# *The Embodied Mind as Pharmacological Target: Towards a Phenomenology of Psychopharmacological Interventions*

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Stefan Jerotić[ab], Janko Nešić[c], Vuk Vuković[d], Luis Madeira[ef]

[a] Clinic for Psychiatry, University Clinical Centre of Serbia, Belgrade, Serbia

[b] University of Belgrade, Faculty of Medicine, Belgrade, Serbia

[c] Institute of Social Sciences, Belgrade, Serbia

[d] Hospital for Psychiatry Clinical Hospital Centre "Dr Dragiša Mišović", Belgrade, Serbia

[e] Faculty of Medicine, University of Lisbon, Lisbon, Portugal

[f] CUF Descobertas Hospital, Lisbon, Portugal

**Abstract: Background:** Psychopharmacology is currently plagued by reductionism since it is understood as the treatment of biological and behavioral symptoms of mental disorders without taking into account the subjective life of the self in relation to others. Psychopharmacological interventions, such as antidepressants and antipsychotics, must be situated and discussed within the embodied context of the organism-environment. **Summary**: In this paper, we present a framework for understanding the effects of psychopharmacological treatments that move beyond the traditional reductive, biochemical perspective by putting forward an embodied and enactive approach to psychopharmacology that integrates phenomenology, neuroscience, and physiology. This approach explores how medications impact not only symptoms but also patients' lived experiences, existential feelings, and embodied sense of self. **Key messages**: Psychotropic drugs interact with the entire lived body, influencing emotional processing, perception, and the embodied self, determining emotional blunting, changing affect, temperamental dispositions, and altering motor function and sensory experience. This fundamentally shapes patients' embodied engagement with their environment, which reciprocally influences the entire embodied system, thereby promoting a more nuanced understanding of treatment effects that account for physiological and experiential dynamics. We emphasize the importance of the clinician as a mediator of embodied change, moving beyond the mere management of symptoms to supporting patients in navigating the complex shifts in self-perception and relationality induced by pharmacotherapy. We advocate for the development of phenomenological profiles of psychopharmacological drugs, as well as tailored, patient-centered psychopharmacological interventions that take into account not only clinical efficacy but also the subjective and embodied changes these treatments induce, and how they interact with the patients' unique phenomenological profiles.

**Keywords**: embodiment. phenomenology, enactivism, psychopharmacology, circular causality, existential feelings

## 1. Introduction

The field of psychopharmacology has traditionally distanced itself from that of studies of phenomenology and philosophical psychiatry – it has been attached to biological psychiatry and its search for the neurobiological pathways and how to resolve physical/objective counterparts of mental symptoms. This approach has resulted in the neglect of the impact of psychotropic medications on the embodiment and enactment of mental suffering in patients with mental disorders [1]. Nevertheless, the holistic impact of psychotropic medications on an individual's mental and physical well-being has been a fundamental aspect of their use since the outset, though it has often been overlooked.

Take the example of antidepressants in the early 1950s. Imipramine, the first successful antidepressant, was discovered by chance. Swiss psychiatrist Roland Kuhn tried imipramine on his patients with heart problems and found out that the medicine also relieved symptoms of depression that some of the patients had, as Jacques Schotte, a psychoanalyst and "psy" professor from Ghent, has recalled from a telephone call with Kuhn [2]. The first antidepressant effects of iproniazid are recounted in another "most charming version of the story" described by Solomon in *The Noonday Demon* [3]. A group of isolated tuberculosis patients became exceedingly jubilant when on the drug! The medication did nothing for their lungs, though.

There have been calls for a convergence of psychopharmacology and phenomenology, with the potential for mutual enlightenment [1]. The study of subjective experience under certain drugs (as with the use of psychedelic substances such as psilocybin) has also received recent interest [4]. Yet most of the much more common psychotropic drugs, such as antidepressants and antipsychotics, have not been studied. The objective of this paper is to discuss a framework that allows situating psychopharmacology interventions within the phenomenological domain – particularly subjective experience, existential situatedness, and the embodied sense of being-in-the-world. First, we identify how the concepts of embodiment, lived experience, existential feelings, and the embodied sense of self can enhance our understanding of pharmacological treatment for mental disorders. Second, we want to explore how psychotropic medications impact the entire lived body, affecting both the mind and the brain within a unified organism-environment cycle, invoking the concept of circular causality. Third, we discuss the implications of adopting an embodied approach for psychopharmacological intervention with respect to the clinician's role, therapeutic goals, and patient outcomes. Finally, we argue that detailed phenomenological profiles of psychopharmaceuticals should be developed to this end.

## 2. Setting the stage: the embodied mind and enactivism

The embodied mind paradigm has gained significant traction in contemporary psychiatry as a powerful approach to understanding mental disorders [5–8]. The embodied perspective challenges the traditional view of the mind and body as distinct entities. Instead, it posits that cognitive and emotional processes are inextricably linked to the lived body. The assertion that cognition is *embodied, enacted, embedded, and extended* (the '4Es') has become a commonplace position in the philosophy of cognition and in many other disciplines [9]. Two distinct forms of embodied cognition have been proposed: enactivism and extended cognition [6].

The most developed and "rigorous" of the embodied and embedded approaches to cognition is enactivism. Enactivism was presented as an “alternative research programme” [6,10], challenging the orthodox cognitive science view of world-independent representations in the mind. What exactly is enactivism, or what could it be? Is it a theory, research programme, or something more? Philosopher Ned Block famously exclaimed that he has yet to figure out what enactivism is. Most contemporary enactivists view it as an alternative to the current research paradigm in cognitive science, and few consider it superior to its contemporaries [11,12]. In the meantime, numerous criticisms have been raised, and some have argued that, although enactivism will not bring about a revolution, it should be better understood as a *philosophy of nature* [13]. This way, the truly revolutionary foundational commitments of enactivism that go beyond any particular research programme would stand out. Gallagher [14] has suggested viewing enactivism as a philosophy of nature because enactivists propose a holistic conception of cognition that encompasses the complex dynamic of the brain-body-environment system. Understanding enactivism as a philosophy of nature solves the problem of holism since “it is difficult” to operationalize holism through scientific, empirical investigation, which does not take it into account. Gallagher has even gone so far as to call this radical enactivist direction towards the “new naturalism”. This new philosophy of nature aims to integrate phenomenology and experience into a holistic understanding of the mind and world in a naturalistic manner. In the same vein, Frank et al. [15] argued that modern science of the mind should go beyond the current “experience-blind” concept of nature [16]. The main ideas of enactivism are the holism of cognition (brain-body-environment) and the reestablishment of experience within the science of the mind. These new ways of viewing the mind and world are then of importance for science and philosophy of disorders of the mind, i.e., psychopathology. We are in agreement with the position that enactivism should be regarded as a philosophy of nature.

This movement offered a critique of the cognitivist understanding of the human mind/brain as a computer system with mental representations. Enactivists advanced the view that cognition is embodied action, and notably, they dismantled the rigid dichotomy between the internal and external realms of the mind/body and the world. In enactivism, the organism and the world/environment are in a state of dynamic coupling [6]. The organism can be defined as an autopoietic system, which creates and maintains its own dynamic identity in interaction with the environment and projects meaning into the environment (*Umwelt*, [17]), thereby establishing itself in an ecological niche. The organism and environment are in a state of constant reciprocal influence; they co-create each other. The central enactivist concept here is sense-making as the "evaluative interaction of an organism with its environment" [6]; this activity of the organism is its cognition. Varela and colleagues sought to investigate consciousness from the perspectives of cognitive science and phenomenology, employing both the third-person and first-person approaches [10]. They employed the conceptual frameworks of Husserl, Heidegger, and Merleau-Ponty, integrating them with insights from neuroscience.

The concept of embodiment posits that our cognitive processes, emotional states, and sense of self are not isolated within the brain but are instead deeply intertwined with the body's physical state and interactions with the external world. This concept is fundamental to the theories of philosopher and psychiatrist Thomas Fuchs [5] and other prominent thinkers, who propose that mental disorders should be conceptualised as disruptions in the embodied experience rather than solely in terms of brain abnormalities or biochemical imbalances. The embodied framework challenges traditional dualistic approaches to mental illness, urging clinicians to consider the lived body (*Leib*) and the objective body (*Körper*) as integral to the experience of mental illness.

In line with the enactivist tradition established by Varela and Thompson, Fuchs developed an ecological conception of living organisms, which is underpinned by the crucial ontological concept of embodied subjectivity. This signifies that the entirety of the human organism is characterised by a dual aspectivity rather than a duality. Embodied subjectivity can be defined as a "unity of the lived body and the physical body" [5]. These aspects are coextensive, encompassing the body within and without, as observed from the first- and third-person perspectives. In the terminology of the phenomenological tradition, the lived body can be described as both the *Leib* (the lived body), "the felt body", and the *Körper* (the physical body), the biological object. This concept is also referred to as the "subject-object" in Husserl's

terminology [18]. All persons' experiences and actions are bound to their bodies, and it is the felt body from the first-person perspective. The body is a sensory entity that is capable of experiencing touch and can simultaneously be the recipient of touch. However, the body is also a totality of material and psychological processes that are studied from a third-person perspective. The objectivizing end of the spectrum is the dead body (so intimately tied to medical research). This phenomenon of the body can be conceptualised as a duality. The body can be experienced as the lived body, but it can also be objectified as the physical body. Our phenomenological exploration unfolds in the dialectic of these two aspects. This is the ambiguity of the lived body, as postulated by Merleau-Ponty [19]. From an embodied and enactive perspective, the mind-body problem concerns the relation between two aspects of the body, which Fuchs [20] has termed the "body-body" problem.

In Fuchs's enactivist autopoietic understanding of life, organisms are regarded as centres of subjectivity from the outset at the level of certain organisational units. This ecological conception of living organisms introduces a special kind of causality, which he terms 'integral causality'. It arises from the conjunction of vertical (“inner-organismic or part-whole”) and horizontal (“organism-environment”) circular causality [5]. These reciprocal relations unfold in a spiral-shaped dynamic. Fuchs posits that an organism can be conceptualised as a hierarchy of levels, with the top level representing the organism as a whole and the subsequent levels comprising organs, cells, and atoms. To exemplify vertical causality, Fuchs employs Thompson's concept of dynamic co-emergence, which posits that the whole and its parts mutually give rise to one another [21].

Consequently, vertical causality incorporates both top-down (downward) formative causality, which is the structuring influence, and bottom-up (upward) enabling causality. For the purposes of this discussion, an example of vertical causality in the brain, as proposed by Fuchs, will be of benefit. An emotional state, such as fear, can be influenced pharmacologically through alterations in transmitter metabolism ("bottom-up") and through psychotherapy with a therapeutic dyadic encounter ("top-down") [20]. Horizontal causality and feedback effects operate at the same level rather than between levels. These can be reciprocal relationships between cells, organs, and also between the organism and the environment. It is evident that horizontal processes are inextricably linked with vertical ones; these are not distinct, parallel entities. The relationship between these two forms of causality, horizontal and vertical, is referred to as integral causality. Fuchs conceives of the brain as an organ of "mediation or transformation"

between the organism and the environment, as well as between the whole and its constituent parts, in the context of integral causality. Accordingly, Fuchs proposes a solution to the body-body problem through the use of circular causality. The integration of brain-body and body-environment processes, as experienced through embodiment, exerts a top-down, formative, or ordering effect on physiological processes [20].

Following Fuchs's work, de Haan argued, in her discussion on the integration problem in psychiatry, that this way of understanding mental disorders within hierarchical-level explanations is still troubled by the shadow of reductionism. Instead of explanations in dyadic relations and terms, Sanneke de Haan proposed that a more holistic view is needed. She introduced the enactive concept of "organisational causality" [6]. It is argued that, instead, this complexity has to be understood through a heterarchical set of causal relations on different spatial and temporal scales. The patterns of causality, although they can be circular, involve multiple contributing elements and interactions on different time scales [22]. De Haan sees this organisational causality as involving a kind of *emergence as fusion*. As she explains in the cake metaphor, this would mean that ingredients go out of existence to bring about the whole cake as something with emergent properties without positing levels. Now, this improved model of integration of causality that is relevant in the psychiatric setting and for the understanding of how different psychiatric disorders come about and what the contributing factors are has come under further criticism from Gallagher. He points out that these factors or processes involved in holistic causality (and which can be phenomenological, physiological, social, and existential, as de Haan rightfully points out) do not go out and disappear and cannot be distinguished - they do not fuse, and so the notion of fusion is unhelpful. Organisational causality is a good solution and helps us go beyond hierarchical levels, but a different way of relating the facts is required. Gallagher goes on to argue that it is more adequate to say that these processes are dynamically integrated, so he introduces the notion of *dynamical causality* instead. The whole is a dynamical gestalt, "a set of distinguishable processes that are dynamically related, but are not defined as on different levels" [22]. The gestalt is composed of dynamic causal relations rather than part-whole relations. This idea is not new and was present in Jasper's phenomenological psychopathology [23].[1] To provide some explanation of how such a complex causality of mental disorders could work, Gallagher calls upon notions of "meshed architecture model", interventionist causality, and coordination dynamics. Meshed architecture encompasses both

[1] The same idea inspires our search for phenomenological profiles of psychopharmacology, developed in the paper.

*vertical* (on which cognition, affect, and body schematic processes stand) and *horizontal* (including environmental, social, and cultural factors) axes.

In enactive psychiatry, sense-making is seen as disordered in psychiatric disorders - the way the world is open to us is changed, the enactments become one-sided (the world appears oppressive or uninviting in depression, for example) - there are *disordered patterns of sense-making* [6]. According to de Haan, mental disorders are essentially characterized by "disruptions to existential sense-making".[2] But the *relational* character of mental disorders is here emphasized, which means that social norms and values partly determine what is considered "disordered" [24]. This means that in enactive psychiatry, the patient's agency, autonomy, and adaptability are diminished, and the task of the psychiatrist is to help the person in whatever means available to "scaffold the client" so they can find new ways of coping themselves [7]. Enactivism encompasses both medical and social models of what mental disorders and disabilities are. Sense-making is intrinsically social [25][3]. In mental disorders, rigid patterns of interaction with others and the world undermine adaptive engagement and attunement of sense-making [6,27]. Given our discussion on the complexity of causality that is involved in the processes that create mental disorders, enactive psychiatry should take into account all the diverse contributing factors of the whole brain-body-environment (person-world) system when attempting explanation and to achieve therapeutic effects. The dynamical gestalt of a particular psychiatric disorder is not only phenomenological or physiological, but also social, embedded in the environment, and so on. When this multitude of factors is considered in its totality, the enactive and embodied approach holds that disorders are always disruptions or changes in both vertical and horizontal causality. The complexity of the intertwined processes has pushed some philosophers of psychiatry to seek other solutions with organizational and interventionist causality.

The notion of existential dimension we borrow from de Haan's work. She has distinguished four aspects or dimensions that any model of psychiatric disorders should incorporate: the experiential, physiological, sociocultural, and existential dimensions [6]. She places special significance on this dimension for psychiatric frameworks. In line with the more general enactive ontology, sense-making can be basic and existential. In the existential

[2] Maiese [24] has maintained that mental disorders involve changes in both biological and existential sense-making since these are inseparable.
[3] "Participatory sense-making" [26] refers to the fact that sense-making is never solely individual but always entangled in social relations with other organisms.

dimension, a reflexive capacity is involved; the person takes a stance on themselves and their relation to the world. This “higher” dimension brings in values and opens up the possibilities for action beyond survival, a way to “lead a good life”. The existential dimension is essential for psychiatric practice to understand the patient's view of themselves and the psychiatric disorder, and in theoretical debates, for example, when discussing the self-illness issue. In the end, the patient's own reflective stance on the effects of pharmaceutical drugs will influence whether the person is willing to undergo pharmacotherapy. Changing the patient's view on their own values and their own cognitive mechanisms and ways of affective relation with the world and others is at the core of much of psychotherapy (a striking example of this is cognitive behavioral psychotherapy). The person's existential stance on herself can cast a pathologizing light on her state of being, and she will seek (perhaps) help from a psychiatrist or, on the contrary, she will view herself not as ill or disordered but as neurodivergent (in case of autism and ADHD).

In a similar vein, from Gallagher's theory of the self and its disorders, the self-narrative can provide a “forensic measure” of changes that a particular psychopathology involves. He employs this approach to understand schizophrenia and borderline personality disorder (BPD) through self-narratives, but no factor is isolated; all are intertwined in the dynamical gestalt. A disturbance of the pre-reflective sense of agency or sense of self (ipseity) leads to complex delusions, and this in turn leads to disruptions of social relations and deviations of the self-narrative in schizophrenia [8]. Thus, following in the analysis of causality we did earlier, the appropriate therapeutic interventions cannot be simple, one-dimensional “punches in the gut” that target only partial causes of the disorder. A change in any factor can have a holistic effect, both in disruption and intervention. In contrast to the narrow view, Gallagher and de Haan emphasize that intervention can involve changes in multiple factors, such as environmental/social factors, or narrative practices, in addition to internalist, drug effects [22]. For example, in major depression, SSRIs do not merely create a neurochemical precondition for subsequent therapy; we argue that they directly recalibrate the patient’s lived subjectivity, widening affective horizons. Because these experiential shifts occur within a dynamical gestalt, treatment will require coordinated adjustments in other domains: embodied routines such as physical exercise, modifications of affective and social scaffolding, and the narrative renegotiations that take place in psychotherapy and supportive relationships.[4]

[4] Maiese [28], in her enactivist theory, proposes that a disorder like depression should be treated with a conjunction of medication (like SSRI), talk therapy and expressive arts interventions (e.g., dance-movement therapy) to

## 3. The Interpretative act of symptom development

The process of interpreting symptoms is a dynamic and collaborative endeavour between the clinician and the patient, with a multitude of layers of meaning. In line with Gadamer's hermeneutics, symptomatology in psychiatry can be regarded as an interpretative act whereby the clinician and patient endeavour to traverse a shared yet distinct linguistic terrain, striving to articulate the multifaceted dimensions of illness [29], [30]. While the patient offers a first-person account centred on subjective experiences and emotional nuances, the clinician often interprets these descriptions through a more objective *Körper* framework, which focuses on observable or measurable aspects of the body [31]. This duality in perspective underscores the inherent tension between first-person experiences and medicalised, third-person interpretations. Consequently, patients are driven to seek explanations that reconcile their lived experiences with clinical diagnostics.

The interpretative framework of psychiatry highlights a challenge: the clinician's objective approach can often result in a distance between themselves and the patient's subjective world. Sartre's distinction between the "body-for-me" and the "body-for-the-Other" effectively encapsulates this tension. In this distinction, the patient's self-perceived "body-for-me" becomes externalised and redefined as the "body-for-the-Other" [32]. In this transformation, the clinician's understanding of symptoms may fail to take into account the broader, embodied impacts of illness and treatment on the patient's life.

Furthermore, the nature of psychopharmacology and drug discovery is such that it is fundamentally driven by objective, third-person accounts of symptoms. In this context, the efficacy of psychotropic medications is gauged by their capacity to alleviate symptoms that have been methodically "objectivised" to align with diagnostic criteria. Consequently, authoritative recommendations for treatment are based on third-person data rather than individual subjectivity, resulting in the establishment of standardised guidelines that lack the nuances of personal experience. Thus, the patient's first-person account is frequently eclipsed by a universal framework that prioritises objective symptom management over the subjective experience of illness.

achieve an integrative long-term effect on the patient's disturbed affective framing (that is the forward-looking skillful engagement with what matters for the agent in the world).

## 4. The Embodied impact of psychopharmaceuticals

Nevertheless, this objectification gives rise to significant questions regarding the impact of psychopharmaceuticals on the patient's embodied experience. Psychotropic medications do not merely adjust isolated cognitive processes; instead, they interact with the whole embodied being, influencing emotion, perception, and the sense of self [33,34]. For example, selective serotonin reuptake inhibitors (SSRIs), while efficacious in reducing depressive symptoms, frequently result in a state of emotional numbing. This phenomenon, which has traditionally been labelled a 'side effect', reflects a more profound transformation in the embodied experience of emotion. This shift alters the individual's engagement with the world. From an embodied perspective, this effect is not merely a cognitive dulling but rather a profound restructuring of how patients experience, perceive, and engage with their surroundings [32].

An approach to psychopharmacology that takes into account the embodied self may facilitate a reconnection of these perspectives. Such an approach would prompt clinicians to view pharmaceuticals not merely as instruments for alleviating symptoms but as agents that shape the patient's existential and embodied state. Recently, Aftab and Stein, within their principle of “explanatory pluralism,” called for psychopharmacology to integrate neurochemical, psychological, and existential domains [35]. To operationalise this mandate, we draw a clear conceptual opposition between understanding a drug as an instrument versus a drug as an agent. By drug as an instrument, we mean a means used as an external actor, which has connotations mostly in efficacy and side effects. By drug as an agent, we mean a participatory mediator that reconfigures the patient’s embodied sense-making and existential stance, thereby redirecting the lived relation between mind, body, and world. In the sections that follow, we elaborate on the drug as agent view as a phenomenological and enactive refinement of explanatory pluralism, demonstrating how medication actively shapes the circular dynamics of experience rather than merely intervening upon isolated symptoms.

An embodied approach prompts us to reflect on how these drugs impact patients' existential and sensory engagement with their surroundings. To illustrate, antipsychotics, which target dopaminergic systems to alleviate symptoms of psychosis, also exert an influence on motor functions and perceptual faculties in ways that are immediately perceptible and interpreted by the patient. Phenomenological research indicates that these embodied

alterations, whether manifested as slowed movements, altered spatial awareness, or shifts in sensory intensity, are integral to how patients experience their illness and treatment. These bodily alterations are not merely side effects; rather, they are integral to the pharmacological impact on the patient's life [36]. From an enactive and embodied perspective, the medication changes the patient's sense-making in a particular way and hence influences the interaction of her body with the environment - the relation to the world is changed. The change is visible from both the first-person perspective (subjective phenomenology) and from the second-person perspective (in interaction with others). Sometimes the drug transposes the whole person-world relation (patient comes out of the autistic state, or the world regains affordances that were lost in a depressive state).

For clinicians, incorporating phenomenology into pharmacological practice may facilitate a more nuanced understanding of patient outcomes. It is important to recognise that medications not only alleviate symptoms but may also influence the patient's self-perception, relationality, and being-in-the-world. In this sense, the clinician assumes the role of a mediator, assisting the patient in interpreting and integrating these embodied changes within their broader life narrative, thereby enhancing the efficacy of the therapeutic process and alignment with patient values. The clinician will need to utilize second-person interaction with the patient's own existential stance (when possible), through embodied dialogue and clinical expertise, aiming to influence and change the patient's stance. Psychiatrists should be keen on unveiling all the aspects of the patient's self-narrative with enough theoretical phenomenological background (something to be more widespread in the future education of clinicians, we hope) to be able to analyze any contributing subjective disturbances properly, but also how the patient's narrative of themselves and their world is (or is not) part of the disorder. Clinicians will have to examine how the prescribed drugs have impacted the patients' experiences and agency, how they worked (or did not) for them personally, helping the subject weave further their affective and bodily experiences into the existential stance and their self-narrative.

It is imperative to recognise the inextricable link between the individual and their surrounding environment when attempting to understand the comprehensive impact of psychopharmacology. This is precisely what the enactive approach calls for in cognitive science and psychiatry, and why we incorporate its ideas here. If the person's relationship with the world and others can be disordered, perhaps psychopharmaceuticals can restore it or change it back to some “normal” previous state. Misattunement of the person with the sociomaterial

environment is at the core of many (we can say all from an enactivist perspective) mental disorders. The self-world relationship is disordered differently in schizophrenia and autism, for example [37]. The achievement of better attunement of life-worlds can only be attained with multifaceted therapies and scaffolding. The enactive literature on autism suggests that better attunement can be achieved through relational rapprochement between the person and their sociomaterial environment.[5] The person-world relation differs in various psychopathologies; in some, bridging the gap, the gulf that was created between the person and world, is needed, and in some cases, a gap is to be instituted, to save the person from the world being too much [39–43].

We acknowledge that even if we had a fuller phenomenological comprehension of the pharmaceutical effects on a disorder, the matter would be further complicated and made more uncertain if individual and sociomaterial, as well as cultural, differences are taken into account. Since all these aspects (physiological, phenomenological, and social) are involved in the creation and, consequently, in our understanding of psychiatric disorders, it is only through the integrative, holistic influence of therapies across all these domains that better outcomes and greater health can be achieved in patients. Clinical practice is more complex and will have to encompass all these elements. Not only should the phenomenology of the drugs a patient takes be accounted for, but also how they change the phenomenology of the material and social world in which the person lives, altering their whole life-world. Again, here we would like to emphasize that advancement in the field can be achieved through the incorporation of phenomenological ideas, picked up by enactivists, to get a better understanding of psychopathologies and disabilities (e.g., experience of "I-can" of being-in-the-world in pathological embodiment, [40], [41]). These all sound too theoretical for now, and we concede that there is a long way to go and more work to be done before practical application of these approaches in clinical practice.[6]

## 5. Circular causality and embodied psychopharmacology

The concept of circular causality explains how alterations at a given level (such as neurotransmitter activity) affect the whole embodied system through reciprocal interactions. In the field of psychopharmacology, this implies that pharmacological agents exert influence

[5] One of us has written about alleviating autistic problems through ecological and enactive scaffolding, see [38].
[6]The enactive approach to psychiatry has not gone without its fair share of criticism in recent years [44,45].

upon, and are themselves influenced by, the patient's embodied state, rather than merely exerting a 'top-down' effect from the brain to behaviour. The brain is considered a part of the vertical axis of circularity and acts as a mediator within the broader embodied system. As previously mentioned, patients undergoing treatment with SSRIs may experience a reduction in emotional expression, which is often cited as a potential adverse effect. However, from the perspective of circular causality, this reduction in emotional expression can be seen to result from changes in both brain chemistry and embodied feeling, which reinforce each other. This reciprocal relationship helps to explain why the effects of medication often differ depending on an individual's context, environment, and prior experiences. This suggests that psychopharmacology should consider physiological changes and subjective, embodied responses together.

Antipsychotics do not merely modify internal brain states; they facilitate patients' re-engagement with their environment in more integrated ways by recalibrating their perception of social cues, spatial awareness, and even self-identity [46], restructuring the whole brain-body-environment system. This interdependence is evident in how a stabilised embodied state allows patients to interact with their surroundings with greater coherence and ease, thereby creating a cycle where improved interaction with the environment supports further stabilisation within the brain-body system. It can be argued that psychopharmacology should be viewed as a means of facilitating an enhanced organism-environment relationship. In the spirit of the enactive and embodied approach, we could add that pharmaceuticals change the body-scheme and sense-making of the patient, profoundly altering the ways a person moves and interacts with others and the world.

In another example, the well-documented effects of antidepressant medication on the inflammatory response [47] can be viewed horizontally at the level of environmental interaction. The reduction in inflammation alleviates fatigue and pain, fostering increased psychosocial engagement. Alternatively, these changes can be viewed vertically, manifesting as monoamine-mediated cytokine modulation. The system self-organises through these reciprocal interactions, with the antidepressant acting as a perturbation that reshapes its interconnected elements.

One argument posits that the physiological basis of the self is sustained through the continuous processing of bodily sensations and interoceptive feedback. This refers to signals

within the body that inform us of our internal states, such as heartbeat, respiration, and other bodily rhythms [48]. These processes, particularly within areas such as the insula and related brain networks, continuously shape our experience of time and self-awareness, embedding our consciousness within a framework of embodied, lived experience [49]. In essence, psychopharmacological interventions can directly impact the embodied experience of self by adjusting the brain's interpretation of bodily signals, thereby reconnecting patients to a more integrated and continuous sense of identity. Psychopharmacological interventions have the potential to influence this embodied sense of self by modifying the physiological processes that underpin our sense of continuity and connection to the external world.

## 6. The Phenoenactive model: Working Hypotheses

Schizophrenia, with its complex blend of cognitive, emotional, and perceptual disturbances, provides an illustrative example of the potential of an embodied approach in psychopharmacology. According to theories of embodiment, disturbances in the lived body, such as a disrupted sense of coherence or alienation from one's own sensory experience, are central to the aetiology of schizophrenia. Fuchs and Schlimme [50] posit that these symptoms can be conceptualised as forms of "disembodiment," whereby the patient experiences a disruption in their pre-reflective, embodied sense of self. This disembodiment may manifest as a feeling of unreality, a lack of common sense, or distorted spatial perception, which results in the individual experiencing a fundamental disconnect from the world and others.

Psychopharmacological treatments address aspects of psychotic experiences by targeting the dopaminergic system, which regulates attention, salience, and motor activity. From an embodied perspective, antipsychotic medications may reshape patients' lived experiences, potentially restoring coherence and presence. For example, a reduction in motor and cognitive activity in patients with treated schizophrenia demonstrates how these medications stabilise embodied states, thereby helping patients to regain a sense of groundedness. From an embodied and enactive perspective, antipsychotics can be viewed as interventions that facilitate the re-establishment of a sense of reality and connection with the world, thereby altering disordered sense-making and restructuring the relationship between the individual and the world.

Fuchs characterises schizophrenia as a maturational disorder of connectivity, whereby the "ecological self" becomes fragmented [5]. The phenomenon of "predelusional perplexity," or

a loss of perceptual coherence, exemplifies the experiential crisis of psychosis, wherein reality appears disjointed and alien [51]. The concept of circular causality provides a compelling framework for understanding how psychotropic medications, particularly antipsychotics, impact both the physiological and experiential dimensions of schizophrenia. Beyond neurotransmitter modulation, antipsychotics recalibrate patients' embodied self-experience and alter their sense of coherence within the world. As Monville [52] notes, their effects are not limited to discrete symptoms but reshape the patient's overall relation to self, others, and reality, notably weakening the grip of delusional frameworks and enabling, according to the authors, the re-emergence of the "I." This aligns with findings that schizophrenia involves disruptions in bodily selfhood – basic symptoms that reflect early neurobiological and experiential disintegration (previously elaborated dual bodily aspects), such as altered body ownership and boundaries [53]. In this light, pharmacological intervention can be seen as initiating a recursive loop: neurochemical changes influence pre-reflective bodily self-perception, which in turn reorganizes the patient's meaningful engagement with the world, across vertical and horizontal axes. This is consistent with the view that embodied interventions operate through a bidirectional, circular relationship, affecting subjective experience through physiological processes and vice versa. For instance, antipsychotic medications may assist patients with schizophrenia in reclaiming a coherent sense of self, not only by alleviating psychotic symptoms but also by stabilising their perceptual and emotional grounding in their surroundings. This, in turn, may facilitate a more integrated mode of being in the world.

In the context of major depression, an existential perspective offers a valuable interpretive framework. For example, in depression, Ratcliffe describes how existential feelings may be altered, resulting in patients perceiving the world as devoid of possibility and meaning [54]. This feeling of being disconnected from the world, described as a shift in the "structure of experience," is consistent with Fuchs' circularity model, which posits that disruptions at any level of the mind-body-environment interaction can cause reciprocal changes throughout the system. Antidepressant treatment can thus be understood not only as a biochemical intervention but also as a process of gradual modification of the embodied sense of reality. This re-engagement with the world is achieved by altering both neurobiological states and subjective, embodied experiences.

Crucially, then, the proposal that existential feelings can be restored does not presume a simple re-installation of a prior mood; rather, it points to the re-sedimentation of the very

*capacity to be responsive and attuned to the world (again being "situated in a world by which one can be affected").* Phenomenological work on depression recognises that it is a structural disorder, which involves an erosion of the situatedness of self, a thinning of the background affective tissue that ordinarily grants the world its soliciting power [43]. Because this erosion is rarely complete, blunted residual attunements remain available as a scaffold for later renewal, in line with Heidegger's claim that *Dasein* is always in *some* mood, however impoverished [55]. First-person recovery narratives corroborate this view: responders to pharmacological treatment commonly describe not a leap from sadness to joy, but the dawning ability "to move in and out of ordinary feelings like sadness and disappointment" after a period of numb detachment ([56,57]). Similar themes recur across qualitative meta-syntheses of remission experiences, where improvement is characterised by a regained sense of belonging, temporal openness, and affective permeability rather than by any specific positive emotion (e.g., [3,58]). Therapeutically, such accounts align with Svenaeus' and Aho's observations that antidepressants, by widening affective horizons, and existentially oriented psychotherapies, by cultivating new projects of meaning, both function as practices of structural re-attunement, albeit at different levels of vertical causality [5]. Taken together, these converging conceptual and qualitative lines of evidence render the possibility of "restoring" existential feelings not only plausible but clinically salient, inviting future work that operationalises recovery as the progressive re-establishment of world-disclosive affective capacities rather than mere symptom reduction.

The embodiment theory is most closely aligned with these insights in the context of schizophrenia, where the disorder is not merely conceptualised as a condition of cognitive dysfunction but rather as a condition in which fundamental aspects of self-experience, including the sense of agency, corporeal coherence, and body ownership, are significantly altered. This approach provides an embodied framework for understanding the schizophrenic experience through various interconnected layers of self-disruption, beginning with the bodily self, or the "pre-reflective" layer of selfhood [59]. In applying these insights to psychopharmacology, the objective is to address not only cognitive symptoms but also to stabilise the embodied sense of self that is fractured in schizophrenia. To illustrate, antipsychotic medication has the potential to recalibrate multisensory integration by influencing the neurobiological systems responsible for processing proprioceptive, interoceptive, and exteroceptive signals, which are crucial for a unified bodily self. By recalibrating the relevant neurobiological systems, antipsychotics may assist in restoring the

boundaries between self and others, thereby reducing phenomena such as the blurring of personal identity and agency. This phenomenological and embodied perspective highlights the limitations of viewing schizophrenia as a disorder solely related to neurotransmitter function. An alternative approach would be to integrate neurobiology with first-person experiences of self-disturbance, thereby acknowledging the role of bodily experiences in grounding the minimal self. It is therefore recommended that clinicians consider not only the alleviation of symptoms but also the restoration of embodied coherence, with a view to facilitating patients' re-engagement with the world as distinct, grounded selves.

## 7. Towards phenomenological-enactive profiles of psychopharmaceuticals

An investigation into the embodied effects of psychopharmaceuticals provides the opportunity to develop detailed profiles for each medication, creating a comprehensive map of how different compounds uniquely influence consciousness, perception, and bodily experience.[7] As argued by McMillan and Fernandez, the use of psychedelic substances in psychotherapy (PAP) results in the production of distinct alterations in the structures of consciousness, including affectivity, embodiment, temporality, spatiality, and selfhood. Extending this approach to commonly used psychotropic medications could reveal similarly distinct alterations in bodily experience beyond their primary biochemical targets, thereby providing insights into their subjective and experiential impacts. Psychotropic medications not only introduce new elements into the experience but can also exert a profound influence on the structures of consciousness and experience. This would provide a rationale for the use of specific types of drugs for specific disorders. If we consider schizophrenia to be a disorder of self-experience [63], a disruption in the structure of selfhood and embodiment, then the appropriate treatment would be to repair this disruption with a phenomenologically adequate medication (if possible).

As we have already seen, SSRIs are often associated with emotional blunting; they not only alleviate depressive symptoms but also alter patients' embodied affective responses, therefore changing the participative sense-making and interaction with others and the world.

[7] Experiential profiles of drugs have been in focus before, for example, in the philosophical description of addictive phenomenology and its possible universal aspects in Flanagan [60]. We thank one of the anonymous reviewers for bringing this literature to our attention. Nonetheless, a systematic approach we are advocating for in this paper is currently lacking in the literature. A precursor to our ideas of phenomenological profiles of drugs can be found in recent phenomenological methodology literature, renewal of the old concept of *phenomenological gestalt* of psychiatric disorders ([23,61] ). We addressed this notion in [62].

Such drugs become a means of *affective scaffolding*. According to enactive, embedded, and embodied approaches, the agents can use the environment they interact with to control and influence their affective states. Psychiatric drugs can also be seen as regulators of patients' emotional experience alongside other material environmental, and intersubjective factors; and so, they fall under affective scaffolders.[8]

This effect can be mapped as part of an SSRI's phenomenological profile, whereby specific sensory and emotional blunting nuances become part of the drug's subjective signature. Similarly, antipsychotics may induce changes in spatial perception, motor activity, and sense of agency, each of which contributes to a profile that describes how the medication reshapes the patient's lived experience and sense-making. By identifying and categorising these experiential signatures, clinicians and researchers could create profiles for various medications that recognise the full scope of enacted, embodied, and existential shifts they induce.

In order to develop distinct phenomenological profiles for psychopharmaceuticals, it would be advisable to employ a multi-step approach that is grounded in both qualitative and structured empirical methods. This would entail the utilisation of systematic phenomenological interviews, as exemplified by those employed in the domain of phenomenological psychopathology, with the objective of capturing the subjective effects of particular medications. For example, tools such as the *Examination of Anomalous Self-Experience* (EASE) [32] and the *Examination of Anomalous World Experience* (EAWE) [67] have been successfully employed to identify detailed experiential profiles in schizophrenia.[9] This provides a model that could be extended to psychopharmacological effects.

The process of developing such phenomenological profiles would commence with the administration of phenomenological interviews to patients undergoing treatment with specific psychotropic medications. Such interviews would explore domains including the patient's lived body, spatial perception, temporality, and intersubjective experiences. For instance, we can speculate that antidepressants may be associated with alterations in the subjective experience

[8] Affective scaffolding can be anything from putting on our favorite Bach piece to relax, having a talk over coffee with friends or using AI chatbots to "sit" with us while tripping on psychedelics. For more on affective scaffolding, see the work of Colombetti & Krueger [64]. There is relevant recent work on affective scaffolding in addiction ([65]) and on bad pharmaceutical scaffolding and psychiatrization in [66]. Zoey Lavallee uses the scaffolding framework to understand the effects of psychiatric drugs and is critical of the social process of psychiatrization that leads to so-called negative or *bad scaffolding*. Both the good and the bad ways that certain drugs influence affective scaffolding should be taken into account within the project of "profiling" their effects.

[9] In our earlier work we provide some insight into the lived time disturbances in depression through TATE (Transdiagnostic Assessment of Temporal Experience). See [68].

of time and the enactments and movements of the body, whereas antipsychotics may affect intersubjectivity and the sense of situatedness in the world. Such interviews could elucidate how patients perceive changes in their mood, self-awareness, and interaction with their environment, thereby facilitating the construction of a comprehensive profile of the embodied effects of each drug.

The creation of detailed phenomenological profiles within drug classes, such as SSRIs and antipsychotics, would enable the capture of the distinctive embodied effects that each medication produces. For example, fluoxetine is often observed to have an energising effect [69], which patients describe as enhancing motivation and focus. In contrast, paroxetine has been found to have a more grounding, calming effect, influencing patients' emotional depth and reducing social anxiety [70]. Similarly, in the context of antipsychotic medications, aripiprazole has been observed to promote a sense of mental clarity with a reduced incidence of sedative effects, thereby facilitating a more active engagement with daily tasks, meaning a more engaged and open interaction with the world, in enactive terms [36,71]. In contrast, quetiapine has been shown to have a tendency towards sedative effects, which may provide a sense of stability but may also result in a reduction in spontaneity and physical energy. This may also be consistent with the opposite effects – closing of the interaction with the world in enactive terms [72,73].

Our stance is that the pheno-ecological profile of a medication adds value precisely where “folklore” stops – by showing how medication transforms the pre-intentional structures that organise a patient’s world, not merely whether symptoms are reduced. First-person phenomenological studies of SSRIs reveal changes that standard symptom talk misses. Svenaeus reports that patients describe an emergent “self-feeling” or embodied *resonance* such as renewed capacity for moods to vibrate through the body, rather than a simple lift in sadness or energy [32]. This account explains why some responders, despite modest shifts in Hamilton Depression Scale (HAM-D), suddenly re-engage with relationships and projects: the drug has reopened the affective “field” itself.

A recent bottom-up review co-written by experts-by-experience [74] synthesises hundreds of recovery narratives in depression. Improvement is characterised by notions that are easily construed as the return of affective permeability, temporal openness, and existential hope, experiences that patients explicitly link to. Such findings demonstrate that diagnostic criteria on guilt or anhedonia reflected in psychometric instruments (that is, the only current way we

measure efficacy of a certain medication) capture only the surface of Ratcliffe's pre-intentional "existential guilt" [75]. Work on phenomenological profiles of medication could potentially explain this structural shift that is repaired.

The very operationalisation of diagnostic criteria and outcome measures is a double-edged sword. Rating scales such as the mentioned HAM-D or PANSS, which facilitate drug trials, are inherently problematic since they distill complex experiences into countable items. This leads to screening out the pre-intentional shifts that, according to our hypothesis, are decisive for the therapeutic effect. To be specific, when a drug "changes" what Ratcliffe calls "existential guilt", this transformation can be registered on a scale only indirectly, via partial proxies such as "feelings of worthlessness" or "anhedonia". The scale, therefore, demonstrates efficacy while also concealing the phenomenon that makes that efficacy meaningful.

A potential way forward is to complement psychometrics with patient-led micro-phenomenological inquiry [76]. This means training patients (and trial participants) to describe the fine-grained dynamics of their lived experience without imposing theoretical filters. Since there is no data in the literature that aligns with these standards, our proposition in this section of the paper is theoretical rather than empirical. We aspire to provide an initial "spark" for further theoretical "fleshing out" of this idea, which would then potentially serve as a basis for future empirical work.[10]

## 8. Conclusion and further developments

In conclusion, the adoption of a phenomenological, embodied, and enactive approach to psychopharmacology permits a more comprehensive understanding of the influence of psychotropic medications not only on symptoms but also on the lived experiences of patients. By acknowledging the impact of these medications on subjective experience, existential situatedness, and embodied selfhood, clinicians can cultivate a more nuanced understanding of their therapeutic effects and limitations. A shift from a biochemical model to an embodied framework could lead to a transformation in therapeutic objectives, with an increased emphasis on the significance of reestablishing a connection between patients and their embodied being-in-the-world.

Further developments in this field could include the creation of detailed phenomenological profiles for various psychopharmaceuticals and the implementation of a

[10] We are very thankful for the reviewers comment here, since based on it, we have been able to specify and more clearly articulate our proposition.

more personalised approach to treatment that recognises the unique embodied experiences these medications produce. Furthermore, extending the embodied perspective beyond schizophrenia and depression to encompass disorders such as hypochondriasis, somatoform disorders, and anorexia nervosa could facilitate the acquisition of new insights into the manner in which explicit body awareness and interoceptive disruptions contribute to psychopathology.

Further insights will be gleaned from the experiences of clinicians themselves. This information maps the "clinical instinct" developed through the everyday practice of encountering and prescribing data that is beyond what is given within the narrow constraints of clinical guidelines or receptor-based diagrams. It is only to be found in the intersubjective interplay enacted within the patient-physician setting.

**Conflict of Interest Statement**

The authors have no conflicts of interest to declare.

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