'result' as the 'cause'. The ideological consequences of framing social problems as individual pathology distract attention from structural inequalities and injustices [6].

Mind Functions, Brain and Environment: A Critical Perspective

Thinking of mental functions as brain functions may initially be subject to the criticism of reductive physicalism, in the sense that the mind is reduced to the brain, but this view overcomes possible objections by explaining the neurobiological functions of the brain in terms of bioenvironmental interaction and the mutual causal role of both factors.

Mainstream psychology operates with mechanistic, i.e. atomistic and reductionist, models of the human mind [25]. It has been argued that the claim that thoughts cause actions is an 'untestable assumption' and that cognitive explanations cannot be accepted unless cognitions themselves are explained in terms of external events and/or neurochemistry [26]. Psychosocial theories do not give sufficient weight to

biological factors in mental functioning, and psychologism, including psychoanalysis, treats social processes and conflicts as psychological and individual, a structural weakness of psychology [27].

Psychopharmacology and neuroscience claim that mental functions are structures and functions of the brain, but these approaches are incomplete because they exclude social factors in explaining mental states. Research into the neurobiological response to stress needs to focus not only on the brain, as neuroscience does, but also on the conflict between the individual and society, which is the real cause of stress. When this conflict is not resolved, the individual becomes stressed, and acute and chronic stress leads to neuroendocrine, neurochemical and epigenetic changes in the brain. The failure of neuroscience is its stubborn unwillingness to recognise that these changes in the brain caused by chronic stress, when the conflict between the individual and society cannot be resolved, are the result, not the cause, of mental disorders. Underlying this reluctance is the persistent belief that mental disorders have individual, biological causes and are unrelated to social factors, a belief that is, not surprisingly, fully compatible with modern individualist view.

The biomedical model, the dominant paradigm of general medicine, is an incomplete model not only for psychiatry but also for general medicine. By individualising and medicalising the physical consequences of conflicts, stresses and problems arising from the interaction of the biological organism and the environment, this approach overlooks the role of social factors in the development of physical illness. An important consequence of medicalisation has been reported to be the moral and political neutralisation of such problems [6].

The alternative to the biomedical model is the biopsychosocial model, which is the mainstream ideology of contemporary psychiatry [28]. However, the biopsychosocial model has failed to provide a conceptual explanation of the nature of the interaction between the three distinct sets of biological, psychological and social factors [29]. There is a need to explain how states that are considered non-physical, such as the mind, interact with physical states, such as the brain [30]. Once it is accepted that the neurobiological functions of the brain are a 'consequence' rather than a 'cause' of the reciprocal interaction between body and brain, and between individual and society, it can be understood why the therapeutic effects of psychopharmacotherapy and psychotherapy, as current forms of treatment for mental disorders, are temporary and limited. According to the logic of individual psychology, the environment will not be changed for the treatment, because the environment is always considered unchanging for all bourgeois economies and sociology [31]. As long as the social factors that affect the neurobiological functions of the brain are not changed or corrected, the effectiveness of these forms of treatment will remain symptomatic and palliative. Furthermore, psychopharmacotherapy and individual psychotherapy imply that individuals are problematic and defective, while reinforcing ideals of individualism and ignoring the social conditions and injustices that contribute to distress [7].

Conclusion

Neither the individual nor society can be explained in isolation from the other. Contrary to biological and psychosocial reductionism, both biological and environmental factors must be considered as causal agents when explaining the mind. The neurobiological functions of the brain are mental functions that result from the mutual causal interaction between the organism and the environment. This integrated approach to the mind could contribute to a coherent, unified, holistic paradigm in psychology and psychiatry, by bringing together concepts such as mind, brain and society, which are usually considered separately. Furthermore, this approach can facilitate the integration of various disciplines (e.g. psychology, philosophy, sociology and neuroscience) that are currently isolated by the principles of division of labour and competition in the modern social system. This integration can be achieved by embracing the principles of cooperation and solidarity in the study of mind, brain and society relations.

The scientific investigation of how individual and social factors interact to affect the neurobiological functions of the brain should be the main research goal of the various scientific disciplines related to the mind.

Finally, while numerous views have been put forward on what constitutes an ideal society and how to provide optimal living conditions, none have considered the structure of the human brain, its biological and social coping capacity, or its limits. Once the vital importance of the interaction between organism and environment in the development of mental health and disorders is fully understood, everyone, especially administrators, community leaders, economists, politicians, artists and scientists, can cooperate to create an environment and social system that promotes mental health.

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