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Exploring the Cognitive Systems and its Distortion

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Aim: In this article, we undertake an investigation into the cognitive operations of the mind, delving into its diverse components, such as basic cognitive systems, cognitive distortion, thinking, memory, perception, feeling, emotion, and beyond. We aim to offer a thorough understanding of the intricate interactions among these components and their roles in information processing within the mind.

Method: Through a meticulous analysis of each component and its role in cognition, we seek to elucidate the complex mechanisms underlying human thought and behavior. The fabric of our conscious experience unfolds in response to the evolutionary trajectory and ongoing development of our cognitive faculties. As these faculties undergo refinement and continual improvement, our capacity for rational thought likewise ascends, revealing a heightened level of conscious awareness.

Finding: This study investigates the processes involved in forming logical patterns in the human mind and the mechanisms underlying the emergence of cognitive distortion.

Results: Cognitive distortion can significantly impact our perceptions and judgments, leading to inaccurate decisions. Recognizing and understanding these cognitive biases, such as the availability heuristic, anchoring effect, and self-serving bias, are crucial for enhancing critical thinking and decision-making skills. By fostering a greater awareness of our cognitive limitations, we can strive for more objective analyses in our interactions with the world, ultimately improving our personal and collective decision-making outcomes.

Conclusion: Conscious experience is vital in enhancing our logical abilities. It shapes our cognitive processes through sensory input, interactions, and knowledge, allowing for diverse perspectives that enrich our reasoning with creativity and empathy. This interplay between our brain's biology and conscious experiences ensures that our logic evolves with new information, improving our understanding of the Mind.

Keywords: Cognitive Science, Cognitive Distortion, Logical phenomena, Mathematics Logic, philosophy of Mind.

Introduction

The mind remains a captivating enigma within the realm of human existence, drawing scholars from diverse disciplines to embark on an enduring quest forunderstanding that spans across epochs.

Despite the remarkable strides achieved in domains ranging from philosophy to neuroscience, the veil shrouding the mind's innermost workings remains steadfastly drawn (for more information, see Hofmann, De Raedt & Nolen-Hoeksema, 2017 and Chalmers, 2015, 2018). At its essence, the mind weaves a rich tapestry of facets, encompassing thoughts, emotions, perceptions, memories, and consciousness itself. It emerges as the locus of our subjective experiences, shaping our perceptions, steering our actions, and endowing us with a kaleidoscope of cognitive capacities. Throughout history, philosophers have grappled with profound inquiries regarding the essence of the mind, its entwinement with the corporeal form, and the elusive nature of consciousness. Psychologists, in turn, have meticulously dissected mental processes, behavior, and the intricate dance between internal cognition and external stimuli. Concurrently, neuroscientists have ventured into the labyrinth of neural pathways, striving to decode the neural underpinnings of diverse mental phenomena. Meanwhile, cognitive scientists have plumbed the depths of higher-order cognitive functions, from attention and memory to language and problem-solving.

Cognitive distortion, also known as cognitive distortions, are patterns of thinking that are inaccurate, biased, or irrational. This distortion can impact how we perceive ourselves, others, and the world around us. They can lead to negative emotions, maladaptive behaviors, and unhealthy relationships (Tomasino & Rumiati, 2021).

Some common cognitive distortions include:

1.All-or-nothing thinking: Seeing things in black-and-white terms, with no shades of gray. For example, thinking that if you are not perfect, you are a failure.

2.Overgeneralization: Drawing broad conclusions based on a single event or piece of evidence. For example, believing that because you failed at one task, you are a failure in all areas of your life.

3.Catastrophizing: Assuming the worst possible outcome will happen. For example, thinking that one mistake will lead to a chain of events that will ruin your life.

4.Personalization: Blaming yourself for events that are beyond your control. For example, believing that a friend's bad mood is your fault.

5.Emotional reasoning: Believing that your feelings reflect reality. For example, thinking that because you feel stupid, you must be stupid.

6.Mind reading: Assuming you know what others are thinking or feeling without any evidence. For example, believing that someone is mad at you without asking them.

To deepen our comprehension of the cognitive systems of the mind and the distortions they may exhibit, it is vital to understand the mechanisms of conscious experience. Cognitive distortions are defined by patterns of thinking marked by inaccuracies, biases, or irrationalities. These errors have the potential to warp our perceptions of ourselves, others, and the world, ultimately resulting in negative emotions, maladaptive behaviors, and strained relationships. Recognizing and remedying cognitive distortions is essential for preserving mental well-being and promoting healthy cognitive functioning. Given the intimate connection between these cognitive errors and our consciousness system, delving into the mind's consciousness system is imperative to refine our grasp of these distortions (Palladino & D'Amico, 2020) and (Faber & Faber, 2022).

The question of defining consciousness and understanding its nature has been a subject of deep contemplation and debate among philosophers, neuroscientists, and cognitive scientists. While there is no universally agreed-upon definition of consciousness, it generally refers to the subjective experience of being aware of oneself and the surrounding world. Philosophers often ponder the question of whether the concept of consciousness can be precisely defined. If we entertain the idea that a comprehensive definition of consciousness is attainable, it would inherently be an experience of consciousness in itself. Furthermore, if such a definition were to be achieved, it would need to be capable of encompassing and expressing the entirety of our experiences through its inherent characteristics.

One of the challenges in defining consciousness precisely is that it is an experiential phenomenon. Any attempt to define consciousness would inherently involve experiencing it, which creates a circularity in the definition. In other words, in order to define consciousness comprehensively, one would need to have a conscious experience of that definition. Moreover, if we assume that a comprehensive definition of consciousness is achievable, it would need to encompass and express the entirety of our subjective experiences. Consciousness is not limited to a single aspect or isolated phenomenon but encompasses a wide range of mental states, perceptions, thoughts, emotions, and sensory experiences. Any definition that aims to capture the full scope of consciousness would need to account for these diverse aspects (Chalmers, 2015, 2018).

Integrated Information Theory (IIT) has gained much attention for potentially explaining, fundamentally, what the physical substrate of consciousness is. According to the IIT, consciousness is believed to emerge from the integration of information across a highly interconnected network of elements. The theory suggests that the extent of consciousness is directly related to the quantity of information integrated within a given system. Tononi (2008, 2012 & 2015) has studied integrated information, and he defined the function ϕ as the amount of information generated by a complex of elements. The foundational concepts behind IIT were extremely innovative, and it has been very exciting to see certain predictions being upheld in experiments. It aims to describe both the quality and quantity of the conscious experience of a physical system, such as the brain, in a particular state. An IIT aims to specify the conscious experience of each system in a particular state. As such, a mathematical model of such experiences will be required. Numerous books and articles, including (Chalmers, 2003 & 2009) and others, have been dedicated to the exploration and examination of consciousness, as well as the quest for an exact definition of this elusive phenomenon. These works delve into the intricacies of consciousness, exploring its nature, properties, and theoretical frameworks in an attempt to shed light on its fundamental aspects. Chalmers presents the hard problem of consciousness, which refers to the challenge of explaining how and why subjective experiences arise from physical processes in the brain. He argues that purely physical explanations, such as those based on neuroscience, fail to account for the subjective aspect of conscious experience. Chalmers distinguishes between the ”easy problems” of consciousness, which involve explaining cognitive functions like perception and attention, and the hard problem, which focuses on subjective experience. He suggests that a satisfactory theory of consciousness must bridge the explanatory gap between physical processes and subjective experience.

In this article, our objective is to explore the intricate process of shaping the consciousness experience within the mind by closely examining the structure of cognitive systems observed in living organisms. We aim to shed light on the functioning of cognitive systems in living beings from a biological perspective. Our inquiry extends to understanding the evolutionary journey of these cognitive systems and their role in shaping the cognitive systems present in the mind. The biological evolution of cognitive systems involves a fundamental logical process geared towards adapting to environmental stimuli while retaining internal characteristics. This process of adaptation and preservation serves as the foundation for the logic ingrained in our minds, marking the evolutionary apex of cognitive mechanisms. The philosophy of logic delves into the intricate fabric of fundamental principles, concepts, and theories that underpin logical reasoning and inference. Philosophers of logic embark on a quest to unravel the aims and objectives of logic, probe the acquisition and justification of knowledge within the realm of logic (epistemology), and scrutinize the methodologies employed in logical inquiry. The practice-based approach advocates for a meticulous examination of the activities and methodologies employed by experts within a given discipline to gain deeper insights into its methodology and epistemology. It posits that understanding how knowledge is generated, validated, and advanced within a discipline necessitates a close study of the practical engagements of its practitioners. When applied to the philosophy of logic, the practice-based approach entails a thorough analysis of how logicians conduct their inquiries, encompassing the methods utilized, types of reasoning employed, and criteria utilized to assess argument validity. By immersing themselves in the practices of logicians, philosophers glean invaluable insights into the essence of logical inquiry, the benchmarks of logical reasoning, and the epistemic underpinnings of logic.

Methods

This article aims to elucidate the process of constructing logical phenomena in the mind. The initial step involves exploring mental states and cognitive distortions through the lenses of both philosophy and psychology. To provide a comprehensive understanding, biological findings have been incorporated to shed light on the origins of the human cognitive system and to clarify the connection between the cognitive systems of living beings and those of the human mind. The biological insights are drawn from cutting-edge research in neuroscience and evolutionary biology, which highlight the structural and functional underpinnings of cognitive processes. These findings help elucidate how neural mechanisms contribute to the development of logical reasoning and how evolutionary pressures have shaped our cognitive faculties. From a psychological perspective, the article examines various cognitive theories and models that elucidate how individuals process information, solve problems, and develop reasoning skills. These models highlight the interplay between innate cognitive structures and environmental influences, emphasizing how experiences and learning shape logical abilities.

Philosophically, the article examines the conceptual frameworks that have been proposed to understand the nature of logic and reasoning. It explores historical and contemporary debates about the origins of logical thought, the role of language and symbols, and the relationship between logic and other cognitive functions.

By integrating these diverse perspectives, the article presents a holistic view of how logical processes are formed in the mind. It discusses the dynamic interplay between biological substrates, psychological mechanisms, and philosophical constructs, highlighting how each domain contributes to our understanding of logic.

My methodology for crafting this article revolves around synthesizing findings from authentic and peer-reviewed sources in biology, psychology, and philosophy. This interdisciplinary approach ensures a robust and nuanced exploration of the topic, providing readers with a deeper insight into the complexities of human cognition and the development of logical reasoning.

Discussion

3.1. Cognitive system of Mind and its Distortion

The cognitive systems of the mind and its distortion are recognized as a multifaceted ensemble comprising a myriad of mental processes intricately interwoven to decipher information, construct comprehension, and steer behavior. Among these systems, one discerns the foundational pillars of sensation and perception, attention, memory, language and communication, executive functions, and metacognition. In their confluence, these cognitive systems engender a tapestry of interconnected processes intricately interwoven to shape perception, illuminate understanding, and modulate behavior. The comprehension of their functioning and symbiotic interactions unveils profound insights into the labyrinthine complexities of human cognition and the enigmatic nature of the mind's workings. The cognitive system of the mind encompasses various mental processes involved in perception, memory, reasoning, decision-making, and problem-solving. These processes work together to help us understand and interact with the world around us. However, despite the sophistication of the cognitive system, distortion can occur in its functioning, leading to inaccurate or flawed outcomes. Cognitive distortion refers to patterns of thinking that are biased, irrational, or distorted in some way. This distortion can manifest in different forms and can impact our perceptions, judgments, and behaviors (Eysenck & Keane, 2015).

In the following section, we will introduce additional common cognitive distortions, building upon some of the biases mentioned in the previous section:

Availability Heuristic: This heuristic involves making judgments and decisions based on the ease with which examples or instances come to mind. We tend to overestimate the likelihood or importance of events that are easily recalled from our memory.

Anchoring and Adjustment: This bias occurs when we rely too heavily on an initial piece of information (the anchor) when making judgments or estimates, even if the anchor is arbitrary or irrelevant. We then make adjustments from that initial anchor, but those adjustments are often insufficient.

Overconfidence Effect: This bias refers to the tendency to overestimate our own abilities, knowledge, or the accuracy of our judgments. We often have more confidence in our beliefs and predictions than is objectively justified.

Gambler's Fallacy: This fallacy involves believing that past random events or outcomes influence future probabilities, even when the events are independent of each other. For example, assuming that the chances of winning a coin toss increase after a series of consecutive losses.

Halo Effect: This bias occurs when our overall impression of a person, object, or situation influences our judgments or evaluations of specific traits or characteristics related to that entity. For example, assuming that an attractive person is also intelligent or trustworthy.

Hindsight Bias: This bias involves the tendency to perceive events as more predictable than they actually were after they have occurred. We have a tendency to believe that we "knew it all along" when, in reality, the outcome was uncertain or unpredictable.

Framing Effect: This effect refers to the way in which information is presented or framed, which can influence our judgments and decisions. Our choices can be swayed by the way options are framed, emphasizing potential gains or losses.

Self-Serving Bias: This bias involves attributing our successes to internal factors
(such as our abilities or efforts) while attributing our failures to external factors (such as luck or circumstances)
. It allows us to maintain a positive self-image and protect our self-esteem.

These are just a few examples of cognitive errors that can impact our thinking and decision-making processes. It is important to be aware of these biases and strive for critical thinking and objective analysis in order to mitigate their effects (for more information, see Aronson, Wilson & Akert, 2019).

The architecture of human cognition and perception intricately intertwines with its constituent elements, collectively sculpting a diverse spectrum of perceptual experiences. Our interactions with the world and our interpretations thereof are profoundly molded by the operational dynamics of these elemental components. From my philosophical standpoint, consciousness can be perceived as the initial term that permeates the system either through external sensory stimuli or via the internal dynamics of the system itself. This foundational translation lays the groundwork for our comprehension of the surrounding environment, with the efficacy of the system's operations contingent upon the quality of this primal translation. The efficacy of consciousness is inherently tethered to the adeptness of the system's sensory apparatus in both receiving and disseminating information to the realm of conscious awareness. By scrutinizing simpler systems prevalent in nature, such as those found in plants, insects, or even artificial intelligence constructs, we can glean valuable insights into the operational paradigms of more intricate systems like the human mind. Through a meticulous examination of systemic functionalities, we can approach philosophical inquiries concerning the human psyche and our interpretative faculties with heightened precision. It is imperative to acknowledge the inherent relativity underlying notions of absolute reality and truth. The veracity or fallacy of a phenomenon becomes deeply entwined with the idiosyncrasies of the system tasked with its processing. In the absence of systemic frameworks, concepts delineating the correctness or fallaciousness of propositions, as well as the authenticity or illusionary nature of phenomena, lose their conceptual foothold. It is within the domain of systemic existence that these conceptual constructs attain their semantic significance. Systems furnish the conceptual scaffolding within which such notions can be cogitated upon and comprehended.

In essence, the fabric of human cognition and perception is intricately interwoven with its constitutive elements, shaping an intricate tapestry of perceptual realities. Consciousness serves as the vanguard of interpretive translation, its efficacy contingent upon the adeptness of sensory mechanisms within the system. By delving into the operational mechanics of simpler systems, we can glean invaluable insights into the functioning of more complex ones. Fathoming systemic function equips us with the acumen to tackle philosophical quandaries with precision, acknowledging the intrinsic relativity that underpins notions of absolute truth and reality. It is within the realm of systemic existence that concepts such as correctness and authenticity derive their inherent significance.

To attain a comprehensive grasp of the intricate interplay between the chemical and physical dynamics of the brain and the phenomenon of consciousness, it is imperative to delve into the process of transmuting non-living chemical entities into living organisms and the subsequent evolution of cognitive systems (Azar, 2022 and Salcedo & Cárdenas, 2024). By delving into these processes, we can uncover valuable insights into the mechanisms that underlie the emergence of consciousness and how it relates to the intricate workings of the brain.

The hypothesis that life originated in hydrothermal vents on the ocean floor is widely accepted. However, some suggest life first developed in small saline ponds on land around four billion years ago and then spread to the sea. These ponds' structures allowed for diverse, dynamic patterns among species and facilitated flows between ponds, enhancing the growth and diversification of early life. This could explain the remarkable success of life once it established itself in suitable environments (Salcedo & Cárdenas, 2024).

As expounded by Pross (2021), the emergence of a sentient chemical system capable of evolution and adaptation to enhance its environmental interaction holds significant implications for the enhancement of persistence. This gradual process, spanning epochs of time, culminated in the emergence of the bacterial cell, which was a pivotal milestone in the evolutionary journey towards more resilient forms of life. According to Pascal and Pross (2023), even bacteria, which represent the simplest form of prokaryotic life, possess the ability to sense and respond to a wide range of environmental signals. These organisms can sense their internal conditions, coordinate with neighboring organisms, and activate complex response systems to address ongoing challenges (Shapiro, 2007).

Cognitive systems arise from the intricate interplay between chemical sensors within specific compounds and both external environmental stimuli and internal processes. This dynamic interaction fosters the development of unique characteristics in certain chemical compounds, eventually leading to the emergence of living organisms. As this evolutionary process unfolds, organisms with increasingly advanced cognitive mechanisms begin to emerge, collectively referred to as the mind. The mind encompasses a spectrum of cognitive abilities, including perception, memory, learning, and decision-making. These cognitive functions are intricately intertwined with the biological structures of organisms, notably the development of complex nervous systems and brain architectures that facilitate higher-order cognitive processes. Through the synergistic interaction of these cognitive mechanisms and biological structures, organisms demonstrate sophisticated behaviors, adaptability to their surroundings, and engagement in intricate cognitive activities. This holistic perspective underscores the integral role of both cognitive and biological components in shaping the capabilities and behaviors of living organisms.

Undoubtedly, the evolution of consciousness stands as a testament to the progressive refinement of cognitive mechanisms across the spectrum of living organisms. This evolutionary odyssey traces its origins to the dawn of life itself, potentially extending its roots even to the emergence of consciousness from non-living chemical substrates. Across epochs spanning geological time, this cognitive journey has unfolded with incremental refinement and burgeoning complexity, culminating in the intricate tapestry of consciousness observed in the most highly evolved organisms, including humans. The emergence of consciousness is postulated to have unfolded gradually throughout the course of biological evolution. Its nascent manifestations are likely manifested in the primordial milieu of simple living systems characterized by rudimentary forms of perception and elemental awareness. Remarkably, even single-celled organisms exhibit rudimentary sensory responses and a capacity to engage with their environment, offering tantalizing glimpses into the rudimentary contours of consciousness at its inception. As life forms proliferated and diversified, so too did their cognitive faculties evolve in tandem. The emergence of complex nervous systems and the refinement of sensory apparatuses facilitated the evolution of heightened information-processing capacities and nuanced perceptual acuity. This evolutionary trajectory heralded the advent of increasingly sophisticated cognitive landscapes, paving the way for the gradual enrichment and elaboration of conscious experiences across the evolutionary spectrum.

The human brain stands as a marvel of biological engineering, boasting a staggering ensemble of approximately one hundred billion neurons, each intricately linked to tens of thousands of counterparts via electrochemical synapses. This intricate neural network forms the backbone of our cognitive architecture, orchestrating a symphony of neural activity that underpins an astonishing array of bodily functions, from the most rudimentary physiological processes to the most sophisticated cognitive endeavors, such as artistic creation. In every moment, the brain finds itself immersed in a deluge of sensory stimuli from both the external environment and internal bodily sensations. This influx of sensory input converges with a rich tapestry of stored memories, seamlessly interwoven within the labyrinthine corridors of our neural circuitry. Through this dynamic interplay between incoming sensory data and preexisting memory traces, the brain orchestrates the symphony of consciousness, giving rise to perceptions, thoughts, and subjective experiences that constitute the fabric of our conscious existence.

The brain's unparalleled prowess in swiftly processing and synthesizing information in real time enables us to navigate the complexities of the world around us, deciphering its myriad stimuli, making informed decisions, and weaving together coherent narratives of our lived experiences. Indeed, it is this intricate dance between sensory input and memory consolidation that forms the bedrock of our conscious awareness and affords us a window into the labyrinthine depths of human cognition.

At its core, the brain operates as a central nexus for interpreting the ceaseless influx of sensory data streaming in from the external environment. Through a seamless fusion of this incoming sensory information with recollections drawn from our extensive repository of past experiences, the brain orchestrates a symphony of cognitive processes that underlie our conscious perception of the world. This intricate interplay between sensory input and memory retrieval serves as the cornerstone of our cognitive experience, facilitating the emergence of conscious awareness and imbuing our subjective reality with depth and meaning. As elucidated by (Allen, 2009), the brain emerges not as a static entity but as a dynamic product sculpted by a myriad of contextual forces. These encompass a vast array of influences, spanning the realms of phylogeny, somatics, genetics, ecology, demography, and, ultimately, the intricate tapestry of culture and linguistic dimensions within which it evolved.

The brain bears the indelible imprint of its evolutionary journey, shaped by the ancient processes of phylogeny that have bestowed upon it the foundational structures and functions necessary for survival and adaptation. Concurrently, somatic factors, including physiological processes and bodily experiences, exert a profound influence on the brain's development and function, shaping its neural architecture and cognitive capacities. Genetic determinants further contribute to the intricate mosaic of the brain's composition, encoding the instructions that govern its growth, organization, and functioning. Interacting with the environment, both physical and social, the brain navigates ecological landscapes that leave their mark on its structure and operation, molding its responses and adaptations to diverse ecological challenges. Demographic factors, such as age, gender, and socio-economic status, further modulate the brain's trajectory, shaping its development and function across the lifespan. Finally, the cultural and linguistic milieu in which the brain is immersed exerts a profound influence, shaping neural circuits and cognitive processes in accordance with the norms, values, beliefs, and linguistic practices of the surrounding culture. In essence, the brain emerges as a product intricately interwoven with the fabric of its context, a testament to the profound interplay between biological, environmental, and cultural forces that have shaped its evolution and continue to shape its ongoing development and function.

3.2 Exploring the root of conscious experience

According to Peper (2020), adaptation stands as a cornerstone in the intricate tapestry of life, a pivotal mechanism through which living organisms navigate the dynamic terrain of their environment. Considered indispensable for survival, adaptation embodies the essence of life itself, offering a lifeline amidst the ceaseless flux of environmental fluctuations. It is through adaptation that organisms forge pathways of resilience, fortifying themselves against the vicissitudes of an ever-changing world. In the realm of cognitive activity intertwined with physical engagement, a profound conversion mechanism unfolds, orchestrating the seamless integration of thought and action. Within this intricate framework, priority is bestowed upon automatic processes poised to swiftly execute cognitive mandates. These processes, meticulously selected from a vast reservoir of associations, harbor the capacity to swiftly translate cognitive blueprints into tangible action. Anchored within this rapid database lie primary images, serving as catalysts that ignite these processes into motion, alongside secondary images that vividly depict the unfolding choreography of action. Moreover, this database is imbued with a richness of process parameters, finely tuned to regulate the nuances of cognitive orchestration within diverse situational landscapes. It is within this dynamic interplay between cognitive prowess and physical dexterity that the seeds of effective problem-solving and adaptive prowess find fertile ground to flourish. In essence, this symbiotic dance between cognitive acumen and physical agency epitomizes the essence of adaptation, heralding a harmonious synergy between mind and body in the quest for survival and mastery in an ever-evolving world.

Amidst the turbulence of environmental upheaval, adaptation emerges as the stalwart guardian of equilibrium, poised to confront and conquer the challenges wrought by change. At its core, the essence of adaptation lies in the orchestration of a multifaceted response, one that deftly navigates the intricate interplay between cognitive prowess and physical prowess. When faced with the tumult of environmental disruption, the paramount objective of adaptation is clear: to mobilize and synchronize a repertoire of processes primed to staunch the onslaught of upheaval. This response, intricately woven, entails a symphony of cognitive acumen and physical dexterity, harmoniously united in their endeavor to restore balance. In this intricate dance of adaptation, cognitive processes spring forth as the architects of strategy, meticulously charting pathways to resilience and renewal. Simultaneously, physical actions, imbued with purpose and precision, heed the call of cognition, translating thought into tangible motion. Together, these twin forces of cognition and action form an indomitable alliance, poised to confront and conquer the tempestuous winds of change.

Thus, amidst the crucible of environmental disturbance, adaptation emerges as the beacon of hope, guiding living organisms through the tumultuous seas of uncertainty. Through its intricate interplay of cognitive insight and physical response, adaptation unveils its transformative power, forging a path toward equilibrium in a world ever in flux. Pross and Pascal (2017) expound upon a compelling argument, establishing that chemical systems on the trajectory towards heightened dynamic kinetic stability and the semblance of life necessitate three fundamental properties (TFP). Firstly, these systems must possess the remarkable ability to engage in self-reproduction, enabling the potential transmission of their intrinsic characteristics or information to subsequent generations. This property engenders persistence and the propagation of the system within its environment. Secondly, the structure of these chemical systems must exhibit the capacity for variation. This variability allows for the exploration of diverse possibilities, encompassing mechanisms such as mutation, recombination, or other forms of structural rearrangements. Through structural variation, these systems become adept at manifesting new traits or properties, facilitating their adaptation to the ever-changing circumstances of their existence. Lastly, the maintenance of a far-from-equilibrium state assumes paramount importance. A continuous supply of energy is required to sustain the system's dynamic behavior. This energy input acts as the driving force, propelling the system away from thermodynamic equilibrium and unveiling a tapestry of complex, non-equilibrium behaviors.

In the discourse outlined above, the chemical entity denoted as γ is posited as harboring the potential to engender the emergence of a cognitive apparatus within its molecular confines, contingent upon propitious environmental circumstances. Under the influence of appropriate energy inputs, it is conjectured that γ may undergo a cascade of chemical transformations, culminating in the genesis of intricate configurations endowed with information processing capabilities. Across temporal expanses, these configurations may undergo iterative refinement, progressively attaining heightened levels of complexity, thereby birthing a rudimentary cognitive framework denoted as $f(\gamma)$. Thus, the cognitive architecture encapsulated by the entity $f(\gamma)$ is predicated upon the theoretical framework of self-replication, structural diversification, and sustained non-equilibrium dynamics, collectively denoted as TFP. These foundational attributes furnish $f(\gamma)$ with hallmarks reminiscent of cognitive phenomena, including the transmission of informational content, adaptive responses to environmental perturbations, and the capacity for dynamic modulation in light of external stimuli.

In the context delineated, the chemical entity γ assumes the role of a substrate endowed with the capacity to exert influence on cognitive processes, symbolized by the function $f(\gamma)$. As γ undergoes transformations and evolutionary trajectories, it may be construed as an analog to the brain, serving as the substrate upon which cognitive phenomena manifest. Concurrently, the function $f(\gamma)$, which encapsulates the cognitive capacities emergent from γ, can be likened to the mind, representing the culmination of cognitive activities and experiences imbued within the substrate γ. Moreover, by extrapolating the analogy between the chemical compound γ and its corresponding cognitive mechanism function $f(\gamma)$, we draw a parallel to the intricate relationship between the brain and the mind. Here, the brain assumes the role of γ, serving as the physical substrate housing neural processes and functionalities. Conversely, the mind finds its analog in the cognitive mechanism function $f(\gamma)$, representing the abstract realm of conscious experiences, thoughts, and mental faculties emerging from the neural activities within the brain.

Pascal and Pross (2022) propose a comprehensive framework for understanding the emergence of life, positing that life arises from contingent events within specific environmental contexts. They argue that kinetic forces propel the development of more efficient self-reproducing systems, albeit constrained by the laws of thermodynamics and the properties of covalent bonds, particularly those involving carbon. Central to their argument is the pivotal role of organic chemistry, symbolized by γ, in the process of life's origin. They underscore the significance of kinetic barriers associated with covalent bonds, noting recent experimental evidence demonstrating the complex kinetic behavior of simple organic compounds epitomized by $f(\gamma)$. According to the authors, beginning with the premise of an auto-organizational process predicated on the kinetic properties of self-reproducing entities enables a semi-quantitative evaluation of the environmental conditions conducive to self-organization via organic chemistry. Notably, this assessment aligns with the utilization of visible light as an energy source and moderate temperatures.

According to Peper (2020), transducers are capable of converting environmental information into neural signals. Sensory images represent various aspects of objects or events and are shaped by the input- output relationship of the respective sense. While the term "image" implies a static concept, sensory information is generally dynamic in nature. It has been observed that cognitive activity in animals becomes conscious by being translated into aspects of the external world. However, the cognitive process operates in two distinct modes: as part of physical actions and as mental thought. Despite these different modes, the fundamental nature of the cognitive process remains unchanged. During the subsequent adaptation process, the values of process parameters are adjusted by the adaptive regulator to ensure optimal functioning under the given circumstances. This adaptation occurs in a similar manner to adjusting to a new disturbance, as the adaptive regulator assesses its ability to counteract the disturbance based on the evaluation function.

In the pursuit of a profound comprehension of intricate systems, it becomes imperative to embark upon a deeper exploration of simpler systems, such as artificial intelligences, plants, or cells. The primary objective of this section is to introduce a functional framework that en compasses a diverse range of systems, classifying them into distinct categories such as plants, animals, and intelligent machines. Subsequently, the ensuing discussion elucidates the diverse symbolic elements inherent in a system, which effectively contribute to the generation of the system's output, commonly known as system components. In this segment, we present the individual components of the Mind, denoted by X_i where $1 \leq i \leq 10$ offering a broad overview of their functionalities while deferring in-depth explanations to later sections. Furthermore, we investigate the interrelations among these components and their collective influence on the overall efficacy of a system. Our examination focuses on how input information is comprehended and processed in humans, contrasting it with the processes in animals. While certain components may exhibit similarities in function within specific contexts, a closer inspection reveals their inherent uniqueness. Additionally, these components demonstrate a significant level of interdependency, such that neglecting or excluding any one component can greatly compromise the system's output quality, especially in humans. Nonetheless, it's crucial to acknowledge that not all systems necessitate the activation of every component, and we will explore these diversities in subsequent discussions. Ultimately, it can be posited that all these components represent tangible entities integral to a system. In our

philosophical exploration, we delineate the various components comprising the intricate landscape of the Mind:

X1: Sensation set - Signifying the reactivity of molecular reactions triggered by sensory input.

X2: Primary consciousness set - Entailing the initial translation and processing of incoming data within the Mind.

X3: Awareness set - Encompassing the faculties of knowing, perceiv- ing, and being cognizant of external events or stimuli.

X4: Analyzing set - Involving the scrutiny and interpretation of data within the Mind's domain.

X5: Memory set - Emblematic of the storage and retrieval mecha- nisms for information and past experiences.

X6: Character mentality and mood set - Encompassing emotions, moods, and character traits that shape the state of the Mind.

X7: System components coordinator set - Serving as the central hub facilitating communication and coordination among diverse com- ponents.

X8: Willpower and determination set - Reflecting the resolve and motivation to achieve desired outcomes.

X9: Curiosity and perception set - Embodied in a profound sense of curiosity and exploration, devoid of immediate analysis.

X10: Additional physiological and environmental conditions set -Encompassing molecular, physiological, chemical, and physical factors that influence the Mind's dynamics.

The components outlined above have emerged through the evolutionary trajectory of the γ system. The proposed topology for the mind seeks to delineate a coherent arrangement of system components (Xi, where $1 \leq i \leq 10$) that mirror the functionality of a human-like system. However, it is crucial to recognize that simpler entities, such as artificial intelligence, plants, or insects, may not exhibit the full spectrum of these components. These components, likened to γ arms, have gradually unfolded over an extensive period. Their formation results from internal chemical and physical transformations occurring within the γ system, alongside the influence of external environmental factors. Consider the presence of a set of sensitivities within the domain of the γ system, denoted as X1. Over time, the activities orchestrated by X1 give rise to a subsequent layer of sensitivities within the intricate tapestry of the γ system. These emergent sensitivities, collectively labeled as X2, showcase a discernible responsiveness to the composition and dynamics of elements within X1. Each constituent of X2 displays a unique sensitivity to either individual elements or composite configurations within X1, thus offering a diverse array of sensitivities. The inception of X2 primarily stems from the inherent molecular sensitivities imbued within the essence of γ. These sensitivities, spanning both chemical and physical realms, interact and respond to fluctuations in the states of X1. Importantly, X1, besides its receptivity to external stimuli, also exhibits a reciprocal responsiveness to internal processes, including those orchestrated by X2, thus establishing a cyclical interplay. This iterative process sets the stage for the continual augmentation of sensitivities displayed by both X1 and X2, ultimately fostering their refinement and evolution.

In the ongoing evolution of γ, a new generation of sensitizers emerges, attuned to the performance and fluctuations of X2. These sensitizers, exemplified by a category denoted as X3, manifest as molecular, chemical, and physical sensitivities intrinsic to γ. The constituents of X3 display functional reactivity contingent upon the dynamics of X2 elements. Notably, within the evolutionary trajectory of γ, additional components such as X4, X5, and beyond may emerge concurrently as subsequent sensors within γ. Consequently, the system components encompassing sets X1 through X10 acquire a distinct sensitivity to their respective elements, refining over time. As this evolutionary journey unfolds, a nuanced correspondence develops between the system com ponents. For instance, conceptualizing γ as analogous to the brain, distinct frequencies of light received by X1 elicit varied and corresponding sensitivities in X2, yielding the diverse spectrum of colors perceived or experienced.

Let's consider a scenario where the system γ exhibits a set of sensitivities, represented by X1, to its environment. Over time, the activities of X1 engender secondary sensitivities within the system, termed as X2, which are sensitive to the configurations of elements in X1. The constituents of X2 display varying levels of sensitivity to individual elements or groupings of elements in X1, implying that each element in X2 expresses a distinct sensitivity to an element or grouping of elements in X1. The emergence of X2 primarily stems from the molecular sensitivities inherent in the system γ, which undergo chemical and physical reactions in response to alterations in the states of X1. Notably, besides being responsive to the external environment, X1 also reacts to internal processes, including those initiated by X2. This cyclic process perpetuates in a regular fashion, establishing a feedback loop between X1 and X2. As this process persists, both X1 and X2 components an enhancement in their sensitivities, leading to their improvement. The continued interaction and refinement between these sets of sensitivities contribute to the system's ability to adapt and respond more effectively to its environment. I can show the process (3,1) as below,

$$\alpha \Rightarrow X1(\alpha) \Rightarrow X2(X1(\alpha)), \qquad (3.1)$$

where α is a message received from environment. As the ongoing process unfolds, a subsequent generation of sensitizers arises within the system that are specifically attuned to the performance and alterations of X2. This new category of sensitivities is represented by X3. It is crucial to emphasize that all of these sensitivities, including those in X1 and X2, are rooted in molecular, chemical, and physical interactions occurring within the system γ. The sensitivities represented by X3 respond to the dynamics and changes within X2, which, in turn, are influenced by the activities of X1. These molecular-level sensitivities enable the system to perceive and react to the performance and modifications occurring in the previous generations of sensitivities. By incorporating this multi-layered framework of sensitivities, the system γ can exhibit a hierarchical structure that facilitates its ability to adapt, learn, and respond to its environment in a nuanced and sophisticated manner. The molecular, chemical, and physical nature of these sen sitivities underscores the fundamental basis upon which the system's information processing and behavior are built. The elements of X3 exhibit functional reactivity that depends on the changes of X2 elements. Indeed, as the evolution of the system γ progresses, additional components such as X3, X4, X5, and so on, can emerge in parallel as sub- sequent sensors within γ.

These components contribute to the expanding complexity of the system and its ability to sense and interact with its environment. The system components, including the sets X1, X2, X3, X4, X5, and so forth, develop distinct sensitivities to their constituent elements, which become more refined over time. This refinement is a result of the ongoing interactions and feedback loops be- tween the different components of the system. As the process unfolds, a direct correspondence emerges between the system components and their specific sensitivities. To elucidate this, let's employ the analogy of γ representing the brain. Initially, the set of sensitivities X1 could analogously represent the brain's sensory inputs, such as the reception of various light frequencies. These inputs then trigger corresponding sensitivities in X2, which we perceive as distinct colors or experiences. This establishment of correspondence between the system's components allows it to interpret and contextualize the information received from the environment. It underscores the intricate interplay and interconnectedness among the diverse sensitivities and components within γ, facilitating a nuanced and comprehensive perception of the surroundings. At this stage, the chemical composition γ may appear rudimentary, thus we refer to it as a "simple system." The array of sensors responsible for the system's components (Xi, where $1 \leq i \leq 10$) is collectively denoted as "advanced sensors of all generations" (ASAG), or simply as "sensors" when clarity is maintained. It is essential to recognize that these sensitivities evolve incrementally, influenced by both external environmental factors and internal chemical and physical reactions within the system.

At the core of the experience of consciousness lies the intricate functioning of the advanced sensors of all generations (ASAG). These sensors serve as the fundamental mechanism through which a system interacts with its environment, enabling it to establish a correspondence between its experiences and the dynamic changes occurring in nature. Crucially, the experience of a system is intricately tied to the surround ing changes and the behavior of its sensors. It is imperative to assess the reality of a system's experience within its unique context, recognizing that the perception of reality can vary among different systems due to their diverse array of sensors and components. For instance, the perceptual limitations of most animals and insects prevent them from comprehending phenomena such as the roundness of the Earth or its orbit around the Sun, reflecting the constraints imposed by their sensorial capacities. Similarly, humans encounter analogous limitations in their understanding of certain phenomena. Consider our experience of light frequencies, which manifests as the perception of distinct colors. This phenomenon directly stems from the reactions of sensors within components like X1 and X2. Alterations in the functioning of these sensors would consequently reshape our perception of light. In essence, the interface between a system and its environment hinges on sensory mechanisms. The system's experiences are shaped by the interplay between surrounding changes and the behaviors of its sensors. Evaluating the perception of reality within the context of each system underscores the diversity of interpretations and understandings of the world. Ultimately, our experiences of phenomena, including light frequencies, are intricately intertwined with the reactions of specific sensors within the system.

The components comprising a system can be conceptualized as its "arms" whose development and extent directly influence the specificity and complexity of states within the central γ core. This dynamic interplay entails a reciprocal relationship between the expansion of system components and the proliferation of γ modes. Interactions among the message and components, as well as among the components themselves and with the γ modes, are governed by specific mechanisms intrinsic to each system. These mechanisms are shaped by chemical processes, environmental physics, and the inherent potential of the system. While the precise nature of these mechanisms may vary depending on the specific system under consideration, they generally embody the interplay between the physical and chemical properties of the system's components, external forces acting upon it, and the emergent properties of the system as a whole.

Pascal and Pross (2022) and various researchers have demonstrated that even the simplest life forms possess the ability to sense their internal conditions, coordinate with neighboring organisms, and activate complex response systems in response to ongoing challenges. This suggests that life's mental capacity is evident even at the most basic level of life. The process of system formation is influenced by environmental factors, the chemical composition within the system, and the interplay between these factors over a prolonged period. If indeed life's mental character is inherent in all life, including the simplest life forms, this has significant implications for the origins of that mental character. It would imply that the evolution of cognition did not commence with the earliest life, but would have existed in some earlier prebiotic chemical system. In other words, cognition would have originated in chemistry. However, if cognition was associated with the simplest life forms, as is now widely accepted, evolutionary reasoning strongly suggests that cognition, at least in its rudimentary form, would have been established in the pre-life chemical realm. The evolution of a system, determined by its chemical and physical state and its interaction with both its internal and external environment, is initiated by the sensitivities of the elements of the set X1. According to Shapiro (2007 & 2021), all living cells possess the ability to sense and respond to changes in their external or internal environment. This cognitive capacity is essential for cells to acquire the necessary nutrients for growth, survive inevitable ecological changes, and correct errors in the complex processes of reproduction. Without this capacity, cells would not be able to maintain homeostasis or adapt to changing circumstances, which are crucial for their survival. Wherever examined, even the smallest living cells (prokaryotes) display sophisticated regulatory networks establishing appropriate adaptations to stress conditions that maximize the probability of survival. Therefore cells are able to perceive changing features of their internal and external environment and undertake responses directed to survival, growth, and reproduction of themselves or their clonal relatives.

In the evolution of the cognitive mechanism, there is no clear demarcation point that separates the transition from non-living to living organisms (Azar, 2022) or from a state without consciousness to a state with consciousness. Instead, it is generally considered to be a gradual and continuous process. The evolution of consciousness is indeed thought to have been a gradual process that occurred over a long period of time. While there is still much debate and ongoing re- search in the field of consciousness studies, the general consensus among scientists and philosophers is that consciousness emerged through a series of evolutionary steps. The origins of consciousness can be traced back to the simplest forms of life, which possess basic sensory and reactive capacities. These organisms are able to sense their environment and respond to stimuli in a way that promotes their survival and reproduction. However, their experiences are likely limited to basic sensations and immediate reactions. As life forms became more complex through evolution, their nervous systems and cognitive abilities also became more sophisticated. The development of more advanced sensory organs, such as eyes and ears, allowed for a richer perception of the environment. Over time, organisms evolved neural networks and structures that enabled more complex information processing and decision-making. The emergence of consciousness is thought to be associated with the development of self-awareness and subjective experiences. This transition might have been driven by the increasing complexity of neural networks and the integration of sensory information with memory, attention, and other cognitive functions. As organisms became capable of representing and manipulating mental states, consciousness likely began to arise.

The fundamental elements underlying sensory experiences are qualia, which denote qualitative sensations or sense data. Qualia represent the smallest units of phenomenal experience and serve as the building blocks for the mind's representation of the external world. The fidelity of these representations determines their alignment with the objective reality, thus constituting veridical perceptions. These states derive their syntactic properties from their instantiation within the brain. In essence, qualia encompass the subjective aspects of sensory experiences, encapsulating the immediate, raw qualities of perception such as the redness of an apple, the sweetness of sugar, or the warmth of sunlight on one's skin. Highly personal and subjective, qualia are in- dividually experienced and cannot be directly shared or communicated with others. They form the foundational elements of our conscious experiences. In every scientific discipline, a consistent set of foundational axioms and methods of reasoning is imperative to address the field's questions and challenges. If we regard qualia as the foundational axioms for conscious experiences, their definition necessitates additional fundamental axioms to uphold consistency within the system. When examining qualia, we rely on the conscious experiences they engender, which, in turn, are derived from qualia themselves. Consequently, certain inquiries concerning consciousness such as defining the experiential aspect within philosophical frameworks become intricate to resolve in isolation. It becomes imperative to integrate insights from diverse scientific domains, including biology, mathematics, physics, and chem istry.

The mind relies on both qualia and sense data as inputs to construct a comprehensive representation of the external world. This intricate representation entails amalgamating diverse sensory inputs with stored memories, cognitive processes, and prior knowledge. Factors such as attention, perception biases, and individual cognitive mechanisms play pivotal roles in shaping the mind's interpretation and construction of these representations. Veridical perceptions are those that accurately reflect the external reality, aligning with the true state of the environment. These perceptions are invaluable as they facilitate efficient navigation and interaction with the world. However, our perceptions are susceptible to distortions caused by illusions, biases, and cognitive constraints, leading to deviations from veridicality. The realization of sensory experiences and the construction of representations take place within the brain. The brain processes incoming sensory information, merges it with existing knowledge and memories, and generates subjective experiences. The syntactic properties of these experiences refer to the structural and functional attributes of the neural processes under- lying sensory perception, which are intricately shaped by the brain's architecture and functioning.

3.3 Extracting logical and conceptual phenomena from experience realms

One key motivation for adopting a practice-based approach in the philosophy of logic is the recognition that many of the perceived limitations and deficiencies identified in traditional discussions of the philosophies of science and mathematics are also present in the philosophy of logic. Just as in the philosophies of science and mathematics, the philosophy of logic has grappled with various challenges, such as a disconnect between theoretical accounts and practical applications, as well as a lack of attention to the actual activities and methodologies employed by logicians. These shortcomings can hinder a comprehensive understanding of logic and lead to a misalignment between theoretical perspectives and the realities of logical research. By adopting a practice- based approach, we can address these perceived shortcomings and gain valuable insights into the nature of logic. This approach allows us to closely examine the actual practices, methodologies, and epistemological considerations employed by logicians, providing a more accurate and nuanced understanding of the field. It enables us to bridge the gap between theory and practice, leading to a more fruitful exploration of the philosophy of logic.

Frequently, discussions about the nature of logic tend to be disconnected from the actual realities of logical research. This disconnect arises from expectations about the subject matter, methodology, and epistemology of logic, which are often influenced by longstanding philosophical assumptions about the properties of logic, the standards of rationality, and acceptable sources of evidence. Consequently, the por trayal of logic that emerges from these discussions often conflicts with the actual practice of logicians. In other words, there is a disparity between the theoretical understanding of logic and the practical application of logic by those who actively engage in logical research. The theoretical accounts of logic often fail to capture the nuances and complexities of logic as it is practiced by logicians in their day-to-day work. This misalignment can hinder a comprehensive and accurate under- standing of the field, leading to misconceptions and misunderstandings about the nature of logic.

Living organisms are formed through an ongoing process of chemical and physical interactions involving specific chemical compounds. These compounds have evolved within cognitive systems, which possess distinct characteristics within the system of living organisms. This information is supported by the article (Azar, 2022) and its associated sources. Cognitive systems undergo a transformative process, transitioning between chemical and biological states, encompassing both non- living and living entities. These systems consist of a fusion of chemical sensors, ASAG (Azar, 2024), which emerge through the interplay of assessing the chemical composition of the external environment and internal chemical and physical processes. As a chemical compound evolves into a living organism, the cognitive mechanism responsible for this transformation is further amplified and refined. According to (Pamela et al., 2021) basal cognition refers to the essential processes and mechanisms that enabled organisms to monitor specific environ- mental conditions and respond adaptively to ensure their survival (e.g., finding food, avoiding danger) and reproductive success long before the emergence of complex nervous systems, let alone central nervous systems. Basal cognition implies an inherent level of implicit familiarity or comprehension of the connections between environmental states. In the pursuit of enhanced thermodynamic stability, which forms the foundation for all physical and chemical processes, one of the primary avenues is through the well-established principles of thermodynamics. Azar (2022) posits that distinguishing between living and non-living organisms based on their characteristics is not feasible. The transition from a non-living chemical compound to a living entity is a continuous process without a clear demarcation point. In their manuscript (Pascal & Pross, 2023), the authors propose that perception arises from the dynamic interplay between the replicative system known as the Dy namic Kinetic Stability (DKS) system and its supportive environment. The DKS system is considered a kinetic phenomenon associated with the self-organization of life, driven by the power of replication. Pascal and Pross argue that the DKS system, through kinetic selection, ”learns” which variations are advantageous and which are not. This capacity for replication allows the system to both remember and learn, indicating a mental dimension. Consequently, the concept of DKS pro- vides a framework for understanding the physico-chemical basis of the mental aspects of life.

The regularity manifested within a system can be comprehended as a correspondence or equivalency between the internal processes intrinsic to the system and the performance exhibited by its encompassing environment. Given that the genesis and operation of a system are subject to the influence of the chemical and physical properties characterizing its environment, a correlation emerges between the activities and mobility of the system itself and the activities transpiring within the ambient milieu. Put simply, when an individual discerns what may appear as intelligent deliberation or purposeful reasoning in their immediate surroundings, it ensues as a consequence of the system’s internal adaptation to the physical and chemical functions inherent to the environment. The correspondence between the system and its chemical and physical environment consequently engenders the perception of orderly regularity within our environment, which may inadvertently foster the supposition of intentional planning. To expound upon this matter with greater precision, the intelligent mechanisms observed in natural phenomena are indeed manifestations of the system’s correspondence with its surrounding environment. They do not serve as indications of deliberate planning or external intelligence. Rather, they arise from the intricate interplay between the system and its environment, whereby the system’s behavior and adaptive qualities emerge from its inherent properties and the influences exerted by the encompassing physical and chemical factors.

The genesis of a system is intricately tied to the intricate web of chemical and physical interactions unfolding within its surrounding environment. This mode of emergence engenders a profound correspondence between the system and its environment, setting the stage for the system’s perception and conceptualization of regularity, which may present itself as exhibiting intelligent reasoning. However, it is essential to recognize that the true elucidation lies in the inherent correspondence or equivalence characterizing the system and its environment. To illustrate this idea, let us consider a hypothetical scenario wherein we construct an intelligent machine endowed with the capacity to assess human behavior. As this machine observes and analyzes our actions, it discerns a discernible regularity and logical progression, seemingly evoking intelligent deliberation. Yet, this apparent intelligence arises from the approximate correspondence or equivalence established between our behavior and the internal workings of the machine itself. This correspondence is established during the construction and design of the machine, grounding its perception of regularity and intelligent thought. Consequently, as the system interacts with its environment over time, undergoing a series of physical and chemical reactions, an equivalence relationship emerges between the functioning of the system and the intricate dynamics of its surrounding milieu. It is within this relationship of correspondence that the system's perception of regularity is shaped and the semblance of intelligent thought may manifest. In essence, the interplay of physical and chemical processes transpiring in the system's environment engenders a profound equivalence with the system's functioning. This resulting correspondence not only shapes the system's perception of regularity but also gives rise to the appearance of intelligent thought, offering insights into the intricate relationship between a system and its environment.

The order, regularity, and logical patterns that a system perceives in its surrounding environment are a result of the equivalence relationship between the system and its environment. This implies that there is no inherent regularity or logic in nature itself, and the perceived regularity by a system is a product of this equivalence. The foundation of this equivalence relationship lies in the way systems are created. As explained earlier, the sensitivities of a system are based on the physical and chemical behaviors of its environment. Changes in the environment can trigger responses in the system, making it sensitive to those changes. Some systems have sensors that can record these changes in their memory, allowing them to compare and recognize similar changes when detected by their sensors. In essence, the system's sensitivity to its environment and its ability to record and compare changes con- tribute to the perception of order, regularity, and logical conclusions within the system. This perception arises from the equivalence established between the system and its surrounding environment.

In our daily lives, the logic we use serves as a cognitive tool that pri oritizes coherence and minimizes contradictions. Initially, we learn this logic by observing nature, and then we refine and develop it through conscious experiential processes. It is important to note that our focus is not on delving into the complexities of mathematical or philosophical logic, but rather on understanding how humans construct logical frameworks for themselves.

As previously discussed, the dynamic kinetic stability and lifelike at- tributes hinge on three foundational properties denoted as TFP. The expression of these characteristic TFP traits in living entities, ranging from unicellular organisms to complex human beings, is intricately linked to the operation of advanced sensors of all generations (ASAG). The evolutionary trajectory of sensors has thus exerted a profound influence on the refinement of TFP, thereby amplifying the functionalities of sensors inherent within encountered systems. Consequently, the processes unfolding within these systems emerge as a direct con- sequence of the intricate interplay of chemical and physical dynamics entailed in the genesis and maturation of TFP.

The integration of system consciousness imbues this logical process with depth and efficacy, harmonizing its operations with the augmentation and refinement of TFP. As conscious experience unfolds and evolves within the system, it engenders another layer of logical progres sion, stemming from the system's accumulated knowledge and experiences. Consequently, the logical behaviors exhibited by rudimentary life forms devoid of animal consciousness are delineated as pseudo- logical, as they are confined to the sustenance and propagation of TFP without the enrichment and intricacy afforded by conscious awareness. The advancement of the system's logical process occurs concurrently with the development of the system's conscious experience. As sensors undergo upgrading or the system evolves along the path of TFP evo lution, other sensors such as intelligence, talent, emotion, and a sense of responsibility are created. The existing logic within the system is a consequence of the evolutionary process of the sensors (ASAG) present in the system. This logic functions to uphold and progress TFP. We denote this quasi-logical behavior as LTFP.

The establishment of this logic is a common outcome across various living organisms, arising from the interplay between their internal system and the behavior of their surrounding environment. In this context, ”correspondence” refers to the chemical and physical reactions occurring within the system, which are directly influenced by the behavior of the surrounding environment. In essence, the system's activity is a function of the behavior exhibited by its environment. Put differently, the chemical and physical changes taking place within the systems have established a correspondence with their surroundings, serving to maintain and stabilize the state of TFP, according to the paper of Pross (2021). Consequently, this has contributed to the emergence of a molecular and chemical-physical logic (or quasi-logic) within the systems, driven by various natural forces. Indeed, the in- teraction of forces and the establishment of a unique state on Earth and in the solar system have played a role in initiating chemical and physical processes within the system, ultimately leading to the creation of LTFP within the system.

The development of human conscious experience is facilitated by the emergence and activation of new sensors within the system (Azar, 2024). As the process of complete system consciousness unfolds, it gives rise to pseudo-logical behavior (LTFP), which can lead to illusions, heightened skills, and other abilities in individuals. For instance, phenomena such as love, falling in love, or experiencing pleasure from food can be attributed to the development of the LTFP mechanism. However, the development of new sensors can also give rise to illusions in humans and certain animals, sometimes leading to challenges in their relationship with LTFP. Examples of these challenges include instances of humans engaging in harmful actions like killing children or self-starvation due to delusional beliefs, as well as cases of animals exhibiting self-destructive behaviors. These actions can be attributed to the activity of newly developed sensors. Throughout history, the occurrence of illusions in humans has increased, and this can be directly linked to the expansion of human consciousness potential specifically, the birth of new sensors as part of the ASAG system. In this con- text, an illusion refers to an emotional response to an event or internal thoughts and feelings that are largely unrelated to the event itself or our true desires. For instance, when a person encounters an internal or external event, they may attribute an emotional cause to it that is not the primary cause of the event. Furthermore, they may propose a solution to address this emotional cause that is completely unrelated to the actual event.

The creation of new sensors within the human system leads to the formation of additional mental images. These new images in the mind are a consequence of upgrading the system's sensors (ASAG), or more broadly, upgrading the system's components. This process has resulted in an improvement in the human consciousness system. As mentioned earlier, the evolution of conscious experience in humans has given rise to certain illusions, many of which contradict LTFP. These illusions arise due to the development of our sensors, or in other words, the development of our conscious experience, causing us to act beyond the bounds of LTFP. The primary cause of these illusions can be attributed to the tendency of sensors to create illusions when receiving messages. These messages can take the form of fears related to events or internal aspects, dreams experienced during sleep or wakefulness, or specific feelings generated within the system by the sensors. At this stage, the human consciousness system continually produces illusions, and individuals live their lives based on these illusions. In some cases, individuals seek to enhance the status of TFP, and this enhancement is often based on skills and illusions. Unfortunately, as previously men tioned, negative outcomes can arise from this pursuit. However, it is important to note that during this stage, not only are illusions created, but human skills and abilities also grow. In this context, illusions refer to instances where a person attributes a reason or explanation to an experience that has little or no connection to the actual cause of that experience. The main cause of these illusions in humans at this stage is often due to the weaknesses of the system's components, particularly the weakness of the X4 component. In some cases, illusions are passed down to new generations by their predecessors, and intriguingly, these individuals may possess illusions that are not effectively scrutinized by the X4 and other components. It is worth noting that while problems or deficiencies in system components or illusion training can contribute to the creation of illusions, our discussion here focuses on the natural and normal conditions that give rise to illusions.

The development of human consciousness is intricately linked to the expansion of social life, which, in turn, gives rise to the emergence of skills and the evolution of components within the human system. These developments contribute to the advancement of consciousness. Over time, a specific stage of sensor development occurs that is unique to humans. Consequently, in conjunction with the development of skills and empirical knowledge, the analysis component X4 undergoes development and begins to analyze illusions. This process of analysis and skill improvement has led to the establishment of a logical framework that seeks to identify the exact causes behind various phenomena. At this stage, the acquisition of logical reasoning by humans hinges on understanding the behaviors of nature and the relationships between different forces and laws of nature, both in relation to each other and to humans. The enhancement of our sensors or system components enables us to identify the precise cause of most events. By repeatedly experiencing and observing these events, we come to grasp the true cause-and-effect relationships that govern them.

Indeed, the logic that humans develop for themselves is shaped by a careful examination of nature's behavior and their own experiences. The advancement of sensors and awareness, often referred to as ASAG promotion, plays a crucial role in facilitating this process.

Our logic is profoundly shaped by two main factors: the influence of natural forces and the role of conscious experience.

Firstly, natural forces, encompassing physical laws, environmental conditions, and biological imperatives, exert a significant influence on our logical reasoning. These forces dictate the constraints within which our cognition operates, shaping the patterns of thought and decision- making processes. For instance, the principles of cause and effect, entropy, and thermodynamics guide our understanding of the world,

influencing how we perceive and interpret events. Additionally, environmental factors such as cultural norms, social structures, and educational systems contribute to the formation of our logical frameworks.
Secondly, conscious experience plays a crucial role in shaping our logic. Our subjective experiences, emotions, beliefs, and intentions profoundly influence the way we reason and make decisions. Conscious awareness enables us to reflect on our thoughts, evaluate information, and form judgments based on personal values and experiences. Moreover, the interplay between conscious and unconscious mental processes, including intuition, creativity, and cognitive biases, further shapes our logical thinking.
Together, the influence of natural forces and the role of conscious experience interact to shape our logical reasoning, guiding our understanding of the world and influencing our behavior and decision-making processes. Understanding these factors is essential for comprehending the complexities of human cognition and advancing our knowledge of logic and reasoning. By engaging with these two fundamental influences, humans develop a logic that is informed by the forces of nature and the depth of conscious experience. This intertwined relationship between external observations and internal reflections allows for the continuous refinement and evolution of human logic.

Conclusion

Recognizing and understanding cognitive distortions within these systems is crucial for improving mental processes. Cognitive distortions, are systematic patterns of deviation from norm or rationality in judgment. These distortions can lead to perceptual inaccuracies, faulty reasoning, and biased decision-making, impacting an individual's overall understanding and interaction with the world. Cognitive-behavioral therapy (CBT) often addresses these cognitive errors as part of its therapeutic approach. CBT is a structured, time-limited psychotherapy that aims to change patterns of thinking or behavior that are causing people's problems, thereby changing the way they feel. It involves identifying and challenging distorted cognitions, and replacing them with more realistic and balanced thoughts.
The structure of human thought and perception is intricately linked to its constituent components, which collectively contribute to a diverse range of perceptions. Our behaviors and our understanding of the environment are significantly influenced by the functioning of these system components. Consciousness, in my viewpoint, can be seen as the initial term that either enters the system through sensory input or is generated by the system's internal components. This initial translation forms the bedrock of our comprehension of the environment, and the efficacy of the system's components relies on the quality of this initial translation. The performance of consciousness is contingent upon the capabilities of the system's sensors to receive and transmit information to conscious awareness. By closely examining simpler systems such as plants, insects, or even artificial intelligence, we can glean insights into the workings of more complex systems like the human system. Through a thorough examination of how systems function, we can approach philosophical inquiries concerning the human mind and our understanding of the world with greater precision. he investigation into Dynamic Kinetic Stability (DKS) and its implications for conscious experience sheds light on the intricate relationship between material dynamics and cognitive processes within the mind. The evolution and promotion of DKS facilitate dynamic transformations within the cognitive system, contributing to the emergence of consciousness. DKS plays a crucial role in shaping sensory processing, attentional focus, cognitive integration, and dynamic interactions with the environment, thereby creating the rich and complex landscape of conscious awareness.
The investigation into Dynamic Kinetic Stability (DKS) and its implications for conscious experience sheds light on the intricate relationship between material dynamics and cognitive processes within the mind. Through the evolution and promotion of DKS, the cognitive system undergoes dynamic transformations contributing to the emergence of consciousness. DKS influences sensory processing, attentional focus, cognitive integration, and dynamic interaction with the environment, shaping the rich and complex landscape of conscious awareness. The creation of new sensors within the human system leads to the formation of additional mental images. These new images in the mind are a consequence of upgrading the system's sensors (ASAG), or more broadly, upgrading the system's components. This process has resulted in an improvement in the human consciousness system. As mentioned earlier, the evolution of conscious experience in humans has given rise to certain illusions, many of which contradict LTFP. These illusions arise due to the development of our sensors, or in other words, the development of our conscious experience, causing us to act beyond the bounds of LTFP. The primary cause of these illusions can be attributed to the tendency of sensors to create illusions when receiving messages. These messages can take the form of fears related to events or internal aspects, dreams experienced during sleep or wakefulness, or specific feelings generated within the system by the sensors. At this stage, the human consciousness system continually produces illusions, and individuals live their lives based on these illusions. In some cases, individuals seek to enhance the status of TFP, and this enhancement is often based on skills and illusions. The development of human consciousness is intricately linked to the expansion of

social life, which, in turn, gives rise to the emergence of skills and the evolution of components within the human system. These developments contribute to the advancement of consciousness.
Conscious experience plays a crucial role in refining and expanding our logical faculties. Through sensory input, personal interactions, and accumulated knowledge, conscious experience continuously shapes and adapts our cognitive processes. The subjective nature of conscious experience allows for a diverse range of perspectives and interpretations, enriching our logical reasoning with creativity, empathy, and personal insight. This dynamic interplay between the biological foundations of our brain and the continuous stream of conscious experiences ensures that our logic is not static but evolves with new information and experiences. Consequently, our ability to understand and navigate the world is enhanced. By understanding the balance between natural forces and conscious experience, we can gain deeper insights into the complexities of human cognition and the development of logical reasoning.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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