

# A Game of Perspectives: An MRI-Based Analysis of Implicit Mind-Brain Models in Schizophrenia

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**Abstract**—Our exploration of schizophrenia encompassed a multi-dimensional analysis from three distinct perspectives: research, philosophy, and fieldwork. A central focus of our investigation delved into the intricate relationship between the brain and the mind, with particular attention to the enigmatic explanatory gap that has long challenged our comprehension. Within the realm of research, a prevailing paradigm often implies a model in which the mind emerges as a product of the brain. This prevailing model, alongside the disjointed nature of these three perspectives—research, philosophy, and fieldwork—operating in relative isolation, underscores a critical issue. To transcend these constraints and to advance our understanding of schizophrenia, the brain-mind interaction, and the well-being of patients, we advocate resolutely for a holistic approach. Such an approach harmonizes the biological, social, and psychological dimensions of this complex condition, fostering personalized care strategies tailored to individual clinical profiles while addressing the broader needs of patients, including facets of identity, meaning, and resilience. In essence, our analysis underscores the imperative of unifying these distinct realms of inquiry, emphasizing that a holistic perspective holds the key to not only bridging the persistent gap between the brain and the mind but also to vastly improving the quality of care and support for individuals grappling with schizophrenia, thereby revolutionizing the landscape of mental healthcare.

## 1. INTRODUCTION

Since I was a little kid, I recurrently asked myself questions about why the way I perceived myself was so different from the way I perceived others. I was fascinated by the nature of life. The experience of Axis Mundi.

When I faced my biggest depression 2 and a half years ago, I was also fascinated by how previous traumatic experiences left such heavyweights in my subconscious. I didn't know how to face a problem that wasn't in front of me but inside my head, in my thoughts, dreams, and my whole body.

Then I started to learn about spirituality, psychology, and alternative approaches. Suddenly, I found myself with tools I could use in that mental realm.

After overcoming that depression, I swore to myself that I wanted to understand why that worked. What was the underlying mechanism that helped me and could potentially help so many like me grappling with mental illness?

As a neuroimager, I started to get more interested in the brain-mind interaction. While doing research, and trying to understand what we know about the mind, I found myself in front of a landscape of many theories that contradicted each other.

I could connect my personal experience with some of the theories; the ones that didn't see the mind as just a product of the brain, and described the "will" as an illusion.

It is in this big search for meaning in my life that I decided to do an analysis of the field through different lenses, putting together everything I learned in these last 2 years and a half.

### *A Game of perspectives*

In the vast landscape of medical science, psychiatry stands as both sentinel and explorer. It guards the citadel of human mental well-being and ventures into the intricate territory where the enigmatic realms of the mind and the intricate circuitry of the brain intersect. It is a field dedicated to the meticulous study, compassionate treatment, and precise diagnosis of a broad spectrum of mental disorders, each representing a unique chapter in the complex narrative of human psychology. Among these conditions, schizophrenia emerges as an enduring mystery—an enigma that has captivated the imaginations of scholars and clinicians for generations.

To embark on this journey of understanding, we must first establish a sturdy foundation, one rooted in the principles of open science. Open science is the keystone that facilitates the harmonious convergence of diverse perspectives—from philosophy, and scientific research, to real-world fieldwork. These distinct viewpoints, representing varying levels of epistemic variation, converge to confront the formidable challenge posed by the brain-mind interaction [1]. In this introduction, we will lay the groundwork by exploring the fundamental elements that underpin our exploration of schizophrenia, the brain-mind interaction, and the pivotal role played by Magnetic Resonance Imaging (MRI) studies in advancing our comprehension of this intricate relationship.

### *Psychiatry and the Study of Mental Disorders*

At the core of our exploration lies psychiatry, a discipline that encompasses the scientific and medical aspects of mental health. Psychiatry serves as the vanguard of our efforts to comprehend the human psyche, offering valuable insights into the nature of mental disorders, their diagnosis, and their treatment. It is through the lens of psychiatry that we gain access to the complexities of schizophrenia.

Within the realm of psychiatry, the study of mental disorders is a multifaceted endeavor. It involves the systematic investigation of the intricate interplay between biological, psychological, and environmental factors that contribute to

the emergence of mental health conditions. Psychiatrists, as dedicated practitioners of this discipline, employ various tools, methodologies, and therapeutic approaches to unlock the mysteries of the human mind.

### *Schizophrenia: A Complex Mental Disorder*

Our central focus in this exploration is schizophrenia, a condition that challenges the boundaries of our understanding. Schizophrenia is a disorder characterized by a constellation of symptoms, including hallucinations, delusions, disorganized thinking, and social withdrawal. Typically manifesting in late adolescence or early adulthood, schizophrenia has the power to reshape lives, both of those directly affected and the broader community that supports them. To comprehend the complexities of schizophrenia, we must first grapple with its definition. Coined by the Swiss psychiatrist Eugen Bleuler in 1911, the term "schizophrenia" encapsulates the unique set of symptoms that characterize this condition. However, schizophrenia is not a monolithic entity; rather, it encompasses a spectrum of experiences and presentations. It is this inherent heterogeneity that compels us to look beyond the surface and delve deeper into the enigma.

### *The Brain-Mind Interaction: Philosophical Foundations*

Central to our exploration is the intricate relationship between the brain and the mind—a relationship that has puzzled philosophers, scientists, and thinkers throughout history. This dynamic interplay between the tangible, physical organ of the brain and the ephemeral realm of consciousness has sparked profound philosophical discourse.

In the philosophical arena, various models of the brain-mind interaction have emerged. These models offer different perspectives on how the brain and the mind are connected, and they provide valuable frameworks for understanding conditions like schizophrenia. Some models posit that the mind is an emergent property of the brain's physical processes, while others propose a more holistic view, suggesting that the mind transcends the boundaries of individual brains and is part of a broader, universal field of consciousness. These philosophical models are not mere abstractions; they serve as essential tools for interpreting the manifestations of mental disorders and guiding our approach to their study and treatment.

### *MRI Neuroimaging: Illuminating the Brain*

In our quest to unravel the mysteries of schizophrenia and the brain-mind relationship, we turn to Magnetic Resonance Imaging (MRI) as a powerful investigative tool. MRI is a non-invasive imaging technique that offers detailed insights into the structure and function of the brain. Its capacity to provide intricate anatomical and functional information positions it as an invaluable instrument in the study of mental disorders.

MRI serves as a window into the brain, allowing us to explore the neural underpinnings of mental health conditions.

It offers a means to visualize and understand the structural and functional alterations that occur in the brains of individuals with schizophrenia. By illuminating the brain's inner workings, MRI studies contribute to our ability to diagnose, treat, and ultimately comprehend conditions like schizophrenia from a biological perspective.

As we venture further into this exploration, we will delve into the research perspective, theoretical landscape, and practical dimension of schizophrenia, the brain-mind interaction, and the role of MRI studies. These dimensions, each with its unique vantage point, will enable us to navigate the intricate tapestry of schizophrenia and the complexities of its diagnosis and treatment. Our aim is not only to expand our knowledge but also to bridge the gap between theory and practice in the realm of mental health. Through this journey, we hope to shed light on the multifaceted nature of schizophrenia and the profound influence of philosophical models and advanced neuroimaging techniques on our understanding of mental disorders.

## 2. ANALYSIS

In our exploration of the intricate tapestry that is schizophrenia, we now pivot our attention to the "Analysis" section—a crucial juncture in our quest to understand, diagnose, and treat this multifaceted mental disorder. Within this section, we embark on a voyage into three distinct dimensions, each offering a unique lens through which we can decipher the enigma of schizophrenia.

In the upcoming subsections, we will navigate through the intricacies of research perspectives, theoretical paradigms, and practical considerations surrounding schizophrenia. Each of these perspectives offers a distinct point of entry into the labyrinth of this disorder, and together, they form a comprehensive framework for our analysis. By peering through these different lenses, we hope to gain a more profound comprehension of schizophrenia, ultimately contributing to more effective strategies for diagnosis, treatment, and support for individuals facing this formidable challenge.

### *2.1. Research Perspective: MRI Studies on Schizophrenia*

In our quest to decipher the enigmatic complexities of schizophrenia, we set our sights on the realm of Magnetic Resonance Imaging (MRI) studies—a realm where the mind's subtle nuances intersect with the brain's tangible intricacies. In this section, we embark on a thorough analysis of how schizophrenia research unfolds through the lens of MRI, examining the methodologies employed, the challenges faced, and the potential pathways toward a more comprehensive understanding of this multifaceted disorder.

### 2.1.1. Paper Selection Criteria

Our journey into the world of schizophrenia research through MRI studies begins with the careful selection of pertinent papers. The criteria for this selection are stringent, designed to ensure that the chosen papers represent the cutting edge of scientific inquiry. Recent publications in esteemed journals like *Nature*, *Schizophrenia*, and *Translational Psychiatry* serve as our guideposts, leading us through the labyrinthine corridors of research excellence [2–8].

### 2.1.2. Why Neuroimaging Research of the Brain?

Before we delve into the intricacies of MRI studies in schizophrenia, it is essential to elucidate the underlying rationale for conducting neuroimaging research on the human brain. Psychotic disorders, including schizophrenia, have long been associated with neuroanatomical and neurofunctional anomalies. These structural and functional deviations in the brain often underlie the clinical presentation of these disorders. Consequently, researchers turn to neuroimaging techniques, such as Magnetic Resonance Imaging (MRI), as powerful tools to probe the intricate neural landscape and unveil potential biomarkers or patterns associated with schizophrenia.

### 2.1.3. Diagnostic Challenges: The Reliability Conundrum

One of the primary challenges plaguing schizophrenia research resides within the realm of diagnosis. Schizophrenia diagnosis predominantly relies on behavioral criteria, as opposed to the objective biomarkers commonly found in many other medical fields. This diagnostic model, while indispensable, has proven to be less reliable than desired, [9, 10] marred by several factors:

- **Multiple Diagnostic Models:** Clinicians often employ different diagnostic models, including the International Classification of Diseases (ICD-10, ICD-11) and the Diagnostic and Statistical Manual of Mental Disorders (DSM-3, DSM-4, DSM-5). Each model introduces its own set of criteria and definitions, contributing to diagnostic inconsistency.
- **Patient Heterogeneity:** Individuals with schizophrenia exhibit a wide spectrum of psychological states, cognitive abilities, and clinical presentations. This inherent variability makes it challenging to establish a standardized diagnosis that accounts for the full scope of the disorder.
- **Clinician Inconsistency:** Clinicians may provide varying opinions on the same case, reflecting the subjective nature of diagnosis and the diversity of clinical judgment.
- **Nomenclature Inadequacy:** The terminology and diagnostic categories may not adequately capture the complexity and diversity of schizophrenia and related conditions.
- **Cohort Bias:** Schizophrenia research cohorts can be inadvertently biased toward the diagnostic model

employed by the clinician and the subjective experiences reported by the patients, further complicating cross-study comparisons and generalizability [11, 12].

### 2.1.4. Types of Research Conducted: Seeking Clues in the Brain

In response to these diagnostic challenges, researchers have explored diverse research avenues within the realm of neuroimaging. These investigations predominantly fall into three categories: neurochemistry, neuroimaging, and artificial intelligence (AI) modeling.

- **Neurochemistry:** One approach seeks to establish associations between schizophrenia and different neurochemical processes. Researchers delve into neurochemical markers to unravel potential links between neurotransmitter imbalances and the manifestation of the disorder.
- **Neuroimaging:** At the heart of our analysis lies this approach, which aims to unearth reliable biomarkers capable of distinguishing individuals with schizophrenia from their healthy counterparts. These biomarkers encompass a wide array of measures, including the gyrification index, grey matter volume, grey matter density, cortical thickness, and radiomics texture features, among others.
- **AI Modeling:** Harnessing the power of artificial intelligence, researchers explore classification methods that leverage neuroimaging data, clinical information, or a combination of both. These advanced models are designed to predict the development of schizophrenic behavior or identify subtle patterns intricately tied to the disorder.

### 2.1.5. Implicit Models: Materialism and Functionalism

As we scrutinize the selected papers, an intriguing observation emerges: there exists an implicit philosophical undercurrent that often goes unspoken. The majority of these studies implicitly embrace a materialistic or functionalistic model of the brain-mind relationship. In this paradigm, the brain is perceived as the generator of the mind, where phrases like "associated with," "leads to," and "observed in" subtly reinforce this perspective.

### 2.1.6. Schizophrenia Research at a Crossroads: Seeking New Horizons

While neuroimaging studies have undoubtedly catapulted our understanding of schizophrenia into new dimensions, it is increasingly evident that the field stands at a pivotal juncture. The traditional diagnostic model, reliant on behavioral criteria, has revealed itself to be inconsistent and inadequate in capturing the complexity of schizophrenia. As a result, the research community finds itself teetering on the precipice of transformation, seeking substantial progress in several key domains:

- **Biomarker Quest:** One avenue calls for the discovery of a reliable biomarker capable of objectively classifying

individuals with schizophrenia. Such a biomarker would transcend the limitations inherent in subjective behavioral criteria, providing a more precise and reliable diagnostic approach.

- **Neurochemical Insights:** Another approach aims to uncover abnormal neurochemical processes that unfold within the brains of individuals with schizophrenia. By shedding light on these underlying mechanisms, researchers strive to paint a more comprehensive portrait of the disorder's etiology.
- **AI Advancements:** Artificial intelligence models must continue to evolve, reaching a point where they can accurately predict the development of schizophrenic behavior. Such advancements offer not only early intervention opportunities but also the potential to revolutionize the diagnostic landscape. AI-driven predictive models may ultimately enable clinicians to identify individuals at risk for schizophrenia before the onset of overt symptoms, allowing for timely intervention and personalized treatment plans.
- **Exploring New Frameworks:** In parallel with these technological advancements, there is a pressing need to reevaluate the implicit philosophical underpinnings inherent in much of schizophrenia research. While materialistic and functionalistic models have provided valuable insights, they may inadvertently overlook critical aspects of the brain-mind relationship. Researchers must remain open to exploring alternative frameworks that transcend the boundaries of these traditional paradigms. Perhaps a new framework, one that embraces a more holistic view of the mind-brain interaction, is essential to comprehensively understand the neuroscience of schizophrenia.

As we navigate through the research perspective of MRI studies on schizophrenia, it becomes increasingly evident that the field stands on the cusp of transformation. The challenges and opportunities encountered on this journey have the potential to reshape the future of schizophrenia research. With innovative biomarkers, neurochemical insights, AI-driven predictive models, and a willingness to explore new philosophical frameworks, we are poised to embark on a more comprehensive understanding of this complex disorder. This evolving landscape promises not only to redefine diagnosis and treatment but also to provide hope to individuals affected by schizophrenia and their families, illuminating the path forward in our collective quest for mental health solutions.

## 2.2. *Theoretical Perspective: Mind-Brain Interaction Models*

In our quest to unravel the intricate mysteries of schizophrenia and its underlying neurobiology, we pivot our focus toward a theoretical standpoint—an exploration of the diverse models that attempt to elucidate the enigmatic relationship between the brain and the mind. This theoretical perspective delves into the essence of consciousness, the explanatory gap that challenges our understanding, and the myriad philosophical views that encapsulate the brain-mind interaction.

### 2.2.1. *Brain-Mind Interaction Introduction: The Nexus of Neuroscience*

At the very heart of our exploration lies the captivating intersection of the brain and the mind. This relationship forms the basis of modern neuroscience, as it grapples with understanding the complex interplay between these two seemingly disparate realms.

Neuroscience has illuminated the bidirectional nature of this interaction. On one hand, we observe how drugs and various neurobiological factors can influence the mind by altering brain function [13]. The profound impact of psychoactive substances on consciousness serves as a tangible testament to this phenomenon. Conversely, the mind itself wields a remarkable influence over the physical realm. The well-known placebo effect, where beliefs and desires can influence physical outcomes and even alleviate symptoms [14, 15], demonstrates the potent mind-brain connection. Furthermore, within the domain of depression, it's observed that the placebo response, where individuals experience improvement from a treatment with no active substance, occurs in sync with the response to actual antidepressant medication [16]. This finding highlights the significant impact of the placebo effect in mental health treatment. In simpler terms, when people with depression feel better due to a placebo, they tend to feel better at a similar rate as those taking real antidepressant medication. This is especially important in mental health treatment, unlike fields like oncology, where the placebo effect plays a comparatively minor role in therapeutic outcomes [17].

This bidirectional relationship underscores the intricate interplay between the mental and physical aspects of our being. It prompts us to contemplate whether the mind emerges solely from the brain's intricacies or if it transcends the corporeal, a question that leads us to the heart of the explanatory gap.

### 2.2.2. *Explanatory Gap: Bridging the Chasm of Consciousness*

Within the realm of the mind-brain interaction, we encounter a profound challenge known as the explanatory gap. This intellectual chasm manifests in two distinct facets—the easy problem of consciousness and the formidable hard problem of consciousness [18].

The easy problem of consciousness pertains to the mechanisms that explain how the brain processes information, inte-

grates sensory experiences, and generates cognitive functions. While these questions are undoubtedly complex, they are deemed "easy" in comparison to the enigma of subjective experience itself [18]. Neuroscientists have made significant strides in mapping neural pathways and identifying correlations between brain biomarkers and various mental states, including those associated with schizophrenia. However, these achievements merely scratch the surface, leaving us with an incomplete understanding.

In stark contrast, the hard problem of consciousness is the riddle that eludes easy resolution. It delves into the essence of subjective experience—why does the mere firing of neurons give rise to the vivid tapestry of consciousness, with its rich palette of thoughts, emotions, and sensations? The question "what is it like to be conscious" captures the essence of the hard problem [18]. It is here, in the realm of the hard problem, that we confront the most profound mysteries of the brain-mind relationship.

While neuroscience has made great strides in correlating brain activity with mental states, it has not bridged the explanatory gap by elucidating a causal relationship between the physical brain and the subjective experience of the mind. This lacuna underscores the complexity of the brain-mind interaction and calls for a multifaceted approach to understanding consciousness.

### 2.2.3. *Different Philosophical Models: Navigating the Maze of Ideas*

As we navigate the labyrinth of the brain-mind interface, we encounter an array of philosophical models, each attempting to shed light on the enigmatic relationship between the two. These models span a spectrum of thought, from those that posit the mind as a product of the brain to those that conceive of the mind as a universal field interacting with the brain [19].

*Identity Theory:* Identity theory posits that the mind and the brain are identical, meaning that mental states are one and the same as specific brain states. This model explains the interaction between the brain and the subjective experience of the mind by asserting that there is no distinct interaction problem; mental events and brain events are identical, so there is a direct correspondence. The mind, according to identity theory, is defined as a set of specific physical processes occurring in the brain. Mental states, such as thoughts and perceptions, are reduced to particular patterns of neural activity. In this view, the mind is entirely a product of the physical brain [20, 21].

*Functionalism:* Functionalism defines the mind by its functions and roles within a cognitive system. It explains the interaction between the brain and the subjective mind by emphasizing the functions that mental states perform in processing information. In functionalism, the mind is not tied to a specific physical substrate; instead, it is defined by what it does. Mental states are characterized by their functions, such as memory, perception, and problem-solving.

The interaction between the brain and the mind is understood as the brain's ability to carry out these functional processes. The mind is essentially a set of computational processes that can be realized by different physical systems, making it more abstractly defined than in other models [22, 23].

*Connectionism:* Connectionism defines the mind as a network of interconnected nodes or units that process information. The interaction between the brain and the subjective experience of the mind is explained through the activation and connections within this neural network. Mental states are patterns of activation across these nodes, and the mind's functions emerge from the interactions among them. Connectionism suggests that the brain's neural connections and activations give rise to mental states and cognition. The mind is, therefore, an emergent property of these neural networks, and its interaction with the brain is a result of the dynamic patterns of connections and activations within this network [24, 25].

*Biological Naturalism:* Biological naturalism defines the mind as a product of biological processes in the brain. It explains the interaction between the brain and the subjective experience of the mind by emphasizing the role of neurons, neurotransmitters, and other biological components. Mental states, including consciousness and thoughts, are seen as outcomes of the brain's physical and chemical activities. The mind is defined by these biological processes, and its interaction with the brain is direct, with mental states emerging from the intricate workings of neural networks and biochemical reactions. In this model, the mind is closely tied to the physical brain [26, 27].

*Computational Theory of Mind:* The computational theory of mind defines the mind as an information processing system that manipulates symbolic representations. It explains the interaction between the brain and the subjective experience of the mind by emphasizing mental processes as computations or algorithms. Mental states are akin to data processing operations performed by the brain. The mind is defined as a computational system, and its interaction with the brain is understood as the brain's execution of these information processing tasks. This model views the mind as a product of symbolic manipulation, with the brain serving as the hardware that performs these operations [28, 29].

*Emergentism:* Emergentism defines the mind as an emergent property that arises from the interactions of simpler components, such as neurons, in complex systems like the brain. The interaction between the brain and the subjective experience of the mind is explained by the idea that the mind emerges from the collective behavior of brain components. Mental states are not reducible to the properties of individual neurons but arise from their interactions. The mind is defined as an emergent phenomenon, and its interaction with the brain is the result of the complex dynamics and interactions

within the brain's neural networks. It views the mind as a higher-level property that cannot be fully explained by examining individual brain elements [30, 31].

*Materialism:* Materialism, also known as physicalism, defines the mind as a product of physical brain processes. In this view, mental states, such as thoughts and emotions, are considered identical to specific brain states and activities. The interaction between the brain and the mind is direct and causal, with mental events being entirely reducible to the physical processes occurring in the brain. The mind is essentially an emergent property of the brain's physical activities [32, 33].

*Substance Dualism:* Substance dualism posits that the mind and the brain are fundamentally distinct substances. In this model, the mind is considered non-physical, immaterial, and conscious, while the brain is physical. The interaction between the brain and the mind, according to substance dualism, occurs at specific points, such as the pineal gland. However, this interaction poses a significant challenge known as the "interaction problem," as it's not clear how these two fundamentally different substances interact causally [34, 35].

*Property Dualism:* Property dualism acknowledges that there is only one substance (the physical), but it posits that there are irreducible mental properties or qualities, such as consciousness and intentionality, alongside physical properties. The mind, in property dualism, is defined by these unique mental properties. The interaction between the brain and the mind is still a philosophical challenge, but it doesn't involve distinct substances like substance dualism [36, 37].

*Idealism:* Idealism takes a radically different stance by asserting that the mind is the primary reality, and everything, including the physical world and the brain, is fundamentally mental or consciousness-based. In idealism, the mind defines both subjective experience and the external world, and the interaction between the brain and the mind involves the mind shaping or projecting the perceived physical reality. The mind, in idealism, is the foundational element of existence [38, 39].

*Panpsychism:* Panpsychism offers a distinctive perspective on the interaction between the brain and the subjective experience of the mind. According to panpsychism, the brain is not the sole generator of consciousness but rather a complex arrangement of conscious entities at various levels of complexity. In this view, the brain plays a role in organizing and orchestrating these micro-conscious elements to give rise to the rich and intricate conscious experiences that humans and animals possess. The interaction between the brain and the mind, therefore, is not a matter of the brain creating consciousness from scratch but of the brain participating in the aggregation and integration of pre-existing conscious properties. The mind, within the panpsychist framework, is not confined to the brain; it's a fundamental property of

the universe itself, with individual minds being instances or expressions of this cosmic consciousness. This perspective challenges traditional notions of consciousness generation and redefines the mind as an intrinsic aspect of all existence [40, 41].

#### 2.2.4. Grouped Perspectives: Mind as a Product or a Field

In the realm of diverse philosophical models, a profound distinction emerges when we contrast how they conceptualize the mind versus the brain. While the definition of the brain remains relatively consistent across these models, the definition of the mind varies significantly. In fact, for each philosophical model, the definition of the mind can be seen as its hardcore truth, much like research programs as Lakatos explained [42]. These varying conceptions of the mind can also be seen as distinct research programs, each providing a unique lens through which to scrutinize the interplay between consciousness, cognition, and the enigmatic realm of the mind. This divergence prompts a categorization of these models into two overarching categories based on their stance regarding the nature of the mind:

- **Mind as a Product of the Brain:** Identity theories, functionalism, connectionism, biological naturalism, computational theory of mind, emergentism, and materialism all fall within this category. They propose that the mind arises as a product of physical brain processes, aligning with the notion that the brain creates consciousness.
- **Mind as a Field Interacting with the Brain:** Substance dualism, property dualism, idealism, and panpsychism take a different stance, proposing that the mind is not a mere byproduct of the brain but rather a distinct field or universal property that interacts with the brain. This perspective suggests that consciousness transcends the physical confines of the brain.

As we journey through the theoretical landscape of the brain-mind interaction, we encounter a rich tapestry of ideas and philosophical viewpoints. Each model offers a unique lens through which to explore the mysteries of consciousness and schizophrenia's enigmatic manifestations. In our quest for understanding, we are compelled to ponder whether the mind is a product of the brain's intricate machinery or if it exists as a universal field, forever challenging the boundaries of our comprehension. This theoretical perspective serves as the foundation upon which we navigate the complex terrain of schizophrenia research, offering a diverse array of insights into the nature of the mind and its intricate relationship with the brain.

### 2.3. *Practical Perspective: Fieldwork and Patient Care*

In this section, we delve into the practical aspects of schizophrenia diagnosis and care, shedding light on both the existing models of mental health services and the experiences of individuals diagnosed with schizophrenia. Understanding the fieldwork and patient care dimensions is essential for comprehending the real-world challenges and complexities that surround schizophrenia management. We begin by examining contemporary mental health service models and their associated limitations, highlighting the need for a more personalized approach. Subsequently, we explore the patient perspective, delving into the stigma and hardships often encountered by those diagnosed with schizophrenia. Together, these insights provide a comprehensive view of the practical landscape surrounding schizophrenia diagnosis and care.

#### 2.3.1. *Contemporary Mental Health Service Models and Their Limitations*

The landscape of mental health care is predominantly shaped by an evidence-based group-level symptom-reduction model [17], which serves as the guiding principle for treatment. Rooted in the principles of evidence-based medicine, this approach seeks to determine what works best for a given patient based on established knowledge. While this methodology is theoretically sound, its practical application often falls short, giving rise to a myriad of side effects and limitations.

One significant challenge arising from this model is the emergence of standardized, one-size-fits-all practices. This phenomenon, often referred to as "cookbook" medicine, risks neglecting the unique needs and circumstances of individual patients. The notion of evidence-based practice (EBP), while valuable, may not always yield outcomes that are directly relevant to patients on an individual level [17]. The limitations of this group-focused approach are compounded by the difficulty of translating findings from a collective context to personalized care.

Moreover, the implementation of this model can vary significantly between countries, reflecting differing approaches to mental health services. There's a common assumption that superior mental health services are inherently more "evidence-based." Consequently, routine outcome monitoring, which centers on symptom reduction, is often employed to gauge the quality of these services [17]. However, the organizational structure that revolves around diagnostic specialties, aimed at delivering evidence-based symptom reduction, presupposes the validity and usefulness of the diagnosis-EBP group-level symptom-reduction principle. This approach, in essence, places symptom reduction as the central construct in training mental health professionals, shaping service organization, and evaluating overall service quality.

Despite these efforts, there's an inherent challenge in reconciling "evidence-based" practices at the group level with patient-centered care at the individual level. The model's development has largely centered around addressing diseases

and symptoms, often sidelining the exploration of resilience and possibilities [17]. This raises a critical question about the extent to which professional training and service planning and evaluation should incorporate a more comprehensive range of factors beyond mere symptom reduction.

The prevalence of standardized approaches extends to the management of patients with primary psychosis, which is predominantly marked by stereotyped interventions. In most cases, antipsychotic medications, particularly second-generation variants, are the go-to treatment, with a clear preference over first-generation options [43]. Remarkably, cognitive behavioral therapy, despite its established efficacy, remains a seldom-utilized resource in many countries. Psychosocial interventions, though provided, frequently lack the support of research validation. Evidence-based family interventions and supported employment programs, both recognized for their potential benefits, are rarely implemented in routine practice [43].

Although the importance of personalized care is acknowledged and supported by the majority of clinicians, its effective integration into clinical contexts remains a challenge. This personalization gap is particularly pronounced in many clinical settings. The espoused ideals of "recovery-oriented" mental health services, which emphasize empowerment, identity, meaning, and resilience, often struggle to materialize consistently in practice [43].

The deterministic and often bleak prognosis associated with early schizophrenia diagnoses further complicates intervention efforts. It's not uncommon for individuals initially diagnosed with schizophrenia to later exhibit signs of significant recovery, prompting professionals to reconsider the accuracy of their initial assessments [44]. This paradox underscores the limitations of the prevailing diagnostic and treatment paradigms.

The core of contemporary psychiatric practice revolves around the hypothesis of "finding the right medication for the right brain disease." This foundational belief, especially prevalent in the dominant Northern American perspective, has profoundly influenced mainstream research and the broader societal understanding of mental health. [45–47] Academic psychiatry predominantly views the diverse spectrum of mental variations through the prism of finding the right medication for the presumed brain disease.

This hypothesis shapes the trajectory of research and the prevailing messaging systems in the field of mental health. It influences the allocation of resources and the development of pharmaceutical interventions, often overshadowing alternative approaches that might prioritize holistic care, resilience-building, and patient-centered outcomes.

In conclusion, the prevalence of the evidence-based group-level symptom-reduction model in mental health care carries significant implications and challenges. It is essential to critically evaluate the limitations of this model, as it influences the organization of services, professional training, and service evaluation. Recognizing the complexity and individuality of mental health challenges is a crucial step toward providing more comprehensive, patient-centered, and

effective care. Addressing the gaps in the current model and considering alternative approaches could help bridge these challenges and lead to more holistic and resilient-focused mental health care.

### 2.3.2. *Patient Experiences and Stigma in Schizophrenia Diagnosis and Care*

The diagnosis of schizophrenia carries a heavy burden, not only for the individuals directly affected but also for their families and the professionals providing care. Schizophrenia has long been associated with a host of negative stereotypes, including notions of insanity, hopelessness, desperation, and even violence. These stigmatizing perceptions have a profound impact, perpetuating discrimination and hindering access to appropriate care [44].

One of the most significant challenges individuals with schizophrenia face is the fear of disclosing their condition. The pervasive stigma surrounding schizophrenia can lead to discrimination and its far-reaching repercussions [44]. Consequently, many patients choose to keep their diagnosis hidden, adding another layer of complexity to their already challenging journey toward recovery. This fear-driven silence not only isolates individuals but also impedes their ability to access the support they need.

Mental health professionals themselves encounter difficulties when it comes to communicating a diagnosis of schizophrenia with their patients and their families [44]. The weight of the stigma associated with this diagnosis often makes these conversations emotionally charged and complex. Moreover, the negative perceptions of schizophrenia can affect the therapeutic relationship between professionals and their patients, potentially impeding the development of trust and collaboration critical for effective care.

It is essential to recognize that schizophrenia represents only a fraction of a much broader spectrum of psychotic disorders. However, it tends to receive disproportionate attention, overshadowing other forms of psychosis [44]. This narrow focus on schizophrenia not only perpetuates stereotypes but also limits the understanding and treatment of the diverse range of psychotic experiences that individuals may encounter.

In summary, schizophrenia diagnosis and care are marred by stigma, discrimination, and misunderstanding. The negative perceptions associated with this condition create barriers for individuals seeking help and hinder open communication between patients, their families, and mental health professionals. It is crucial to shift the narrative surrounding schizophrenia and psychosis to foster a more empathetic and inclusive approach to mental health care, recognizing the full spectrum of experiences and the unique challenges faced by each individual.

## 3. CONCLUSION

In the ever-evolving realm of mental health care and the study of schizophrenia, it becomes apparent that we are still navigating a terrain characterized by uncertainty and a lack of consensus. To better understand this complex landscape, we can turn to Thomas Kuhn's philosophy of science and his notion of scientific revolutions.

Kuhn's cycle of scientific development consists of distinct phases, and it appears that psychiatry, especially concerning schizophrenia, remains in a pre-scientific phase [48]. In this phase, multiple, often incompatible, and incomplete theories coexist, preventing the emergence of a unified understanding. Consequently, much of the scientific inquiry in this field takes the form of lengthy books, as there is no shared body of knowledge that can be taken for granted. This fragmentation impedes progress and hinders the development of effective treatments and care practices.

One glaring issue in this field is the lack of cohesion among research, philosophy, and fieldwork. For the optimal care and treatment of schizophrenic patients and the advancement of mental health care in general, these three pillars must collaborate more effectively. Establishing robust connections between research, philosophical inquiry, and practical implementation is crucial to bridge the gaps that currently hinder progress.

A significant concern lies in the overreliance on an evidence-based group-level symptom-reduction model in mental health care. While evidence-based medicine provides valuable insights, a one-size-fits-all approach may not be suitable for patients with such diverse and complex conditions as schizophrenia. Relying solely on this model risks reducing patients to mere aggregates of symptoms, overlooking their unique experiences, strengths, and challenges.

Furthermore, an implicit drift toward a mind-as-a-product-of-the-brain model can be observed in contemporary approaches. While understanding the neurobiological underpinnings of mental health is essential, it is equally crucial not to oversimplify the intricate mind-brain interaction. The reductionist perspective may hinder our ability to grasp the full scope of this complex relationship.

In this context, our analysis has underscored the critical importance of addressing the differences in these approaches and fostering a more cohesive framework. This entails not only acknowledging the insights gained from MRI-based research into the structural and functional aspects of the brain but also recognizing the implications of implicitly assuming the mind as a product of the brain. This assumption narrows our perspective and limits our ability to fully comprehend the nuanced nature of mental health conditions.

However, contemplating the differences in these approaches sheds light on the potential paradigm shift required for neuroscience. By shifting from a model where the mind is seen as a product of the brain to one where it's considered a universal field, we open new avenues for understanding mental health. In the conventional model, the search for the cause of a disease invariably centers on the brain, thereby excluding the exploration of mental illness from alternative perspectives.



Conversely, adopting the perspective of the mind as a universal field broadens our horizons. It not only allows us to examine the brain but also encourages the exploration of the influence of social and mental factors on mental health. This paradigm shift grants us the opportunity to delve deeply into phenomena like the placebo effect and the impact of desires and beliefs on the physical body. Such an approach could alleviate the physical burden on patients, reducing the necessity for potent drugs with potential side effects.

However, the realization of such a paradigm shift is closely tied to empowering patients with the ability to make informed choices regarding their treatment. We propose a functionalistic approach that allows patients to decide their treatment for schizophrenia from different epistemic variations or levels of understanding.

In this approach, patients are not limited to a one-size-fits-all treatment model but are presented with a menu of options. These options could include traditional medication-based treatment, group therapy, alternative therapeutic approaches, or a combination of these. Patients, as active participants in their care, can select the treatment that aligns with their personal beliefs, values, and preferences.

Such a patient-centric approach not only respects individual autonomy but also acknowledges the diverse perspectives within the field of mental health care. It bridges the gap between different epistemic variations by embracing multiple viewpoints and recognizes that each patient's experience of schizophrenia is unique.

In conclusion, the field of psychiatry and the study of schizophrenia face significant challenges, including a lack of consensus, fragmentation, and a narrow focus on symptom reduction. To advance our understanding and provide better care, we must foster collaboration between research, philosophy, and fieldwork. We should also consider new philosophical perspectives that embrace the complexity of the mind-brain interaction. This exploration of schizophrenia from multiple angles, including MRI-based studies, highlights both the potential and limitations within each approach. It underscores the imperative of harmonizing these perspectives to transform the landscape of mental health research and care.

A holistic approach that extends beyond symptom reduction to encompass all aspects of a patient's life, including employment, housing, self-care, social relationships, and education, is essential [49, 50]. Moreover, it emphasizes the cultivation of identity, meaning, and resilience in patients' lives. This comprehensive approach not only acknowledges the complexity of schizophrenia but also respects the dignity and agency of individuals affected by it. Such a holistic perspective encourages us to transcend the constraints of reductionist thinking and embrace a richer, multidimensional understanding of the mind, the brain, and the intricate interplay between them.

By weaving together the insights gained from neuroimaging, the challenges posed by implicit assumptions, and the call for holistic care, we can pave the way for a more comprehensive understanding of mental health conditions and more effective

treatment strategies. This holistic approach holds the promise of alleviating the burdens faced by patients while providing a clearer, more compassionate, and patient-centric path forward in the realm of mental health research and care.

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