

Consciousness: an emergent property of the brain or a fundamental property of the missing evolved atom?

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Abstract. Consciousness, a perplexing scientific mystery acknowledged since ancient times in both Eastern and Western cultures, continues to elude modern science. We are all familiar with the subjective experience of consciousness but where does it originate? What creates consciousness? The prevailing assumption in modern neuroscience is that every aspect of consciousness emerges entirely from neural interactions within the brain. This materialistic worldview that consciousness is an emergent property of the brain is inadequate in explaining the subjective experience of consciousness. The reason and process behind this phenomenon remain poorly understood. If consciousness is more than the complex neural interactions, we need to explore new ways of thinking. This study endeavours to address the enigma of consciousness—its origin—by integrating insights from Madhyasth Darshan (MD) to bridge the gap in our current understanding of reality. Lastly, the author concludes that MD's view on Consciousness that it is a fundamental property of a constitutionally complete evolved atom which is yet to be discovered experimentally is more promising as it may solves the conundrum “what is or what creates consciousness” and also explains some of the mysterious phenomena of consciousness.

Keywords: Consciousness, Self, Reality

1 Introduction

The age-old question “What is consciousness?” has perplexed philosophers and scientists throughout history, in both Eastern and Western cultures. However, the question has taken on a renewed urgency in the current era of artificial intelligence, as scientists ponder whether machines can attain consciousness [1-2]. Chalmers compellingly illustrates how the most widely accepted contemporary cognitive science and neurobiology have fallen short in explaining the emergence of mental events from physiological processes in the brain and challenges the dominant reductionist approach in science [3]. Chalmers coined the term “the hard problem” to describe the difficulties in elucidating the origins of subjectivity from the reductive

materialism point of view and asserts that an extra ingredient is required in the explanation to account for conscious experience [4].

In this work, we have looked for that extra ingredient by not limiting ourselves to only western work & approach but also to the vast Indian perspective and literature. As the non-materialists argue that consciousness might belong to a distinct ontological category, possibly linked to a yet-unknown dimension of reality, it is shown in this work that indeed this can be one of the most important missing links in the consciousness studies - the presence of “conscious atoms” which entails the feature of consciousness as proposed in the Madhyasth Darshan. As once the ontology of physics also had to be expanded to explain electromagnetism. And new fundamental properties and laws were required to provide a satisfactory explanation of the phenomena. Also, the ontological assumptions and mathematical equations proposed by Hodgkin and Huxley led to the discovery and explanation of neuronal Ion gates/channels and neuronal action potential generation and propagation [5]. Similarly, a “conscious atom” is a newly proposed entity to our ontology as suggested by A. Nagraj in Madhyasth Darshan, which may resolve the hard problem of consciousness, considering the experience as a fundamental feature of this conscious unit in this model. This also has the potential to explain various unexplained mysteries such as rebirth, immortality, and the existence of consciousness without a brain. Since consciousness is an ambiguous term referring to many different phenomena, in this work, we limit ourselves to the use of the word consciousness to the subjective or phenomenological experience.

2 The extra ingredient: presence of “conscious atoms”

As emphasised above the truly difficult problem of consciousness lies in the subjective aspect of experience that accompanies thought, emotions and perception. This subjective experience includes things like the vividness of any colour, the feeling of experiencing an emotion, or the nature of entertaining a mental image, volition or will. The challenge is to explain why these experiences exist; why, when our cognitive systems process visual and auditory information, we have corresponding visual and auditory experiences. As Nagel famously stated, there is something it is like to be a conscious organism [6]. So, the question arises then what is that something it is like to be that conscious organism? An extensive literature survey of vast Indian knowledge along with the Western literature was done to find the answer along this line of thought. Most of the ideas we favor have been suggested before, however, hasn’t been introduced and discussed in the mainstream scientific community to date. The combination of previously suggested ideas in terms of modern scientific understanding is what makes these proposals unique. We summarise in the following sections some of these previously articulated insights and promising hypothesis related to consciousness.

Ramanujacharya, founder of Vishishtadvaita describes human beings as an individual self which is an atom (*anu*) [7]. But no detailed structure of this self/atom is being discussed. Later, Sadafal deo in Swarved also mentioned the *Jeevatama* (self) as an atom and went further by describing the self atom (*aṇu*) with 60 subtlest (sub-atomic) particles (*paramāṇu*) [8]. But he didn’t give any further details about the

structure of the self-atom (*āṇu*). However, one of the most recent Indian Darshans “*Madhyasth Darshan*” by A. Nagraj proposed a detailed picture of self as an evolved atom with its structure - including the number of orbits, sub-particles; its properties; interactions and origin. He proposes that all conscious organisms have a constitutionally complete conscious (ccc) atom or self [9]. The structure of ccc-atom, as proposed by A.Nagraj in *Madhyasth Darshan*, is shown in the following Figure 1 with its 10 inseparable activities which will be discussed in detail in our later works “Nature and activities of consciousness in completeness”.

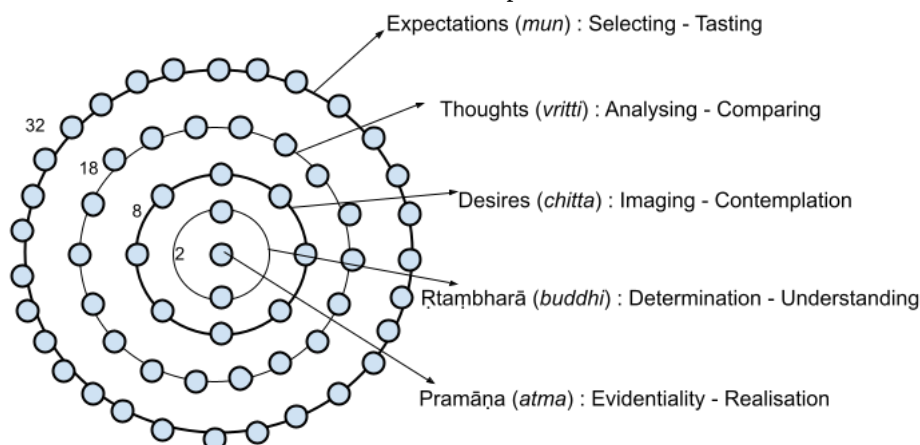


Fig. 1. Structure of a constitutionally complete atom (Jeevan/Self/conscious unit) as proposed by A.Nagraj in *Madhyasth Darshan* along with its 10 inseparable activities

The constituents of ccc-atoms are similar to the material atoms - having 1 nucleus and 4 orbits with 2,8,18 and 32 particles in consecutive orbits, 60 particles in total probably due to the most stable structure following the $2n^2$ rule with the only difference is that there is no longer any change in structural form in these ccc-atom. However, the properties of ccc-atoms are completely different from the material's atom as shown in following table 1. The ccc atoms are the evolved noblest of the noble atoms in the sense that their constituents are complete, fixed and stable, as they exist as singular atoms alone and no longer participate in bonding with other atoms by either donating or accepting any subatomic particles, like the material atoms whose constituents keep on changing depending on the environment and conditions. In other words, the ccc-atom adopts the idea of non-interacting nobility from the atomic structure of noble gases. Further, the ccc-atom undergoes qualitative changes as it evolves, i.e. an increase in vibrational motion without changes to its constituent parts [10]. Material atoms, conversely, go through the quantitative changes as well, such as the transformation from the physical world to the chemical world. We are well aware that (material) atoms are the individual building blocks of all elements, compounds, cells, tissues etc. Similarly, the theory constructs these ccc-atoms are the fundamental unit of the conscious world, which is yet to be discovered experimentally and exist as singular atom in every conscious organism. So, according to A.Nagraj all the conscious activities like expectations, thoughts, feelings, and desires are the property of this ccc-atom, not of the material atoms or anything made from these material

atoms like the brain. Each of the orbits of ccc-atom and particles plays a specific role in the subjective experience and is responsible for the various cognitive functions and experiences in every conscious organism. What we perceive as the 'Mind', desires, thoughts and sensory experiences are all faculties, or orbits of this ccc-atom. These four different orbits can be drawn parallel to the four inner instruments (*Antahkaran Chatushtaya*) of mind - *manas*, *buddhi*, *chitta*, and *ahamkara* as described in the Indian philosophy, particularly Vedanta and Sankhya epistemology [11]. However, there are minor differences in the naming and definitions used in the Madhyasth Darshan. But what is striking is that if the terminologies used within inner instruments in Indian philosophy correspond to the orbital activity of the ccc-atom, then it would mean something tangible and physical is also happening corresponding to the inner instruments that we have discussing for ages philosophically but we seem to be clueless about to date ontologically in reality. Additionally, the four distinct orbits of the ccc-atom or inner instruments can also be compared to Kant's four broad categories of understanding (Quantity, Quality, Relation and Modality) [12]. These orbits function as the internal instrument that consciousness uses to operate, interpret, and respond to both internal and external stimuli. The ccc-atom's *mun* can be correlated with Quantity as it processes multiplicity of sensory inputs, *vritti* with Quality as it discerns the nature of experiences, *chitta* with Relation as it stores, recall and relates experiences, and *buddhi* with Modality as it influence perception of possibility and necessity. Kant's categories serve as the a priori conceptual lenses through which the human mind interprets sensory data, structuring our experiences. This alignment may suggests a structural parallel in how both philosophical systems conceptualize the faculties involved in human cognition and consciousness.

Table 1. Difference between material and conscious atom.

Material Atoms	Conscious Atoms
Constituents keep changing	No change in its constituent - existence of singular atoms
Regulated by molecular associations & law of weight balance	Regulated by expectations, thoughts feelings, desires, sanskaras (awdhama)
Engaged in physicochemical activities - in the formation of elements, molecules, compounds, cells, tissues, plants, organs, animals & human bodies.	Engaged in conscious activities - selecting, tasting, analysing, comparing, imaging, contemplating,
Not Conscious	Conscious in nature: self-aware
Both quantitative and qualitative changes	Only qualitative changes takes place

A. Nagraj in Madhyasth Darshan hypothesized that the progressive development of the material atoms yields the ccc-atom in which there can be no further change in structure or constitution [13]. This is referred to as constitutional completion or *gathanpurnta*. Thus, evolution is not only happening at the gross level from material

atoms to molecules to cells to plants to organs etc. in existence but also at the atomic level. These material atoms evolve into ccc-atoms by becoming constitutional complete. As a result, these “constitutionally complete” atoms become conscious and exhibit the 'will to live' by co-existing with the body. This ccc-atom has the abilities of cognition to a varying degree such as selecting, tasting, analysing, imaging, contemplating, understanding etc. depending on the evolution of the ccc-atom. A detailed non-emergent theory of consciousness is being worked out based on Madhyasth Darshan's proposition. Philosophically, ccc-atom is a hierarchically organized and evolved unit that attains partial or full autonomy; it also starts regulating the other two worlds, physical and mental. Such framework has been prominently discussed by Plato, Frege, Bolzano, Popper, Penrose etc.

A Western philosopher Leibniz proposed indivisible monads as fundamental units of reality, similar to atoms, and argued that consciousness could be composed of such irreducible units [14]. Rather, monads could be conceived as mind-like substances with mental, perceptual, appetite properties/powers that are significant for living beings. According to Leibniz, monads have explanatory power/role and asserts, “True substances are only simple substances, or what I call *monads*. And I believe that there are only monads in nature, the rest being only phenomena that result from them”. [15] Monadic interactions aren't purely causal-mechanical, rather based on a 'pre-established harmony', 'some internal principle'. [16] The proposition of ccc-atom by A.Nagraj in Madhyasth Darshan can be thought of as being similar to the Leibniz theory of monads to some extent by considering ccc-atom as a monad which is the fundamental unit of only conscious reality. Leibniz's monads and ccc-atoms have notable differences in their structure and origin, despite their similarities. For example, Leibniz's monads are not located within a substantival space because they are unextended, immaterial, and lack location. However, the ccc-atom is a kind of material in the sense that it is made up of sub-atomic particles and occupies space but completely different from material atoms. According to Madhyasth Darshan by A.Nagraj, there exist two categories of atoms - material and conscious atoms at different stages of development, however in monadology, there exist three kinds of monads - bare, intermediate and highest level monads.

In the mid 1990's, Roger Penrose and Stuart Hameroff in Orch-OR theory suggested that consciousness occurs if an appropriately organized system is able to develop and maintain quantum coherent superposition until a specific 'objective' criterion is reached; the coherent system then self-reduces (objective reduction: OR) [17]. Sequences of OR events give rise to a 'stream' of consciousness. As it introduces a fundamental process (quantum mechanics) into the explanation of consciousness, it still ties consciousness to specific biological structures, differing from the ccc-atom view that posits consciousness as an inherent property of ccc-atom. However, as per the Orch-OR theory, Microtubule-associated proteins can 'tune' the quantum oscillations of the coherent superposed states; this might be true in the sense that ccc-atom might interact with the microtubules through quantum level process within the neurons to send or read signal to/from the body, implying a connection to a fundamental atomic-scale property of consciousness. But what could be that atomic scale property of consciousness, the hypothesis of ccc-atom by A.Nagraj can provide

a better insight into the quantum-level process. Considering ccc-atom hypothesis in comparison to other most popular theories of consciousness, first, we analyze the global neuronal workspace (GNW) by Bernard J. Baars and neuroscientists Stanislas Dehaene and Jean-Pierre Changeux. GNW theory posits that consciousness arises from a particular type of information processing i.e. the broadcasting of information across a network of neurons, emphasizing the role of complex neural interactions [18],[19]. This stands in contrast to the ccc-atom hypothesis, which views consciousness as a fundamental property of ccc-atom rather than a product of neural complexity. However, considering the hypothesis of ccc-atom, it might be possible that the network of neurons broadcasts these messages to ccc-atom, which in turn reads, stores or calls up memory and sends messages to these neuron networks to execute an action. Another most popular theory of consciousness, Integrated Information Theory (IIT) developed by Tononi *et al.* proposes that consciousness corresponds to the capacity of a system to integrate information, quantified as Φ (phi) [20]. While IIT suggests that any system with a high degree of integrated information possesses consciousness; this differs from the ccc-atom hypothesis, which posits consciousness as an inherent aspect of ccc-atom not of the complex and interconnected structure like cerebral cortex. However, it might be true that the ccc-atom needs a complex interconnected structure for communication with the outside world. Panpsychism is the philosophical view that consciousness or a mind-like quality is a fundamental and ubiquitous feature of the universe, existing not only in humans and animals but also in all things, even inanimate objects, which differs from the ccc-atom hypothesis as it linked only to animate worlds. However, both views challenge the notion that consciousness emerges solely from complex neural processes. Instead, they propose that consciousness is a fundamental characteristic of reality, although they differ on what aspect of reality possesses this fundamental property. Panpsychism posits that consciousness is a fundamental property of reality itself, while Madhyasth Darshan suggests that it is solely an attribute of the ccc-atom [21]. In summary, the ccc-atom hypothesis and panpsychism both consider consciousness to be a fundamental property. However, the ccc-atom hypothesis only links consciousness with the ccc-atom. The ccc-atom hypothesis diverges from theories like IIT, GNW, and Orch-OR, in the sense that these theories attribute consciousness to specific organizational or biological complexities. However, theories like IIT, GNW, and Orch-OR might be playing a crucial role in understanding the interaction of ccc-atom with brain.

The concept of ccc-atom is not only in alignment with the concept of self (*Atman* / *Puruṣa* in Kashmir Shaivism / *Jīvātman*) discussed in various Indian philosophies such as the Vaisheshika school, an ancient Indian atomistic tradition, that considers reality composed of atoms, views the self (*Atman*) as eternal, indivisible, and non-material (considering proposed ccc-atoms different from material atoms) and mentioned that there must be some entity to which they belonged [22]. Bhagavad Gita, which describes the self (*Atman*) as unbreakable, incombustible, eternal, and smaller than the smallest in verses 2.23-2.25 [23], thus resembles with the properties of singular ccc-atoms proposed by A. Nagraj. Even the word “*sthira anu*” used in Bhagavad Gita to describe the self can also be interpreted as “*sthira anu*”, an stable atom. But it goes further in Madhyasth Darshan by describing how is the existence of

such “Self” possible from our modern scientific understanding by adding the existence of constitutionally complete conscious atoms to our ontology.

3 Extraordinary features of constitutionally complete conscious (ccc) atom

As discussed in the last section, consciousness then proposed to be a fundamental characteristic of the ccc-atom present in every conscious organism, which enables these organisms to experience the world and possess a rich inner life. Thus, the conscious organism is a co-existence of the ccc-atom (self) and the material body. The brain is a part of the material body and not the ccc-atom, which helps to read the sensations from the body and the outside world or sends instructions to the body to interact with the outside world. There are innumerable conscious entities (ccc-atoms) and each is distinct but similar. Considering the existence of these ccc-atoms, all kind of reality can be categorised into three types as illustrated in the following table 2.

Table 2. Categories of reality after including the ccc-atoms

Types	Description	Basis
Non- Living World / Activities	All kinds of physical & chemical (physiochemical) phenomena of atoms & molecules	Material Atoms
Living World / Activities	Molecules of the above which form into cells, tissues etc. that breathe or respire & grow. This includes all kind of plants, trees, insects, animal bodies and human bodies including the brain.	
Conscious World / Activities	Single constitutionally complete conscious (ccc-) atom which has the will to live and experiences sensory inputs, has thoughts, visualising ability, emotions or feelings etc. and the awareness that all this is happening. A nucleus with four orbitals. Each ccc-atom coexists with the body (include brain) to form animals and humans. Indestructible and irreducible. This ccc-atom or Self interacts with the brain but a different ontological reality from the above.	Conscious Atoms

As proposed if there is no longer any change in the structural form of the ccc-atom, then, it is indestructible, permanent, eternal and thus, immortal. Considering this Nagraj's hypothesis of consciousness as a fundamental property of a ccc-atom explains that consciousness can exist outside the brain as it's an indestructible atom, thus supporting events like out-of-the-body experiences (OBE) or near-death experiences (NDE). Dr Peter Fenwick, a neuropsychiatrist at the University of Oxford, has been studying the human brain, consciousness, and the phenomenon of NDE for 50 years, his extensive research suggests that consciousness persists after

death [24]. He believed that consciousness exists separately from the brain, but he did not understand how this was possible, linking it to dark matter and energy. This might be possible these ccc-atoms might be connected to dark matter and energy in some sense which we are yet to discover and needs thorough investigation. Recently, Dr. Sam Pernia et al. at NYU Langone Health have done an extensive consciousness and awareness study during cardiac arrest and have shown a perception of separation from the body [25]. Also, Dr. Ian Stevenson at the Division of Perceptual Studies, University of Virginia did the rigorous evaluation of empirical evidence for rebirth and the possibility of consciousness surviving physical death by documenting over 2500 cases. This challenges the mainstream scientific paradigms regarding the nature of human consciousness as the mechanism of rebirth/NDE/OBE hasn't been understood [26]. And just as discussing or studying consciousness in academia was once a taboo, so too have phenomena like rebirth and near-death experiences. However, the concept of rebirth can be also explained by the transmigration of the indestructible (immortal) ccc-atom (Self).

The existence of these ccc-atoms is currently unknown scientifically. As ccc-atom hypothesized by A.Nagraj in Madhyasth Darshan is more subtle than the material atoms and exist as an individual atoms, this makes it really difficult to detect it experimentally as per today's developed science and technology. We have understood through extensive research spanning centuries that the subtle can only be detected or perceived by something even more subtler. For example, traditional light microscopy, while groundbreaking in its time, was limited in its ability to resolve finer details due to the inherent properties of light. The development of electron microscopy, which utilizes a beam of electrons with a much shorter wavelength than light, allowed scientists to delve deeper into the microscopic world, revealing structures and details that were previously invisible. Thus, to detect and measure subtle phenomena, we need tools and techniques that are themselves at a similar or even more subtle level than the phenomena being investigated, which needs to be developed, considering the existence of ccc-atom. However, the interesting element of this proposition is that it leads to testable predictions at activities level, e.g., the existence of ccc-atoms could possibly be correlated and its activities could be measured. For example, the existence of specific types of waveform P3 waves during conscious awareness might reveal the interaction between the brain and ccc-atom. Similarly, the presence of delta waves during EEG might be due to presence of ccc-atom in the body while not interacting with the brain that moment. Thus, it might be easier to prove or falsify the presence of some activities beyond the body through controlled studies during near-death experiences (NDEs) or cardiac arrest, which might be linked to the presence of ccc-atom. Or In near future if it might be possible that artificial systems fail to achieve true consciousness (will to live, emotions or feelings and the awareness that all this is happening), despite mimicking behavior, this will hint to the existence of some conscious unit, which alone material atoms couldn't achieve.

According to A. Nagraj in Madhyasth Darshan, the ccc-atom uses/incorporates the brain as the medium of interaction from or to the body to engage with the outside world and to express the will to live. The possible mechanism of interaction of ccc-atom with the brain might happen through the waves generated by

the ccc-atom, which are sensed by the neurons in the brains and does the specific task, guiding actions, impacting the outside world. Similarly, vice versa the information reached to the neurons in the various parts of the brains through electrical signals or waves are read by the ccc-atom to get information about the outside world, i.e, ccc-atom influence brain processes, making conscious choices that drive neural activity and decision-making. The ccc-atom interacts with the brain in a two-way manner. The brain through its complex neural networks keeps on receiving the instructions from the ccc-atoms and broadcasting the messages to the ccc-atom through the brain waves. The brain, thus, provides the complex infrastructure (e.g., neural networks, sensory inputs, cognitive processing) that enables the ccc-atom to manifest itself, but it is not the origin of consciousness itself. The brain functions as a receiver and executor of the intentions, desires, thoughts, and expectations of the ccc-atom (self).

The existence of ccc-atoms, distinct from material atoms, introduces a form of dualism. This is due to the fact that it proposes fundamental properties that go beyond those explained by modern physics. However, this form of dualism may in the end be compatible with the scientific perspective. This approach doesn't contradict any current physical theory but we simply added the ccc-atoms to our ontology to explain how experience arises. The existence of the ccc-atom is not mysterious; its overall form is similar to that of material atoms, consisting of fundamental entities that are governed by fundamental laws. It expands and evaluates the ontological aspects, as has been done by many, like Maxwell also similarly expanded the ontology as discussed earlier to explain electromagnetism. The fundamental structure of this proposition by A.Nagraj is entirely naturalistic. It permits the possibility that the universe can be reduced to a bundle of basic entities adhering to simple laws and a non-emergent theory of consciousness is being formulated based on the proposition of Madhyasth Darshan by A. Nagraj. However, there are various open questions such as under what evolutionary mechanisms, it may happen; which material atoms evolve into ccc-atoms? these needs to be further investigated.

4 Conclusions

In conclusion, Nagraj's proposal of consciousness in Madhyasth Darshan that consciousness is a fundamental property of constitutionally complete conscious (ccc) atoms and doesn't emerge from the brain is a promising proposition with potential explanatory power of some of the hard problems of consciousness by taking experience itself as a fundamental feature of these ccc-atoms like mass and charge. Apparently, the ccc-atom offers an explanatory power to address the co-existence and co-evolution of matter and consciousness, along with some complementarity with other relevant frameworks. In other words, the ccc-atomic understanding doesn't offer any replacement thesis, rather it accommodates and refines aspects at some crucial levels. It attempts to blur the explanatory gap witnessed between the phenomenal and the physical. This also may shed light on other so-called mysterious phenomena of consciousness like rebirth, and near-death experiences, which are unable to be explained earlier. If the ccc-atom is missing and has not been discovered yet, future

physics might engage and reveal the "ccc-atom" and possibly open a new direction of research in consciousness studies.

Thus, the proposed model possibly provides a pathway to constitute of what is or what creates consciousness and adds something fundamental to our ontology - the presence of ccc-atoms, as everything in the material world is compatible with the absence of consciousness to a large extent. Understanding the mechanisms could help in solving the mysteries of consciousness. The proposed model further seems to be a coherent expression of many of the features of consciousness articulated in various streams of thought within the Indian system with the current terminology of modern science, leaving no mysteries behind.

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References

1. Raković D, Koruga D.: Scientific Challenge of the 21st Century. 2nd edition. ECPD, Belgrade (1996). <https://www.dejanrakovicfund.org/books/1995-ECPD-Consciousness.pdf>
2. Krauss, P., & Maier, A.: Will We Ever Have Conscious Machines? *Frontiers in Computational Neuroscience*, 14, 556544 (2020) <https://doi.org/10.3389/fncom.2020.556544>
3. Chalmers, David J.: *The Conscious Mind: In Search of a Fundamental Theory*, Oxford University Press (1996) <https://books.google.co.in/books?id=0fZZQHOfdAAC>
4. Chalmers, D.J.: Facing Up to the Hard Problem of Consciousness, *Journal of Consciousness Studies*, 2(3), 200-219 (1995) <https://ingentaconnect.com/content/imp/jcs/1995/00000002/00000003/653>
5. Pence, D. E.: Potential Controversies: Causation and the Hodgkin and Huxley Equations, *Philosophy of Science*, 84(5), 1177-1188 (2017)
6. Nagel, T.: What Is It Like to Be a Bat? *The Philosophical Review*, 83 (4), 435-450 (1974) <https://doi.org/10.2307/2183914>
7. Rajagopala, A.: *Vedārtha Sangraha Of Sri Ramanuja*, The Cauveri Colour Press (1956) https://ia601909.us.archive.org/32/items/dli.ernet.506168/506168-Vedārtha%20Sangraha%20Of%20Sri%20Ramanuja%20%281956%29_text.pdf, Page - 29, 3rd Paragraph
8. Deo, Sadafal: *Swarved*, Sukrit Offset Press, Vihangam Yog Ashram, (1939) <https://www.vihangamsg.com/swarved>

9. Nagraj, A.: Manav Vyavhaar Darshan, 4th edition, Jeevan Vidya Prakashan, Divyapath sansthan, Amarkantak, Madhya Pradesh, India (2004) u.pcloud.link/publink/show?code=kZ6Gm05ZfUbbDBW8fKmKB9ejvrO6cSRnRRH7
10. Nagraj, A.: Manav Abhyas Darshan, Jeevan Vidya Prakashan, Divyapath Sansthan, Amarkantak, Madhya Pradesh, India (2004) u.pcloud.link/publink/show?code=kZ6Gm05ZfUbbDBW8fKmKB9ejvrO6cSRnRRH7
11. Raju, P.T.: The Concept of the Spiritual in Indian Thought, Philosophy East and West, Vol. 4, No. 3, pp. 195-213 (1954) <https://www.jstor.org/stable/1397554>
12. O'Shea, J.: Kant's Critique of Pure Reason: An Introduction and Interpretation, Chapter 4, Acumen Publishing, pp. 116 - 157 (2012) <https://doi.org/10.1017/UPO9781844652808.006>
13. Nagraj, A.: Samadhantamak Bhautikvaad, 2nd edition, Jeevan Vidya Prakashan, Divyapath Sansthan, Amarkantak, Madhya Pradesh, India (2009) u.pcloud.link/publink/show?code=kZ6Gm05ZfUbbDBW8fKmKB9ejvrO6cSRnRRH7
14. Leibniz, G. W.: Monadology (1714). (Translation by Nicholas Rescher, 1991). University of Pittsburgh Press <https://books.google.co.in/books?id=L3QZBAAAQBAJ>
15. Rutherford, D. Antognazza, M. R. (Ed.). The Oxford Handbook of Leibniz. Oxford University Press. Pp.356. (2018).
16. Crane, T.; Leibniz. In Consciousness and the Great Philosophers, Routledge, pp. 101-107 (2016)
17. Hameroff, S.R.; Penrose, R.: Conscious events as orchestrated space-time selections, Journal of consciousness studies, 3, 1, 36-53 (18) (1996) <https://www.ingentaconnect.com/content/imp/jcs/1996/00000003/00000001/679>
18. Baars, B. J.: Global workspace theory of consciousness: toward a cognitive neuroscience of human experience, Progress in Brain Research, 150, 45-53 (2005). [https://doi.org/10.1016/S0079-6123\(05\)50004-9](https://doi.org/10.1016/S0079-6123(05)50004-9)
19. Dehaene, S. & Changeux, J. P.: Experimental and theoretical approaches to conscious processing. Neuron 70, 200-227 (2011). <https://doi.org/10.1016%2Fj.neuron.2011.03.018>
20. Tononi, G., Boly, M., Massimini, M., Koch, C.: Integrated information theory: from consciousness to its physical substrate. Nat Rev Neurosci 17, 450-461 (2016). <https://doi.org/10.1038/nrn.2016.44>
21. Brüntrup, G., Jaskolla, L.: Panpsychism: Contemporary Perspectives, Oxford University Press (2017) <https://books.google.co.in/books?id=VzrKDAAAQBAJ>
22. Dasgupta, S.: A History of Indian Philosophy, Vol. 1, Cambridge University Press (1922) https://ia800409.us.archive.org/26/items/in.gov.ignca.8897/8897_text.pdf Ch -8 THE NYAYA-VAISESIKA PHILOSOPHY, (21) Page - 362-363
23. Gita Supersite, IIT Kanpur https://www.gitasupersite.iitk.ac.in/srimad?language=dv&field_chapter_value=2&field_nsutra_value=24&htsrkd=1&httn=1&htshg=1&hcchi=1&hcrskd=1&ecsiiva=1&etsiva=1&etadi=1&choose=1
24. Fenwick, P. & Fenwick, E.: The Art of Dying. Bloomsbury: London. (2008) https://books.google.co.in/books/about/The_Art_of_Dying.html?id=5LDkJwAACAAJ
25. Parnia, S., et al.: Awareness during cardiopulmonary resuscitation: A multicenter study exploring consciousness, biomarkers, and psychological outcomes. Resuscitation, 185, 109721 (2023) <https://doi.org/10.1016/j.resuscitation.2023.109903>
26. Stevenson, I.: Children Who Remember Previous Lives: A Question of Reincarnation. McFarland & Company. (2001) <https://books.google.co.in/books?id=HodyPRa7n0wC>