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# NEUROPSYCHIATRIC DISORDERS AND EMERGENT SUBSTANCE DUALISM

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## Abstract

Despite the numerous reasons of substance dualists on the immaterial existence of the mind, which according to them is the true self and soul, various contradictory theories have emerged about it by observing the effects of neurological disorders on mental states and personality traits. These theories can be classified into three kinds: those that deny the survival of the immaterial existence of the self/mind/soul, those that deny its immaterial substantiality, and those that consider its existence as a delusion. Meanwhile, substance dualists often suggest the theory of instrumentalism, which is prone to errors. However, a more accurate solution has been suggested that acknowledges emergent substance dualism and considers the hierarchical dependence of the emergent soul on the body. In proportion to the development and complexity of the body and the neural complex system, various levels of the soul (from the vegetative level to existence in itself for itself the autonomous human rational soul) and proportionate mental properties emerge. At all levels, the body has bottom-top causality for the soul, and its function or malfunction. The dependence of the soul at lower levels on the body is essential (intrinsic), and bodily injuries can destroy this level of the soul essentially; the dependence of 'in itself and for itself existence' of the rational soul (autonomous level) upon the body is accidental. Because of these intrinsic and accidental emergentist co-dependences of the body and soul/mind substance, various neural injuries can cause mental disorders to emerge as disturbing properties for the soul/mind substance. Such injuries can also submerge some (intact) mental emergent properties. So, the simple, in-itself-for-itself, autonomous, or separable existence of the soul/ mind-substance (after the destruction of the body) is intact from the accidental disturbing emergent properties of the body and intrinsically is hostage to what it has earned voluntarily and consciously.

*Keywords:* soul, mind, neuropsychiatric disorders, emergentism, dualism

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## 1. Introduction

In philosophy of mind, some great philosophers are substance dualists. According to the various versions of substance dualism, opposing the materialists and physicalists, "the self is a kind of non-physical thing that

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functions as the substrate for one's mental life. In Western philosophy, this non-physical entity is often referred to as the soul." [1] This soul, self, or immaterial mind-substance that is proved is: "1. The appropriate entity for exemplifying mental properties. 2. The appropriate entity for holistically unifying mental properties. 3. The appropriate entity for being an enduring mental continuant. 4. The appropriate entity for being the employer and referent of 'I'. 5. The appropriate entity for having an irreducible 'First-Person Point of View'. 6. The appropriate entity for being possibly disembodied as a unified centre of consciousness. 7. The appropriate entity for ontologically grounding claims like 'Necessarily, thoughts have thinkers'. 8. The appropriate entity for exercising active power and teleologically guiding a deliberative process toward an end." [2]

Some thinkers see Psychiatry and Neurology one field because of the mental disorders and brain dysfunctions rooted co-dependences [3, 4]. However, the mere observation of the causal co-dependence of neural processes and mental phenomena cannot be a justifiable reason to assume that ontologically distinct states of mind (e.g. consciousness, qualia, intentionality, first-person limited access to thoughts, and free will) are the same as the observable functions of brain and mind [5, 6].

Fundamentally, emergentism avoids this fallacy. In this view, a system's components give rise to a more complex and developed structure and organization through their internal interactions, processes and rules; consequently, novel properties emerge. Regarding the lower levels of organizations, these novel properties are unpredictable and unexpected; they are also irreducible to lower levels [7]. These organizations are characterized by various aspects such as self-maintenance, systemness, bottom-up emergence, downward causation, nonlinear causality, circular causality (feedback loops), hierarchy and unity in plurality [8].

Clear instances of emergence include the emergence of different hierarchies of life from inorganic matter and the emergence of the mind, subjectivity, and mental states - for example, various types of consciousness, feelings, will and creativity from the neural substrate.

Both property emergentism and emergent substance dualism acknowledge the ontological distinction of mental states from the brain and nervous states. However, property emergentists attribute distinctive states of mind to the same physical neural structure but do not believe in the emergence of the substantial existence of the mind. Meanwhile, emergent substance dualism believes that some of these mental emergent properties are not attributable to the brain or nervous system. Instead, they claim that the emergence of these properties relies on the priority of the soul/mind-substance's emergence (i.e. the emergence of a psychologic subject of thinking and experience) [9].

Thus, emergent substance dualism acknowledges the emergence of properties, whereas property emergentism does not acknowledge the substantial emergence. According to substance emergentism, when the electrical activities inside neurons such as dopamine-producing neurons cause pleasure, the

conscious experience of pleasure is a distinct emergent property of the physical-neural substrate. As a result, there is an emergent person/experiencer/subject who feels pleasure. In this way, pleasure has an ontological dependence on a subject. This perception is not material, nor are its preceptor and bearer. Rather, pleasure is produced for the soul/mind-substance.

From a scientific standpoint, the activities of the nervous system are not only correlated with the emergence of various mental states. Hyperactivity, inactivity, and a lack of efficient relationships between neurons and electrical circuits are also correlated with the emergence of various mental disorders [10]. A significant reason for denying the mind/soul/self is related to the severe effects of brain injuries and neurological disorders on mental states and even self-consciousness. Different cerebral injuries (with various causes) can lead to mental disorders and affect individuals' personalities, experiences, emotions, cognition, memories, social interactions, creativity, freedom of choice and motions [10, p. 188].

Here, the problem is not to analyse the *raison d'être* of the mind substance (soul). Rather, the problem is the following: If the human has the simple and indecomposable substance of mind/soul and, hence, is survivable and immortal, why does this mind/soul not remain undamaged after a brain injury? Why should a brain injury cause serious changes in an individual's personality and mental traits?

In progressive neurological diseases such as Alzheimer's disease, which destroy the patient's mental content so progressively that he/she loses nearly all his/her memory, is it correct to state that the patient's mind and memory remain intact when the disease goes away? It seems that if the soul is an immaterial substance that is separable from our physical identity, it should not be harmed by physical disorders. In other words, if mental states are realized and stored in the mind and soul, they should not be damaged and lost due to physical injuries.

In analysing this problem, we first consider some effects of neurological disorders on the self/mind/soul disturbances and the claims of those who deny the existence of the self/mind/soul. After the case responses to the problem and the deniers' claims are dealt with, the typical defence of dualists (known as the instrument theory) is presented and criticized. Eventually, a solution is suggested that takes advantage of emergentism and Sadr-Aldin Alshirazi's (Mulla Sadra) philosophy. This proposed theory considers the hierarchical dependence of the emergent soul on the body and states that the simple, in-itself-for-itself, autonomous (or separable) level of the soul's existence will be resistant after the death of the body, release of the unintended (accidental) emergent effects of its disordered body, and intrinsically is hostage to what it has earned voluntarily and consciously.

While our discussion does connect to the debate in the philosophy of mind, the result of this topic can be used by not only the philosophers of mind but also philosophers of religion and theologians. They have yet to take advantage of the resources of the philosophy of mind in any substantial way. Substance dualism is more successful in explaining theological issues such as

life after death and the identity of a person in the hereafter and worldly life [1], religious experiences, etc. The mind-substance can be hospitable to that part of the individual that partakes of divinity and often is considered to survive the death of the body. Peter Geach has suggested that meaningful talk of life after death would involve the reuniting of the soul “to such a body as would reconstitute a man identifiable with the man who died” [11] because it is only through the resurrection that it is meaningful to talk of an individual continuing to live or living once more. Like this Mandik says: “if substance dualism were true, there wouldn’t be any additional philosophical problem concerning the afterlife. One’s physical body may come to be destroyed at death, and the nonphysical substance which is the human mind can go on existing. The continued mental life of the thinking substance would indeed be, then, a life after death.” [12]

In addition, the origin of the soul is God not the physical body and brain in substance emergentism as mentioned above; the physical body and brain are the preparatory cause. The body appears to cause the existent soul to emerge and, the nonphysical substance of the mind/self/soul is the inspiration of God. The soul/mind emergence requires a cause beyond naturalistic explanation. No effect can be greater than its cause. Given this ontology, something qualitatively inferior in perfection simply cannot produce something qualitatively superior to itself. As the existence of an immaterial soul facilitates the interpretation of God’s breathing in man for the theologian [13-17].

## **2. Some of the challenging effects of neurological disorders on the self/mind/soul**

Clinical neuroscientific observations show that the functions of the right frontal, temporal, and parietal regions are essential to the emotional/reflective self, especially for personality formation. Lesions in these regions can cause serious personality changes [18].

The following mental disorders challenge the concept of personality identity and ‘self’:

- 1) Alzheimer’s disease: By the progressive worsening of memory, language, and visual-spatial skills in this disease, the person disappears slowly and he/she might even lose insight into his/her condition [19]. “Before the illness, these people, like anybody else, have different character traits such as being intelligent, caring, cultural, religious, and proud, etc.” [20]
- 2) Schizophrenia: One of the essential features of schizophrenia is the disturbances of the experiencing ‘I’ (*Ich-Störungen*). These disturbances overlap more or less the Anglo-Saxon concepts of ‘depersonalization’, ‘derealization’, ‘loss of control’, ‘disturbed ego-boundaries’, ‘passivity phenomena’ and ‘delusions of reference’ [21].
- 3) Dissociative identity disorder (or multiple personality disorder): This disorder is characterized by the presence of two or more distinct identities (diachronic identities) or personality states, which are sometimes referred to

as “alters, self-states, or parts as having its pattern of perceiving, relating to, and thinking about the environment and self, in short, its personality” [22]. It is challenging for substance dualists to explain the causal relationships between one body with multiple nonphysical minds/selves.

- 4) Split-brain patients: Undergoing a commissurotomy or a brain bisection operation, split-brain patients often experience synchronic identities [23].
- 5) Autism: Reportedly, autistic patients lack consciousness phenomenally and “are as blind to their own mental states as they are to the mental states of others” [24]. Failure to develop Von Economo neurons was normally considered a factor in autism spectrum disorder [25].

### **3. Different reactions to affectedness of the soul caused by neurological disorders**

Analyses of the different effects of neurological disorders on the mind and mental states have led to various conclusions.

#### **3.1. Fictionalists**

According to fictionalists, cases such as split-brain patients, schizophrenia, multiple personality disorder, and other relevant diseases show that the real ‘self’ does not exist. It is an illusion, a figment of the cognitive system or brain function. In describing multiple personality disorder, Dennett stated: “Some people [make] a simple arithmetical mistake: they have failed to notice that two or three or seventeen selves per body is really no more metaphysically extravagant than one self per body. One is bad enough!” [26]

Thomas Metzinger considers the phenomenal self as a deep-rooted illusion supervening at the neurobiological level and affecting brain properties [27]. To support his claim, he adduced the changes in self-models caused by drinking wine [28] or identity disorders and personality shifts caused by neural diseases [27, p. 525, 598].

#### **3.2. Denial of the immateriality of the self/mind/soul**

Some argue that if the personality identifies inside something nonphysical, then physical harm should not change the personality. For instance, Musacchio stated that “Alzheimer’s disease is the most dramatic and cruel demonstration that the mind is not a spiritual, indestructible, and supernatural substance but an aggregate of physical brain functions” [29].

#### **3.3. Denial of survival of soul and its features and capacities**

Despite accepting the immaterial substance of the soul, Swinburne and Hasker consider its survival a divine miracle after the death of the body after observing the effects of brain injuries on mental disorders [30-32]. Despite

propounding good reasons for the existence of the soul, Goodman and Caramenico stated that “the intimate linkage of souls with brains argues against equating substantiality with separability” [33].

Libet introduced the ‘self’ and the soul as emergent phenomena arising from brain activity, seeing the loss of ‘selfhood’ in Alzheimer’s disease as an indication that the soul or the self can change or perish under the influence of pharmacological agents and pathological changes [34]. Gennaro analysed the effects of neurological disorders on the soul functions (such as seeing, hearing, recognizing, understanding, remembering, thinking, and deciding, as well as the capacities for moral judgment, empathy, the experience of pleasure, emotions and desires), concluding that “a soul that persists after death would have none of the features and capacities that souls are thought to have” [35]. This, in Gennaro’s view, the soul’s immaterial substance cannot continue to exist nomologically, *per se*, after the corruption of the body and nervous system.

#### **4. Responses of dualists**

Dualists would offer the following responses to the above counterclaims against the immaterial survival soul.

##### **4.1. Case responses**

In response to fictionalists, the idea of ‘I do not exist’ or ‘I am a figment or an illusion’ clearly shows someone’s awareness, thought, and experience belonging to a subject, i.e. somewhere in which this thought or feeling occurs [36]. Considering the very unreal ‘self’, fictionalists argue against the existence of the ‘self’ and try to convince the other selves that the ‘self’ is not real. This is the reproof for the incompatibility of the view of fictionalists (or deniers or doubters of the ‘self’), which has long been discussed [37]. In addition, since mental disorders are ontologically different from the brain and neurological disorders, then they must realize in a nonphysical substrate or identity (mind). As George Graham has stated, “Mind and brain interact, no doubt. But the mental is not something neural. The mental of a mental disorder inheres in a special nonphysical entity.” [19, p. 76] Graham also stated “A mental disorder is a condition of mind. It is mind-dependent. If no mind existed, no mental disorder could exist” [19, p. 9].

Many mental disorders, such as confabulations or pseudo-reminiscence, are caused by brain lesions. In such disorders, there is also a first-person account and a subject who perceives these experiences, who quotes those stories and myths, even falsely. That these events and lesions in the brain lead to confabulations and similar disorders does not mean that confabulations and similar disorders occur inside the brain. Likewise, accurate perceptions and recollections of memories do not occur inside the brain, although the brain’s health is involved [38].

Regarding certain disorders such as autism, Gennaro argued that “an intense self-awareness might cause subjects to lack the typical awareness of others” [23, p. 343]. Furthermore, in Cotard’s syndrome and diseases in which thoughts are attributed to others, ‘I’ (the sense of subjectivity) is not deleted. The experiencing ‘I’ remains; however, this ‘I’ does not know and cannot find the origin of experience, nor does it experience the body or the environment (*i.e.*, the sense of agency is lost). Therefore, these cases do not reveal that the person believes in the nonexistence of the ‘self’ [39]. Graham stated these cases “show that feelings may be misread as beliefs as well as that a delusion is a complex multi-layered state which exemplifies a failure of self-comprehension and cognitive self-management. But nothing in that particular delusion makes the speech act of self-denial intelligible.” [19, p. 253]

Dissociative identity disorder does not indicate that we are unreal. According to the aetiology of this disorder, by which severe experiences of early childhood trauma (usually maltreatment) can be revealed, it should be considered an affective and defensive response of the ego that frees the person from various intolerable emotions of memories and imaginations of physical and sexual abuse. “The rates of reported severe childhood trauma for child and adult patients with the dissociative identity disorder range from 85% to 97% of cases. Physical and sexual abuse are the most frequently reported sources of childhood trauma.” [22, p. 458]

Hence, dissociative identity disorder is a single subject that creates many alternative selves (perhaps unconsciously) to ease mental stress [19, p. 229-230].

Also, “no split-brain patient has ever woken up following callosotomy surgery and felt as though his/her experience of self had fundamentally changed or that two selves now inhabited the same body” [40]. In both split-brain patients and patients with agenesis of the corpus callosum, “the two hemispheres may be independently co-conscious, but the subjective experience of a unified self is preserved” [40]. Moreover, extensive experimental studies suggest that severing the cortical connections between hemispheres splits visual perception but does not create two independent conscious perceivers within one brain” [41]. A brain-split patient is a single conscious agent that “experiences two parallel, unintegrated streams of information” [42]. In the end, what matters is that the concealment of the ‘self’ and conscious reactions does not necessarily indicate a state of unconsciousness or a lack of ‘self’. According to a few neurologists, such as Martha Farah, “some patients continue to experience the full awareness of themselves and their surroundings while being unable to indicate their awareness behaviourally” [43].

#### ***4.2. Typical responses of dualists***

Substance dualists and soul believers typically respond to the argument against the immaterial soul through brain injury and damage by citing the ‘instrument theory’. This theory has been interpreted in various ways. According to this theory, brain damage and the loss of particular brain functions can only

prevent the soul from communicating with the reality of the outside world. That is, the body is an instrument for the soul's actions, and therefore, these bodily disorders lead to the malfunction of the soul. As a result, the mind/soul cannot express itself through the body, nor can it transfer information from the body to the mind; however, brain damage has no adverse effects on the existence of the mind, which is entirely independent of the body and even on mental capacities themselves.

According to instrumentalism, the relationship between the mind and the brain resembles the signal and a TV set or a musician to a musical instrument. As Majorek argued: "A pianist cannot play a piano concerto when his piano gets damaged, or at least his performance is impaired by the damage to his instrument. Yet, it would be absurd to claim that the piano is the cause of the concerto. It is merely *a necessary condition* for its performance, not its cause. Similarly, it is a fallacy to claim that losing a mental function because of brain damage *proves* that the brain plays all the causal role in producing this mental function. It is also a fallacy to take a merely (under normal circumstances) *necessary* condition of an event to be the cause of this event, for a cause of an event is not identical to its necessary condition." [44]

Furthermore, Avicenna believed that a soul's operation in faculties such as estimation, supposition, sensation, and imagination worsen and deteriorate with illnesses of the body and old age, as the soul performs these operations by employing corporeal instruments [45]. However, the soul uses no instruments in contemplating its essence, meaning that aging and physical obstacles have no effects in this regard.

Specifically, Avicenna stated that: "The soul has two activities, i.e. an activity in relation to the body, which is its government and control, and an activity in relation to itself and its principles, which is intellection. These two activities are so opposed to each other and mutually obstructive that when the soul is occupied with the one, it turns away from the other, not being able to easily combine the two. Its functions in respect of the body are perception, imagination, appetite, anger, fear, sorrow, and pain. You can know this for yourself from the fact that when you begin to occupy yourself with the thinking activity, all the aforementioned activities would be suspended unless you overcame the soul and compelled it to return to them. This much you would surely concede that sensation prevents the soul from intellectual activity, for when the soul is engrossed in the sensible, it is diverted from the intelligible without the intellect itself or the intellectual organ being in any way impaired, and you would agree that its cause is the preoccupation of the soul with one special function rather than another. This is why the activity of the intellect ceases with an illness." [46]

According to Sadr-Aldin Alshirazi, deficits and inoperativeness imposed on the soul due to diseases, sleep, unconsciousness, or body death do not indicate that the soul does not operate some things - such as perception - by itself. Nevertheless, the corruption of the instrument might affect the soul in two ways. First, due to the breakdown of the instrument, the soul engages in



governing it. This instrument-governing process prevents the soul from acknowledging its other perceptions, such as intelligibles. Likewise, if the soul becomes involved in fear, it does not perceive pleasure. If it gets involved in anger, it does not sense pain. If it gets involved in thinking, it perceives nothing else. Thus, it could be that the weakening of the instrument, combined with its need for reform, prevents the soul from performing its operations.

The second way in which the soul might be affected by the corruption of the instrument is as follows. Perhaps the soul needs the physical tools provided by the body to carry out its actions, and only after transcendence, it can perform its operations by itself [13, p. 296]. However, these claims require evidence showing that the soul and its faculties are persistent and do not manifest just because of neurological disorders.

Johnson (disapprovingly) asks: “Is it possible to believe that Phineas Gage’s personality remained gentle, but his brain damage was such that when he tried to act in gentle ways, he instead cursed profusely and tried to molest women? Am I supposed to believe that Alzheimer’s patients do not really forget their past experiences or their loved ones? Is it rational to believe that their memories are all still there and fully accessible, but when they try to describe their memories, their brain damage is such that it just causes them to act or say that they have forgotten or that they do not know who is standing in front of them? Of course not. And the silliness of such suggestions clearly reveals that they are merely desperate rationalizations to save the soul hypothesis.” [47]

Meanwhile, Gennaro criticizes the instrument theory, arguing that: “If we accept the instrument theory, interfering with brain processes should not then affect mental processes at all, for brain processes and mental processes would be independent of each other. Damaging the brain would not affect the mind itself, just as interfering with the television’s internal parts does not affect the (independent) signal. But introspection reveals that altering brain states alters mental states themselves rather than merely disabling an independent mind from communicating with or controlling its bodily vehicle.” [35]

Perhaps the specific engagement of the soul in governing the tasks and affairs of the body during physical weaknesses or illness could cause negligence and weakness in thinking, understanding, and the other manifestations or expressions of the soul. However, if this is the case, why does it change or efface pure mental states? It seems that the body cannot merely be considered an instrument of the soul; the relationship must be more complicated than that.

#### ***4.3. Proposed response - emergentist hierarchical correlation of soul and body***

The mere instrumentalism and likening of the soul-body relation to the relationship between a piano and a pianist or between a program signal and a TV set are not devoid of errors. This kind of analogy causes problems because the soul-body relation is an emergent bidirectional relation. In contrast, the piano-pianist and signal-TV relations are unidirectional and naturally lack an emergentist relationship. The failure of a TV set has no effect on the external

signal, nor does the breakdown of a piano influence the pianist's ability. The points described below help us to perceive this solution.

First, the causality of the body and the human soul: the body has bottom-up causality for the emergence of the soul and mental states. Because of this causality, some disorders of the brain and nerves can cause the mental disorders' emergence and also weaken the soul's performance and its top-down (downward) causality. The presence of specific neural processes leads to the emergence of particular mental states for the mind (soul) substance. Also, the lack of specific neural processes would prevent the emergence of proportionate mental states for it. However, the reverse is not valid: a lack of mental states does not mean that the incorporeal substance of the soul does not exist or that it depends entirely on the existence of the body.

If the body, brain, and nerves determine everything in the mental states' actualization, then all mental states should spontaneously emerge when the body is healthy. However, the will, creativity, thinking, reasoning, and inference do not actualize merely through the proper functions of the brain and nerves. If someone's arm is impaired, their soul cannot sway it, no matter how hard it tries. Nevertheless, when an arm is healthy, it will not move voluntarily until the soul intends to move it and commands the brain. Even if the brain and the nervous system work properly, still we can select some actions (or not) and either intend or hesitate to carry those actions out. Consider someone who has restless arms syndrome. This person may slap another person involuntarily but still feel ashamed that his or her arms are out of his or her control.

Although mental states emerge from the body, they have a conscious bearer (a subject), which is not merely passive of inputs but sometimes has its own agency and causality in the emergence of some mental states autonomously, actively, and creatively through its faculties [14, vol. 8, p. 65, 295]. This subject converts raw sensory receptions actively into various perceptions and interprets the electrical activities of neurons. It then transfers the physically received and coded information to ontologically metaphysical meanings and memories. It is the appropriate simple substrate for the unity of consciousness. Furthermore, acquiring knowledge and exerting the will change the activities of neurons and circuits of the brain [33, p. 35, 51-52, 66, 162, 209].

The soul, after substance emergence, has autonomous causality. The soul does not need its physical substrate for some activities, which indicates that the human soul is free of that substrate by nature since creating subsists on being existent [14, vol. 8, p. 65, 295-298]. Because of this ontological independence at some levels, and because of the simplicity of the soul, some dualists believe it is decomposable and incorruptible, that it survives after the body decomposes [46, p. 12; 48; 49]

Albeit the soul expresses itself through the body. The brain and nervous disorders limit the functions of the soul, however, logically speaking, it is impossible to infer that the mind or soul is anything but the secretion of the nervous system. It is a fallacy to say that if mental disorders are caused by brain injuries and neurological disorders, then the real healthy self and mental states

are merely the emergent properties of neural substrates, meaning there is no separable substance of mind (soul). Because of this fallacy, voluntary virtues and crimes can merely be considered as outcomes of the neural deterministic and electrochemical substrate.

Second, hierarchical emergence and the soul's levels: properties (like life) and substances (like the self/mind/soul, each with its specific properties) emerge in a hierarchical order in a way that is proportional to the development stages of an organism. The soul emerges gradually from the weakest and most dependent level of existence to the strongest and most independent level. At some levels, the bodily organism can merely lead to the emergence of properties and not the emergence of the ontological substance (i.e. existence in itself for itself); for example, the planet's organisms result in the emergence of vegetative life that depends entirely on the interactions of a plant's components. Similarly, culture is an emergent property from the actions of social actors with downward causation (thus affecting the people of a society). However, it has no substantial existence or autonomous agency. It depends entirely on the actors of the community.

Meanwhile, through development and substantial motion, an organism may become equipped with a very complicated nervous system from which the mind/soul emerges. This emergent being is not only irreducible to all or some components of its physical and nervous substrate but is also an ontologically distinct existent defined by its own substantiality, subjectivity, and agency. Such a being also affects the brain and its activities through subjective operations, such as decision-making, selection, thinking, reasoning, abstraction, imagination, creativity, and free will.

In Sadr-Aldin Alshirazi's emergentism, the soul has different levels, all of which emerge hierarchically from the body through the body's evolution, development, and substantial motion. The human soul is a material power at the beginning of its generation and the form of the body at the lower levels. Then, because of substantial motions, it gradually becomes increasingly intense by its own essence, and it develops through the different stages of its natural systemic constitution, its organismal and vegetative life, its sensitive soul, and then the cogitative and recollective animal soul. Finally, it gives rise to the spiritual self-subsistent substance (i.e. the autonomous rational soul). This is one soul that has many levels, stations, and modes of being. They are metaphysically the same thing [13, p. 135; 14, vol. 1, p. 282, 392, vol. 8, p. 388]. Because of its various degrees (hierarchical stages of the plant, animal, and human lives), the human soul is characterized both by body-dependent properties (such as the vegetative level) and autonomous-substance properties. There are multiple interdependencies between the levels. For instance, on some levels, the soul is entirely and essentially dependent on the body and will perish when the bodily system perishes. However, on the level of substantial existence, it accidentally (not essentially) depends on the body.

Although Sadr-Aldin Alshirazi considers the body to be the instrument for the development and performance of the soul at the autonomous level [14, vol. 8, p. 353], this relationship is not merely instrumental. The emergent soul is

still affected by its underlying mechanism. This body has the emergent causality on the bed of this autonomous substance and still causes the emergence of some states for it. At the highest level of substantial immateriality, the soul and the body have mutual bottom-up and top-down causal effects (as long as they are connected in one complex nested hierarchy), even though they are separable. The bodily system has emergent impacts on the separable soul because the relationships and interactions between all components and levels are ongoing. As long as the soul belongs to the body, this causality and emergence persist. Therefore, the quality of the bodily system's functions affects the quality of the mental states' emergence for the soul, even at the level of substantial immateriality. Then, the body and its quality are crucial for all levels of the mind and mental states in two ways. On the one hand, it causes the emergence of the mind and mental properties; on the other hand, it is the manifestation scene of the mind.

This multilevel emergentist view contrasts with classical dualism, which regards the soul and the body as two different substances and even likens the soul-to-body relationship to the relationship between a pilot and a ship, a king and a realm, or a chicken and a nest. Despite making claims of the bidirectional interactions between the soul and the body, classical dualism does not present a considerable explanation for their belonging or interaction [45].

Third, the two-sided effects of the emergence: the integration of some components into the system can cause new system-level properties to emerge while obscuring and submerging other properties. For instance, water is wet even though its constituent elements (i.e. oxygen and hydrogen) are not wet. The very combination of oxygen and hydrogen that causes the emergence of this wetness also submerges the flammability of the elements [50]. If minds and bodies are two distinct beings that are unified in one structure, then some properties of this integrated structure will be emergent properties. At the same time, some mental properties and some physical properties will be obscured (hidden and submerged) or constrained.

“What makes something a conscious subject is that it is capable of being in conscious states and of being the subject of conscious events.” [51] That brain disorders damage the actuality of being the subject in conscious states and events during the connection of the subject to the body does not prove the elimination of the subject's reality and capability. Instead, when this obstacle (brain disorders) is removed by death or the complete recovery of the brain's health, the mental emergent disorders will be eliminated. The subject's reality with its intrinsic and voluntary characteristics will be actualized. The mental states generated by the brain are actualized and represented within the mind/soul, which can be devoid of or described by them. Because the body causes the emergence of the mind and mental states for the mind, it can also change mental properties, create obstacles to the mind, restrict the access of the mind/soul to its reserves, and even mask them. As a substance, the mind/soul is subject to different emergent mental states in various circumstances. This effect's intensity depends on the nested emergentist connections of multiple

levels of the mind and the body. The impaired bodily system (brain and nerves) generates mental disorders as emergent properties and effects within the territory of the soul/mind substance.

Four, a mental illness is not caused only by neurological disorders. For instance, in Graham's words, a person might experience depression "because of a disease such as Addison's disease in which one's adrenals no longer produce cortisol", no matter what one thinks. "A person may believe life to be immensely purposeful and yet may still feel quite despondent". Unlike "a person's unhappiness, which is associated with fear that life is not worth living and which is woven into a protracted and frustrated search for meaning and direction, the unhappiness of a person caused by Addison's disease is neuro-chemically fastened onto the disease and not responsive to reasoning and argumentation" [19, p. 101].

This evidence indicates the mind's dependence on the body, the causal role of the body in the emergence of mental properties, as well as the substantiality, agency, and relative independence of the mind's substance.

According to this explanation, mania, for instance, is caused by physical disorders as a mental quality for the immaterial substance of the mind/soul caused by the emergent belonging and effect of the body and the soul. If this means of belonging to the body becomes disrupted after the substantial emergence of the mind/soul, these physically caused disorders will have no subsistence on the soul's substance. This is because these disorders are accidental for the soul's substance. For example, a hallucination is an emergent property of the new neural structure of a person. The prominence of hallucinations in cases of schizophrenia can be considered an emergent property for the mind's/soul's substance from a new physical structure. Since the elimination of the ontological causes of a dependent being necessitates the elimination of that being, these hallucinations will be eliminated by the elimination of that new physical structure. However, the autonomous soul reaches a relatively independent level and is not eliminated by the elimination of that new physical structure.

Therefore, although brain disorders affect mental functions, neural malfunctions sometimes impose no constraints on certain types of consciousness. "A sizeable body of recent evidence demonstrates that the organized, elaborate, and vivid conscious experience sometimes occurs under physiological conditions such as deep general anaesthesia and cardiac arrest, which preclude workspace operation. Experiences of this sort fall into the more general heading of 'near-death experiences' or NDEs." [52]

Considering the above explanation, likening the soul-body relationship to the fetus-mother relationship (i.e. Sadr-Aldin Alshirazi's example) is now a more explicit analogy than the signal-to-TV and pianist-to-piano analogies. At the beginning of its emergence, the soul is considered a material nature. During this stage, the soul has no actuality but is a power of physical nature. However, proportionate to the physical development of the body, in hierarchical and

ontological evolution, the soul derives benefits from an emergent property until attaining a state of substantial immateriality [14, vol. 8, p. 327].

A drop of semen or an embryo in the womb essentially depends on the mother and rots without her. This foetus is affected by its mother and affects her hormones and her mental states. However, after the foetus develops and turns into a mature child inside the mother's womb, its belonging to the mother becomes accidental until it leaves the womb. The mutual effects between the mother and her child persist, but only accidentally - that is, the child still has an emergentist belonging to the mother. However, should the mother die, this child could be extracted from her womb and continue to survive.

Similarly, due to the soul's essential and ontological dependence on the body, it is initially essentially affected by the body and cannot survive without it. However, the soul and the body have mutual effects after the evolution and emergence of its existence in itself (autonomous substantiality), the soul/mind-substance can continue to exist after leaving the body. Thus, the soul/mind could become free from the emergence of mental disorders caused by neurological disorders.

The mind's substance is affected by the bodily system and its inputs because it belongs to the body. However, it is also affected by its own voluntary characters and deeds. After its belonging to the body is removed, it is affected only by its spiritual capabilities and achievements (with its intentional and optional reserves) in interaction with congruent beings. Such has been reported in studies on near-death experiences [50].

A soul belongs to a specific body because of the causal role of that body in the soul's emergence. This is Sadr-Aldin Alshirazi's theory, which was introduced in the 16<sup>th</sup> century: "The human soul is bodily in its origination and spiritual in its Subsistence" [14, vol. 8, p. 345-348]. Substantial emergentists now theorize and develop this idea in recent literature. The fact that the soul emerges from the body and the causality of the body in the soul's emergence facilitates and explains the acceptance of the separable immaterial mind's substance (soul) despite the generation and emergence of mental disorders because of neural changes and injuries to the brain. According to Sadr-Aldin Alshirazi, the soul and the body have productive interactions caused by bidirectional casual belonging. That is, the substance of one is related to the substance of the other, and the qualities of one affect the qualities of the other. Also, the passivity of one causes the passivity of the other. Finally, change and development in one lead to change and development in the other [14, vol. 4, p. 157].

Some cases reinforce the feeling of association and identification of the mind with the body. These cases include the attribution of bodily characteristics to the 'self' (e.g., 'I' ate and 'I' sat down), the immediate effects of ingesting drugs (e.g. psychedelic drugs like DMT and drinks (e.g. wine) on our mental lives. Even the effects of hunger, thirst, and fatigue on the quality of our subjective perceptions and states serve as examples. However, the mind is characterized by certain operations and states that prove the dissociation of the

mind and the body rather than the ontologically distinct and autonomous substantiality of the mind. Some examples of these operations and states are reasoning; deciding; intending to become successful and reach spiritual and moral excellence; mentally suppressing and governing undesired psycho-physiological states such as pain, hunger and fear; finding peace by shifting one's attention or engaging in mental relaxation; and dreaming or mind-wandering.

Therefore, we can witness the hierarchical levels of the soul emerge during different levels of the body's development. Some of these emergent levels are entirely system-dependent, while some are autonomous and relatively independent. The dependence on the system is accidental, not intrinsic, at the level of substantiality and autonomous agency. The soul is an immaterial substance of the physical body at the autonomous degree for itself; however, it is damaged accidentally by neurological disorders if it is not separate from the physical body. This is because of the soul's emergent belonging to the body. The soul lacks many of the physical attributes of the body, such as length, power, talent, and time. Meanwhile, it also has many characteristics, actions, and agencies that are lacking in the body. Anything that is defined by specific characteristics that differ from the other thing's characteristics is something else (unless they are described by each other's characteristics through their accidental or essential relationships). If the relationship between the soul and the bodily structure is accidental, then, as Sadr-Aldin Alshirazi argued, bodily decay corrupts an accidental thing (the corruption of accidental belonging), not the soul's essence [13, p. 349].

The soul/mind's substance (and its mental properties) can emerge from the body and the nervous system. Therefore, it could be that bodily disorders cause certain states, such as mental disorders, to emerge. When the substantial existence of the immaterial soul is proven, it will be acceptable to classify the emergence of disorders as the emergence of properties. In other words, mental disorders are properties whose bearer is the soul/mind's substance; thus, since the mind/soul is in contact with the body and the nervous system, it will emerge. The soul intrinsically belongs to the body at the lower levels (not all levels) until death, and "certain effects spread from the soul to the body and from the body to the soul because of this intrinsic congruence" [53]. The mind's substance is the bed from which mental properties, such as mental disorders, emerge. This is because the mind/soul has an essential belonging to the body at the lower levels (like vegetative life) and an accidental belonging to the body at the high level of substantial immateriality. Therefore, the very lacked view of Avicenna and Descartes regarding the emergence of the soul from the body, which reduces the explanatory power of their theories, can explain the emergence of mental disorders for the soul.

Therefore, those types of mental disorders that originate from brain processes and states are indeed brain diseases, not soul diseases per se, but those types of mental disorders that originate from the soul itself such as bias or evil

wills or mismanagement of emotions are the true mental disorders and the result of sin. So “the root cause of mental illness is sin” (Romans 6.23).

According to this consideration, the soul after being freed from death and from this physical body and mental disorders which have a physical and nervous basis, does not have any disease except what it has acquired from the evils by its own free will.

## **5. Conclusions**

Observations of the effects of neurological disorders on mental states and the emergence of personality disorders have led to various theories regarding the soul's existence and its separability of the body. Some reject the existence of the self/mind/soul. Meanwhile, some deny its immateriality, while others deny its survival after the death of the body. The typical reply of dualists (*i.e.*, instrumentalism) cannot explain the bidirectional causal effects of the soul-body and overrule deniers' challenges. It is possible to plan a more efficient theory in defence of dualism, with the benefit of contemporary emergentism and Sadr-Aldin Alshirazi's philosophy and his theory that “the human soul is bodily in its origination and spiritual in its subsistence” [14, vol. 8, p. 353]. The interaction of physical components and the systemic development of the body can cause multilevel souls with proportionate properties to emerge from the most dependent levels, eventually reaching the autonomous level of the human mind/soul for itself. Mental states and properties can emerge from the proper functioning of the body for the mind's substance (soul); similarly, any malfunctions in this nested and complicated hierarchical system can cause the emergence of mental disorders as mental properties over the immaterial mind's substance (bottom-up causality of the body for the soul).

Owing to its multilevel existence, the soul has an intrinsic dependence on the body at the vegetative level and even some animal levels. However, after the systemic development of the body, the soul gives rise to the autonomous agency (top-down causality), as well as for-itself existence at high levels, where it will belong to the body accidentally. Because the soul emerges from a complex bodily system - and because of its essential and accidental belongings to the body - the body has emergent effects (such as mental disorders) on the soul at all levels.

Therefore, the corruption of the bodily system also corrupts the soul at the essential belonging level and its accidental belonging (not the soul itself) at the autonomous and for-itself existence level. The soul is incorruptible at the autonomous and for-itself existence level because of its ontological substantiality and simplicity. However, brain injuries can cause commensurate mental disorders to emerge as the mental properties and submergence of the other emergent mental-psychological properties because of the soul's essential and accidental grounding and belonging to the body.



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