Chapter Four: Consciousness - Part One
Thomas Lombardo

"Even though there be limits to space, and the stars are numbered, yet is the universe infinite. For that is the paradox and essence of life, which sets no bounds to the creations of mind or to their number."
John Taine (Eric Temple Bell)

The Nature and Future of Consciousness

In this chapter I focus on the nature of consciousness. The foundational ideas on reality, especially human reality and psychology, described in the opening chapters—including cosmic evolution, purposeful evolution, reciprocity, future consciousness, and reciprocal evolution—are in this chapter applied to an understanding of consciousness. Informed by these general concepts, the theory presented in this chapter is that consciousness is an ecological and evolutionary reality. Consciousness exists within an evolutionary and reciprocally organized cosmos and reflects this basic ontological form in its own dynamics and make-up.

As stated earlier, a plausible and illuminating perspective on the future of consciousness requires an informed and credible understanding of the nature of consciousness. How can we meaningfully and realistically consider the future of consciousness without a solid and convincing understanding of its nature? As such, presenting an informed and credible theory of the nature of consciousness—the focus of this chapter—is a necessary starting point and foundation for thoughtfully and realistically exploring the future of consciousness—the subject of the subsequent chapters.

The intimate connection between ideas on the nature of consciousness and speculations (or predictions) on the future of consciousness is apparent throughout the history of human thought. All theories in human history on the future of consciousness have been grounded in theories of the nature of consciousness. Our beliefs regarding human nature, of *what we are*—which includes our views on the nature of our consciousness—have strongly influenced our ideas regarding what we think *we will (or could) become*—including our visions of the future of our consciousness—and shaped our methods and practices for creating such envisioned future conscious realities.

As a general principle, theories and approaches to the future have been invariably informed and inspired by theories of reality and theories of the past and the present. Ontological beliefs regarding the nature of reality and human existence have strongly influenced our visions of our future reality. As explained in previous chapters, our future consciousness of what will or can be has developed or grown out of our learned understanding of reality as we have encountered and understood it. Our future consciousness has been built upon our conscious understanding of the past.

Moreover, ideas on the *preferable future* of consciousness have also invariably been envisioned in the context of a theory of the nature of consciousness. Our beliefs (what we have learned) regarding *what is* the case regarding the nature of reality have informed and inspired what we believe *ought to be*. Our ontologies—our beliefs about

reality—have strongly influenced our ethics and ideals. Contrary to the long-standing philosophical view that normative ideals can not be logically derived from descriptive or factual statements—that is, statements about what "ought to be" can not be deduced from statements about "what is"—the development and articulation of normative ideals in human history have been invariably informed and inspired by beliefs regarding the nature of reality. The practice of grounding normative and ideal visions and prescriptions regarding humanity in terms of theories of reality, including human reality, is a general and recurrent pattern within all human thinking.[1] In presenting preferable or desirable directions for the future evolution of consciousness, my proposals will strongly reflect my general theory of the nature of reality and in particular the nature of consciousness.

All in all, both theories about *what will (or could) be* and *what should be* are invariably informed and inspired by theories of *what is*. In summary, our visions of the future of consciousness—both of plausible possibilities and preferable ideals—depend upon our understanding of the nature of consciousness.

Throughout human history and continuing into the present, numerous theories of the nature of consciousness have been developed, which have guided and motivated diverse efforts to further evolve human consciousness. I expect that this plethora of approaches to consciousness will continue into the future, if not further expand and diversify. Moreover, I expect that the future of consciousness will be strongly influenced by these diverse theories and reflect the numerous interactive effects among these various theories of consciousness and its future evolution.

According to my theoretical perspective, as explained in previous chapters, humans have been consciously and self-reflectively engaged in myriad ways in the purposeful evolution of their consciousness, at least since the beginnings of recorded history. This collective intentional process, expressed in many different ways, has strongly influenced and will continue to influence the actual evolution of human consciousness. As conscious beings we articulate ideals and consciously attempt to realize them, with varying degrees of success. Consciousness has been and will continue to be purposefully evolved, structured and directed by the different mindsets of self-reflective conscious human beings.

Still, even granting the continued influence of diverse theories and approaches to consciousness and its future development—it is both natural and valuable to have a pluralistic arena of many voices and views driving human endeavors in purposeful evolution—what I present in this chapter as a credible and illuminating theory of consciousness in a number of important ways challenges traditional and current ways of thinking on consciousness. The ecological-evolutionary perspective on consciousness and its relationship to the physical world explained below critiques a number of common beliefs in the history of scientific, philosophical, and spiritual thinking on consciousness. As such, the theory of consciousness I outline below also challenges a number of visions and practices regarding the preferable future evolutionary development of consciousness as well.

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[1] See Lombardo, "Well Being, Reality, and the Good" (2017): https://centerforfutureconsciousness.files.wordpress.com/2023/07/well-being-reality-and-the-good.pdf; also Lombardo, *Future Consciousness*, pp. 10, 23.

I should though acknowledge that the ecological-evolutionary view of consciousness presented below has been informed and inspired by a number of ideas expressed by other writers and theories on reality, psychology, and consciousness. There are, in my mind, many important insights in the history of thinking on consciousness, reality, and the future that I incorporate into my view on the nature and future of consciousness.

All in all, I see the theory of consciousness and its future evolution developed in this book as uniquely contributing to the ongoing development of our understanding of consciousness and guiding its future purposeful evolution. The theory expands upon and distinctly adds to the ever-growing array of thoughts on the nature and future of consciousness. Self-reflecting on my own endeavor, I see my ecological-evolutionary theory as part of the overall evolutionary thrust of humanity to comprehend ourselves and prescribe and guide our future development. This ongoing evolutionary process has involved and it seems to me will continue to involve both agreements and disagreements among those attempting to understand and guide the evolution of consciousness. We are all participating in the pluralistic and purposeful arena of human guided evolution.[2]

The Wonder and Mystery of Consciousness

At the end of his famous book *Tractatus Logico-Philosophicus,* the twentieth-century philosopher Ludwig Wittgenstein stated "What we cannot speak about we must pass over in silence." In attempting to understand and describe the nature of consciousness it can clearly feel that we are dealing with something that is incomprehensible, ineffable, and inexpressible. Being in a state of consciousness, we are attempting to consciously comprehend and consciously put into words what is the general nature of this state of existence, in which we are immersed and participatory. Using our consciousness we are attempting to reflect upon—to hold a mirror up to—the very nature of our conscious existence as beings of consciousness. Can we stand back from or transcend the core reality of our existence, such that we can intelligibly and clearly comprehend its nature using the very capacity we are attempting to understand?

Perhaps though, as some philosophers of mind suggest, consciousness is a fundamental "brute fact" of existence, which can not be analyzed, described, or explained. It simply is. In this sense, consciousness is an irreducible mystery or existential given. To once again quote Wittgenstein from his *Tractatus*, "There are, indeed, things that cannot be put into words. They make *themselves* manifest. They are what is mystical." Consciousness may be unsolvable mystery, the ultimate mystical reality.

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[2] There are a variety of previous publications in which I presented, as my ideas evolved over time, my thoughts on the nature of consciousness and its possible and preferable evolution in the future. In particular, there are discussions on these topics in my books *Mind Flight,* pp. 419-424, 651-654, and 745-752, *Wisdom, Consciousness, and the Future,* pp. 190-212, 260-279, and 379-434, and *Essays on the Future of Psychology and Consciousness*, pp. 122-166, 215-244, 286-296, and 327-336. Numerous sections of my *Future Consciousness: The Path to Purposeful Evolution* are relevant as well.

And yet paradoxically, although perhaps a philosophical mystery, the reality of consciousness is that which we are most intimately connected, indeed immersed within. At our ontological core we are conscious beings. As stated earlier, I use the term "consciousness" as synonymous in meaning with the terms "experience" and "awareness." Given this general meaning, it seems evident that consciousness is the fundamental reality of human existence. Experience and awareness are central features of what it is to be human.

We live our lives in the ambient illumination of our consciousness. I write these words and you read and understand these words within our respective spheres of consciousness. As stated in the introduction to this book, we awaken to the world and ourselves through consciousness. Indeed the total temporal span of our existence, as we live it, from its beginning to its end, is encapsulated and manifested as a reality of consciousness. Consciousness is the medium through which all that is meaningful to us is revealed, known, and understood.[3] We are aware of our surrounding physical environment through consciousness; we consciously see, hear, and touch the world. Our personal identity, as we apprehend it, also appears to be a reality of consciousness; we are conscious selves and we are conscious of this conscious personal reality. All that we believe we know is formed (articulated) and comprehended within our consciousness. You, the reader, are engaged in the conscious effort to consciously understand this paragraph.

Moreover, we create, shape, and guide ourselves and the world around us through our conscious thoughts, goals, plans, emotions, motives, and purposeful behaviors. We make and remake the world and ourselves through conscious intentions and conscious actions. Purposeful evolution is realized within the sphere of consciousness, and in particular through future consciousness. Through the processes of consciousness we not only make sense of reality, we attempt to manipulate and create our reality.

Indeed, all our theories of reality and all our conceptualized solutions to addressing the challenges and problems of life, both great and small, are creations of our consciousness, are indeed fundamentally realities of our consciousness. It is within consciousness that we understand and identify what needs to be rectified and figure out how to go about doing it.

Interestingly, we seem to be able to transcend time in consciousness, both being aware of the past and visionary and anticipatory of the future. Moreover, through consciousness we are able to transcend the actual—of what is—and speculate on the hypothetical and the possible. We create fiction; we create science fiction. Our conscious imagination is able to soar beyond our perceptual consciousness. Our

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[3] It can be reasonably argued that knowledge and intelligence does not require consciousness. There are numerous skills and abilities we exercise without being conscious of the processes involved in executing those capacities. We can also reasonably argue that information processing machines demonstrate levels of artificial intelligence and yet do not posses consciousness. Not everything that is known is known consciously. Still, when we are engaged in the active process of attempting to understand some idea, or learn some new idea or fact, or attempting to describe and explain our knowledge, and think further about our beliefs, we are doing so consciously. See Richard Yonck's *Future Minds* (2020) for an extended discussion on intelligence, knowledge, and consciousness.

consciousness can extend out to the far reaches of the universe, ascend toward the infinite, and ponder issues of abstract philosophy and science.

All in all, consciousness is an amazing and wondrous reality. Although part of the fabric of existence, consciousness reflectively illuminates and apprehends existence. Our strange and unique personal reality is manifested within consciousness; our distinctive selves are creations of consciousness. We think, we remember, we feel, we desire, we perceive, we imagine within the arena of our consciousness; such diverse capacities are powers of our consciousness. Consciousness self-reflectively apprehends itself and puzzles over its own nature and place in the universe. We consciously create and debate theories on the nature of consciousness within our consciousness. We should find astounding the whole phenomenon of consciousness.

Theories of Consciousness

Given the great mystery, wondrous capacities, and centrality to our existence of consciousness there have been many different theories throughout history that have attempted to explain and make sense out of this extraordinary phenomenon. There have been various explanations offered regarding the puzzling relationship between consciousness and the physical world, which includes the especially perplexing connection between our bodies and brains—both physical realities—and our consciousness and conscious selves. How does consciousness connect with the surrounding physical world in which we are immersed? How does consciousness arise in a biological physical body? Or does it?

A good place to begin an inquiry into the nature of consciousness is to identify and review theories of consciousness. What main ideas have been proposed regarding consciousness? What main issues and disagreements exist across different perspectives? A number of the theories described below have been introduced earlier in this book, but in this section I systematically arrange these views and further elaborate on them. This review provides a conceptual roadmap and broad outline of the universe of ideas and perspectives on the nature of consciousness. It will serve as a jumping off point for presenting my ecological and evolutionary theory of consciousness in subsequent sections, providing both points of inspiration to build upon—where I see some idea of value and validity in earlier theories proposed—and also points to question and critique, opening the way for alternative ways of thinking. In creation, one builds upon the past, embracing some ideas, rejecting others, and at times re-arranging the whole edifice. All in all, the diverse theories of consciousness serve as a huge resource of provocative ideas to consider in attempting to formulate an informed, edifying, and illuminating perspective on the nature of consciousness.

Although the list of theories of consciousness provided below is intended to be relatively comprehensive in scope, the number of different theories of consciousness proposed throughout history is immense—indeed probably uncountable. If the reader wishes to delve more deeply and in more nuanced detail into theories of consciousness, I recommend Robert Kuhn's "A Landscape of Consciousness: Toward a Taxonomy of Explanations and Implications" for a very extensive review of theories. Kuhn includes

over two hundred different theories of consciousness.[4] My list below makes an effort to cover the most basic theoretical frameworks; in Kuhn's list the reader can find numerous variations and further elaborations on many of the main categories presented below. I have included page references within Kuhn's article for the various basic theories and categories described below. But I also include in my review a number of theorists and theories not covered in Kuhn's article; in particular, I include an array of classic philosophical theories, such as in the writings of Plato, Berkeley, Hume, and Heidegger, which are not directly addressed in Kuhn's review, and I also include some discussion of science fiction and futurist inspired visions of the nature of consciousness, also not included in Kuhn's article.

In the following review, the term consciousness is used as synonymous in meaning with the terms "experience" and "awareness," although it should be acknowledged that there is (and has been in the past) a level of diversity and ambiguity in how consciousness gets defined and understood. But generally speaking, understanding consciousness as equivalent in meaning with experience or awareness is a common practice. Following the philosopher Thomas Nagel's famous paper "What is it like to be a bat?", consciousness can also be understood in the sense of "what is it like to be" something, or "what does it feel like" to be something, which in essence, is fairly synonymous with the meaning of "experience" in the first person.[5]

To provide a general outline of the review of theories of consciousness provided below, included first is a list of the general theories; many of these general theories are further divided into a set of more specific expressions of the theory in the following review. To a degree, this list of general theories overlaps with Kuhn's set of general categories, but there is also a degree of difference between the two lists.[6]

- The Hard Problem Theory
- Materialism (Physicalism)
- Idealism
- Dualism
- Monism
- Panpsychism
- Relational-Interactive-Ecological
- Naturalism versus Supernaturalism
- Intentionality
- Act versus Content
- Phenomenology
- Evolution
- Emergence
- Feminist Theories

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[4] Kuhn, Robert Lawrence "A Landscape of Consciousness: Toward a Taxonomy of Explanations and Implications" *Progress in Biophysics and Molecular Biology*, 190, 2024, pp. 28-169.

[5] Nagel, Thomas "What is it like to be a bat?" (1974) cited in Kuhn, p. 165.

[6] See Kuhn's (2024) general outline or "landscape" on pages 34 to 40 of his article.

- Integrated Information Theory
- Global Workspace Theory
- Dual Modes of Consciousness
- Levels of Consciousness Theories
- Transparency Theory
- Self-Constructing Theory
- Computational and Information Theories
- Mathematical Theories
- Time-Based Theories
- Psi/Psychic and Altered States Theories
- Mystery of Matter Perspective
- Mysterianism
- Alien Consciousness Perspectives
- Future of Consciousness Perspectives

Theories of consciousness include:

- *The Hard Problem Theory of Consciousness*: Although it might seem odd to list the statement of a problem yet to be solved as a theory—since the word "theory" entails an explanation provided, rather than a perplexity or puzzle posed—the "Hard Problem" statement is a particular way of describing the reality of consciousness. Associated with the contemporary philosopher, David Chalmers, the "hard problem" thesis asserts that there is a fundamental and incommensurable qualitative difference—in fact, perhaps an ontological difference—between consciousness and physical reality, and especially between consciousness and the physical reality of the brain. A complete description of the physical properties and processes of the brain would totally miss any inclusion of experience or consciousness, or its associated qualities. Consciousness (and conscious qualities) are above and beyond physical realities and qualities. Consciousness consists of sensations, emotions, imagery, thoughts, memories, desires, pleasure and pain, and other qualities, whereas physical reality consists of objects with mass, size, physical shape, and spatial locations, and physical energy (including electrical-magnetic and optical) and patterns of energy. Hence, how can consciousness be connected to such physical entities and physical processes, either in the sense of physical brain activities causing conscious states, or conscious states causing bodily actions? The modern philosophical origins of the hard problem go back to Rene Descartes' dualism of mind and body.[7] Numerous different theories (see below) have been proposed that "solve" the hard problem of consciousness and the physical world (brain); there can be debate on exactly how to state the hard problem, or what is the hard problem. Some theoretical approaches reject that the hard problem is a real (ontological or scientific) problem (also see below). Another way to state the hard problem is to note that there is an incommensurable difference between a first-person (subjective) and a third-person (objective) perspective of reality. There are

[7] Chalmers, David *The Conscious Mind*, 1996; Kuhn, pp. 29-32; Descartes, Rene, *Meditations on First Philosophy,* 1641.

also various approaches to connecting together first-person and third-person visions of reality.[8]

- *Materialism* (*Physicalism*) posits that the universe is entirely physical. There is no separate ontological realm of consciousness. As one important expression of this ontological theory, since consciousness seems to depend upon (at least in some necessary way) active states of the physical brain, perhaps consciousness is nothing but states of the brain, or of the body as a totality. Materialism argues that a complete explanation and elucidation of the nature of consciousness can be found through an understanding and description of the physical activities of the brain and the body. Kuhn states that the greatest number of different contemporary theories of consciousness are materialist (physicalist) in some manner or form, and this theoretical perspective is the dominant view among contemporary scientists.[9]
  - *Consciousness is an Illusion* (as a separate reality from the physical): Although in our common sense/everyday way of thinking it may appear that consciousness is something separate and distinct from our physical bodies and brains, this impression is an illusion. The language of consciousness may reflect a primitive way of thinking about and describing our lived existence, eventually to be replaced by a more scientifically enlightened (bio-physical) way of thinking. Defenders of this kind of position include the physiologist Patricia Churchland and the philosophers Daniel Dennett and Paul Feyerabend.[10]
  - *Behaviorism*: There are different forms of this theoretical perspective. *Methodological behaviorism* posits that only observable physical behavior can be scientifically studied; if consciousness is a private subjective (first person perspective) reality, then it is not a scientifically meaningful concept. *Ontological behaviorism* is the view that consciousness as a separate reality distinct from behavior does not exist, and/or is a meaningless concept. *Logical behaviorism* is the view that all terms (or concepts) that refer to mental or conscious states actually refer to nothing but behavioral abilities or dispositions.[11]
  - *Foundational Brain Theories*: There are numerous different theories regarding how electro-chemical brain activities, including specific types of patterns of activity, interactions, and integrative processes in the brain, cause or are identical to consciousness.[12] One sub-category of this theoretical perspective is *Holistic Electromagnetic Field* Theories, which describe the physiological foundation of consciousness as distributed across large areas of the brain, or holistic

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[8] Kuhn, pp. 148-149.

[9] Kuhn, pp. 40-85.

[10] Kuhn, pp. 40-41; see also Feyerabend's "eliminative materialism" at: https://en.wikipedia.org/wiki/Paul_Feyerabend

[11] There are numerous sources on behaviorist psychology and behaviorism; see, for example, Robert Watson *The Great Psychologists* (1997); for logical behaviorism, see Gilbert Ryle, *The Concept of Mind* (1949).

[12] Kuhn, pp. 46-53.

electromagnetic fields generated in the brain;[13] the origins of this idea go back to Gestalt Psychology.[14]

- *"Society of Mind" Theory*: Marvin Minsky hypothesized that the integrated conscious mind emerges as a result of the interaction of a large number of localized intelligent (but "mindless") modules in the brain, each having specific functions, which as members of a complex neurological hierarchy produce a singular holistic mind.[15] The human mind and consciousness is an integrative effect generated by a plurality of distinctive quasi-intelligent subsystems.
- *"Multiple Drafts/Pandemonium" Theory*: Classified by Kuhn as a Materialist Theory, the philosopher Daniel Dennett has proposed that multiple parallel processes in the brain compete with each other over becoming the focus of attention in the ongoing sequential flow of consciousness. Strongly influenced by Darwin's evolutionary theory of natural selection, Dennett rejects the idea of a central "conscious stage or theatre," within which the contents of consciousness can be indubitably viewed or described introspectively. In his famous book *Consciousness Explained*, and other writings besides, he critiques both dualist views of a separate realm of consciousness (distinct from the physical world and brain) and the supposed "hard problem" of consciousness (the incommensurability of conscious states and brain states; the distinctive qualities ("qualia") of consciousness are an illusion.[16]
- *Physiological Non-Brain Consciousness*: Consciousness in evolutionary history does not require a brain or complex nervous system; consciousness, including self-consciousness, emerged at a cellular level. Consciousness is a key expression or feature of all biological life.[17]
- *Quantum Theories*: There are numerous contemporary theories of consciousness that in some manner or form hypothesize that consciousness reflects the fundamental sub-microscopic quantum reality of the universe, one of the better known being Penrose-Hameroff's "Orchestrated Objective Reduction" theory. Quantum-inspired theories of consciousness though may not be entirely materialistic in formulation, since quantum physics can be interpreted as implying that consciousness enters into the determination (and measurement) of any physical reality, hence there is no determinable physical reality independent of consciousness.[18] The apparent indeterminism implied in quantum descriptions of sub-microscopic physical reality has been invoked as a foundation upon which to explain free-will (or lack of complete determinism) in personal consciousness.

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[13] Kuhn, pp. 53-55.

[14] Koffka, Kurt *Principles of Gestalt Psychology*, 1935 and Kohler, Wolfgang *Gestalt Psychology*, 1947.

[15] Kuhn, pp. 49-50; Minsky, Marvin, *The Society of Mind,* 1985.

[16] Kuhn, pp. 48-49; Dennett, Daniel, *Consciousness Explained*, 1992.

[17] Kuhn, pp. 83-84.

[18] Kuhn, pp. 88-96.

- *Idealism* posits that the universe, in its entirety, is a mental reality or expression/manifestation of consciousness. All that exists is consciousness. As the opposite of materialism—conscious reality is entirely reducible to physical reality—idealism is the view that physical reality is entirely reducible to consciousness or mental reality. There is no physical reality independent of consciousness. Since our conceptual understanding of the physical world (including all of the theories of science and the very idea of an independently existing physical world), and the phenomenological manifestation of the physical world within sensory perception, arise within consciousness, one can argue that the physical world, as experienced and understood depends upon, or is a manifestation of consciousness. This general ontological theory identifies consciousness as foundational and ubiquitous to all of existence. Various expressions of this theory can be found in both Western philosophy and Eastern thinking, especially so in the latter case in Indian philosophy.[19]
  - *Berkeley's Theistic Phenomenalism*: As argued by the seventeenth century philosopher, Bishop George Berkeley, everything that is experienced are "ideas" or objects of consciousness; all that can be meaningfully known or posited to exist are objects of consciousness; "to be is to be perceived;" it is meaningless to consider anything that exists beyond consciousness, which would include hypothesized independently existing physical objects. When conscious realities are not being presently experienced by any finite mind, such conscious realities still exist in the conscious mind of God. Existence entirely consists of ideas and minds.[20]
  - *General Western Phenomenalism*: Everything is experienced phenomenon. The totality of (known) existence are conscious objects, data, ideas, or impressions, as, for example, argued in Hume and J. S. Mill's empiricist-grounded ontology. If all meaningful knowledge is based on observation (the theory of empiricism), then all that can be known or meaningfully posited are objects of experience. Basically, this is the same view as in Berkeley without the inclusion of God. For example, in David Hume's radical empiricist philosophy—we can only know and justifiably postulate what we directly experience—the entirety of consciousness—of all that can be known—consists of "ideas" and sense "impressions," the former derived from the latter.[21]
  - *Physical Illusionism*: Both in Western and Eastern philosophies—such as in Plato and in Hinduism—it has been proposed that the experienced physical world is in some fundamental sense an illusion or mere appearance, and what truly exists is just consciousness (or mind or spirit). This illusion of the physical world can be connected with the illusion of time; what truly exists is a timeless or eternal realm of consciousness, mind, or spirit. This absolute mental reality (beyond the veil of appearance) according to Plato consists of an integrated configuration of abstract

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[19] Kuhn, p. 121.

[20] Berkeley, George (1713) "Three Dialogues between Hylas and Philonous" in Smith, T.V. and Grene, M. (Eds.), *Berkeley, Hume, and Kant*. Chicago: The University of Chicago Press, 1957.

[21] Hume, David, *An Enquiry Concerning Human Understanding*, 1748.

ideal forms or ideas, or according to versions of Hinduism as an all-pervasive reality of pure consciousness.

- *Cosmic Unified Consciousness*: Inspired by Indian philosophy, everything that exists is a manifestation of (or contained within) a universal unified consciousness; everything that exists is in the "mind of God"—indeed is the "mind of God." The contemporary philosopher Deepak Chopra supports this view.[22] In some ways this view is similar to Berkeley.
- *Undifferentiated Cosmic Consciousness*: Also inspired by Indian philosophy, it is proposed that an undifferentiated universal consciousness is fundamental to the entirety of the cosmos. (See above) Theosophy is an example of this theory.[23] This view can be combined with the previous view: An undifferentiated unifying cosmic consciousness.
- *Pure Primary Intransitive Consciousness*: Transitive consciousness is consciousness of something; intransitive consciousness is awareness, as such, considered independent of any object. Intransitive consciousness is the fundamental reality of all existence. Related to this idea is defining consciousness as "that to which everything else appears."[24]
- *Cosmic-Self Identity Thesis*: Although this view can be seen as either a form of idealism or supernaturalism (see below), the specific thesis, found in Hindu-Indian philosophy, is that the fundamental substrate of all existence is consciousness, and each individual particular (personal) consciousness in the cosmos is a manifestation of this universal consciousness, such as in the Hindu idea that *Atman* (the soul or unique self of each person) partakes in/is the "spark" of *Brahman* (the universal consciousness). In essence, there is only one consciousness. This view can also be expressed as consciousness is first person experience, and that the "I" of this first person experience is fundamental to reality, and this "I" is equivalent to universal consciousness. "I" is the universal foundation of reality. This "I" though is not an object (as in transitive consciousness) of consciousness, but the intransitive dimension of consciousness.[25]
- *Developmental Consciousness:* Both Hindu and Buddhist philosophies invariably include some kind of theory (vision and practices) regarding how individual consciousness can develop through stages or levels of increasing veridical awareness realizing increasingly cosmically attuned awareness. See, for example, Sri Aurobindo below.
- *Monad Theory*: Associated with the philosopher Leibnitz, this theory proposes that the universe is an immense plethora of unique "monads," in which each hypothesized monad is a conscious reality and a distinct perspective (or mirror) on the entire cosmos. As such, each individual consciousness is a perspectival

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[22] Kuhn, pp. 127-128.

[23] Kuhn, p. 120.

[24] Kuhn, p. 122.

[25] Kuhn, pp. 118, 122-123.

reflection on the entirety of all reality, a "mirror of infinity." Individual conscious monads exist in a pre-established harmony created by God.[26] In a general sense, this Western view is similar to the Eastern Atman-Brahman thesis: Each individual consciousness is a unique expression and reflection of the cosmos as a whole.

- *Kastrup's Idealism*: One well-known contemporary Western form of idealism proposed by the philosopher Bernardo Kastrup postulates a singular universal phenomenal consciousness. The plurality of individual consciousnesses are "dissociations" of this universal cosmic consciousness, and the world, as it appears, are extrinsic views of the universal phenomenal consciousness. There is no physical world independent of consciousness.[27] It is important to note how this idealist view, in resonance with other idealist views above, proposes a universal or cosmic consciousness that serves as a foundation (or source) for individual consciousness.
- *Hoffman's Idealism*: Donald Hoffman argues that our conscious perceptions of the physical world are not veridical but simply adaptive, evolutionarily selected for survival. Our perceptual experiences do not really look like the real world. The objective world consists entirely of conscious agents and their experiences.[28]
- *McGilchrist's Creative Immersive Idealism*: Kuhn lists Iain McGilchrist's complex theory of consciousness and human reality as a version of idealism. For McGilchrist, physical matter is a theoretical abstraction, created by consciousness, and consciousness is fundamental and primordial. Consciousness, though, is not a "thing," but a creative process. Moreover, conscious knowing is immersive; we are not conscious of something separate from us; we do not stand apart from what we know; we are within the reality that we experience. [29] See further discussion on McGilchrist below under *Dual Modes of Consciousness*.

- *Dualism* posits that there are two types of being (or existence), physical matter and consciousness. Dualism, which doesn't reduce one ontological realm to the other, may or may not posit interactivity between the realms. Conscious states and brain states may parallel each other without causal interaction; or alternatively brain states may "cause" conscious states, and conscious states, such as intentions and desires, may "cause" physical actions of the body. But dualism does not provide a convincing or comprehensible explanation for how the two distinct realms could interact or even run parallel with each other, since it is posited that the two realms are incommensurable and qualitatively different. In particular, states of the brain definitely appear to be qualitatively different than conscious states. (See the Hard Problem above.) How can electro-chemical activity in a brain generate a conscious

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[26] Leibnitz, Gottfried. W. *Monadology*, 1714.

[27] Kuhn, p. 125.

[28] Kuhn, p. 126.

[29] Kuhn, p. 126; McGilchrist, Iain, *The Master and His Emissary*, 2009 and *The Matter with Things*, 2021.

thought, sensation, or emotion, or how can a conscious intention and desire move a physical muscle? [30]

- *Substance Dualism*: There are two distinct types of substances: Consciousness (or mind) and physical matter, which are totally different in their nature, make-up, and qualities. Kuhn identifies this view as the default position of followers of Abrahamic religions, although, according to Kuhn, it is not supported within a careful reading of the Old Testament. Moreover, Kuhn states that substance dualism is rejected by most contemporary Western philosophers. The seventeenth century philosopher, Rene Descartes, though is well-known for proposing a form of substance dualism: The conscious mind is non-spatial, indivisible, and has the powers of thought and free will, whereas physical matter possesses spatial dimensions, is divisible into parts, and is mechanistically deterministic. Descartes' substance dualism—in fact substance dualism in general—suffers from the problem of explaining interaction between qualitatively different substances, in particular, the physical brain and the conscious mind.
- *Property Dualism*: In contrast to substance dualism, property dualism postulates that there is only one form of substance, namely physical matter, but there are two sets of distinctive qualities or properties, namely those that pertain to fundamental physical matter and those qualities that pertain to consciousness or mind. Conscious qualities—as a distinct and new set of properties—arise out of physical matter and physical qualities.[31]
- *Non-Reductive Physicalism*: Conscious (or mental) states are caused by physical states of the brain (and/or physical body), but are ontologically distinct from the brain and body. This view could take the form of property dualism. This view suffers from explaining how consciousness could arise from physical reality, a totally different kind of reality. [32]
- *Interactionism or Interactive Dualism:* Although consciousness and physical reality (for example, states of the brain and body) are distinct, these two realities causally interact, consciousness causing events in the body/brain and physical events in the body/brain causing states of consciousness. Descartes subscribed to this view. But how can such incommensurables interact? [33]
- *Naturalistic Dualism* versus *Supernatural Dualism*: In the former case, consciousness and physical matter are viewed as ontologically distinct realities within the natural world (both open to scientific study), whereas in the latter case, consciousness is seen as a supernatural state (or derived from a supernatural source) distinct from the natural world, and as such, is not open to scientific study.[34]

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[30] Kuhn, pp. 110-121; Blackmore, Susan *Consciousness: An Introduction*. Oxford: Oxford University Press, 2004.

[31] Kuhn, p. 111.

[32] Kuhn, p. 85.

[33] Kuhn, pp. 114-115.

[34] Kuhn, pp. 115-116.

- *Top-Down Conscious Causation*: Consciousness is a distinct reality from the physical body/brain and somehow standing above (or being transcendent or emergent to) the physical body is able to have causative effects upon the physical body. Kuhn identifies Murphy's Christian theory of consciousness as an example of this view.[35]
- *Platonic Dualism:* As a classic and highly influential early form of dualism, Plato proposed that there were two spheres of existence: The realm of eternal forms (or ideas) accessed through the mental power of reason and the realm of transitory illusionary physical reality and sensory experience. True reality is eternal and timeless; perceptual reality and the physical is temporal. As explained in Plato's famous "Allegory of the Cave", the former is true reality, as revealed through the light of reason; the latter is mere appearance, and merely shadows on the walls of the cave. One can view this distinction by Plato as a distinction between the realm of abstractions and the realm of particulars. Although not precisely a dualism of consciousness and physical matter, Plato's dualism is closely related, since the primary sphere of reality consists of "ideas"— clearly pertaining to the mind— whereas sensory experience pertains to the realm of apprehending transitory physical objects.[36] It is important to note that Plato's philosophy can be interpreted as a form of dualism or a form of idealism (see earlier discussion).
- *Kantian Dualism:* I would classify the theory of the influential eighteenth century philosopher Immanuel Kant as a form of dualism. (Kant has also been described as an idealist.) For Kant, there is the intelligible and meaningful realm of phenomena—how reality is experienced and interpreted through the categories of human understanding and the intuitions of space and time—and there is the postulated realm of "things-in-themselves," which we assume exists independent of the realm of experience (phenomena), but can never be directly experienced or known. In a sense, everything experienced and apprehended is part of consciousness; the realm of external physical matter is assumed to exist, but can never be apprehended or understood.[37]
- *Epiphenomenalism and Psycho-Physical Parallelism:* The latter view postulates two separate flows of two different realities, a conscious and a physical flow, that although exhibiting correlative or parallel sequences of events do not causally interact with each other. The former view, assuming a psycho-physical parallelism, specifically contends that the flow of consciousness, although aligned with the flow of physical events, has no causal impact on the flow of physical events. Epiphenomenalism though is a perplexing position since, if it were true, there would be no apparent reason why the conscious flow exists at all, in so far as it has no causative role to play in the flow of (physical) reality. In

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[35] Kuhn, pp. 86.

[36] Plato, *Republic*, 375 BCE; Lombardo, *The Evolution of Future Consciousness*, 2006, pp. 194-201.

[37] Kant, Immanuel *Critique of Pure Reason*, 1781.

epiphenomenalism consciousness is like a video of reality that has no other function than simply to be watched.[38]

- *Filter/Receiver Theory of the Brain:* The physical brain does not cause or generate consciousness, but rather is a spatially localized physical receptor or filter for non-local consciousness which permeates the entire universe.

- *Monism:* Contrary to dualism, monism postulates that there is only one substance, or form or kind of reality.[39] Sometimes, the expression "non-dual" is used in articulating a monistic theory, intending to indicate a rejection of dividing reality into distinctive spheres. Monism, carried to the extreme, can assert that all distinctions or apparent separate realities are unreal; all is one. The pre-Socratic Greek philosopher, Parmenides, and various forms of Hindu philosophy adopt this view: Ultimate reality is a single indivisible absolute "Oneness;" all differences are apparent, rather than real.[40]
  - *Reductive Monism,* such as materialism and idealism, which posits a single fundamental substance or reality, explain the mystery of how consciousness is related to the physical world by attempting to derive one ontological realm (whether physical or conscious/mental) from the other, and in fact, rejecting as an independent reality either consciousness or physical matter. Either consciousness doesn't "really" exist as something separate from the physical world (the materialist thesis), or physical matter doesn't "really" exist as something separate from consciousness (the idealist thesis). Either type of monistic theory can appear to deny the obvious: rejecting either that there exists a physical world separate from our consciousness, or that we possess consciousness, as some kind of distinct reality, different from the physical-chemical processes within our bodies or brains.
  - *Neutral Unifying Monism* proposes that consciousness and physical matter, although appearing to be two incommensurable forms of reality, are actually two different manifestations of a single underlying and unifying reality. The seventeenth century philosopher Spinoza postulated that the mental and physical are different attributes of the single unifying infinite substance of God.[41]
  - *Dual Perspective/Aspect* theory posits that consciousness and the physical world are just different perspectives taken on the same phenomenon (reality). Perhaps, as in the *Identity Theory* of consciousness and brain, what we have are two different perspectives, interior and exterior respectively, of the same reality. Consciousness is just the inner states of the physical brain, whereas the physical brain is just looking at consciousness from an outside perspective.[42] In a somewhat similar vein, the contemporary philosopher Ken Wilber identifies two

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[38] Kuhn, p. 41.

[39] Kuhn, pp. 105-110.

[40] Lombardo, *The Evolution of Future Consciousness*, 2006, pp. 193-194.

[41] Spinoza, Baruch, *The Ethics*, 1677.

[42] Feigl, Herbert *The "Mental" and the "Physical"*. Minneapolis: University of Minnesota Press, 1967.

different perspectives on reality—the interior and the exterior—the former being inner conscious experience, the latter being the observable physical world.[43] Consciousness is the inside view of reality; the physical world is viewing reality from the outside. As such, conscious humans appear as physical bodies from the outside (of that body), or appear as beings of consciousness from within themselves (we appear as conscious beings to ourselves). Another way to state this theory is in terms of the distinction between the *First Person* versus *Third Person Perspectives* on reality: Viewing reality from our personal/intrinsic point of view (first person), reality appears as consciousness; viewing the reality of others, a reality that is open to the public observation of multiple observers (third person), reality appears as physical matter. And still, even another way to describe this dual-aspect perspective theory is the distinction between the *"Subjective"* and *"Objective."* Reality viewed from the inner personal point of view is the subjective; reality understood as independent of a personal point of view is the "objective." Consciousness is the subjective; physical matter is the objective.[44]

- *Aristotle's Dynamic Form Theory*: Rejecting Plato's dualism, for the ancient Greek philosopher Aristotle, "psyche" (meaning "soul") is not a separate substance from the physical body, but rather the function or dynamic form of the material body. "Psyche" can not exist separate from the physical body. But Aristotle also discusses the capacity of "nous," which is the capacity to understand, and this capacity he believed may be able to exist separate from the material body.[45]
- *Information Monism:* Information, understood as pattern, structure, or differentiation, is a unifying feature that applies to both consciousness and physical matter. Both realms can be described in terms of informational structure or content. As such, information may be ontologically primary, an underlying dimension that unities consciousness and physical matter.
- *Bohm's Implicate-Explicate Order:* The theoretical physicist David Bohm has argued that although at the phenomenal or explicate level, the cosmos appears as a reality of distinct separate entities, at the deep or implicate level everything is united as a "oneness," including consciousness and physical matter. Phenomenal reality is diversity; deep reality is unity. This idea has similarities with Parmenides, Plato, and Hinduism. [46]
- *Bart's Theistic Monism*: The philosopher and theologian Bentley Hart has argued that conscious knowledge and intelligible being are united or fused in the fundamental existence of God. As such, "to know" (studied in epistemology) and "to be" (studied in ontology) are connected or united together—an ultimate oneness. Knower and known are one.[47]

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[43] Wilber, Ken *A Brief History of Everything*. Boston: Shambhala, 1996.

[44] Kuhn, pp. 43-45, 108.

[45] Lombardo, *The Evolution of Future Consciousness*, 2006, pp. 201-203; Lombardo, *The Reciprocity of Perceiver and Environment*, 1987, pp. 15-18 and 33-40.

[46] Kuhn, p. 91.

[47] Kuhn, p. 109.

- *Velmans' Phenomenological Externalism and Reflective Monism*: The psychologist Max Velmans argues that the universe is fundamentally a single undifferentiated reality that evolves into differentiated physical-matter entities and that consciousness is a state of self-reflection within this differentiated universe. Consciousness is the universe reflecting on itself. (Compare to Leibnitz's monadology.) Moreover, the sensory objects of consciousness (the phenomena/ phenomenology of experience) are located (as they appear to be) within the physical world; sensory phenomenal objects do not exist, as commonly supposed, in the brain. In respects, Velmans' view aligns with the direct realist theory of perception. (See below)[48]
- *Priority Monism:* The philosopher Yujin Nagasawa argues that instead of looking for what is fundamental to the universe in the simplest, most micro-level entities and explaining everything within the universe out of its components from the "bottom-up"—building reality from its individual constituents—we should search for the most fundamental within the singular cosmic totality of the whole.[49] It is out of this cosmic oneness and wholeness that we will come to understand consciousness and mind. The consciousness of the cosmos is prior and foundational to the consciousness of individuals within it. This view has similarities with Spinoza's monism and Hindu cosmic philosophy.

- *Panpsychism* posits that everything in the physical universe is conscious. Consciousness is just the inner state of all physical realities. Panpsychism is a form of dual perspective thinking or identity theory carried to the extreme—for all matter is conscious and possesses an inner experiential reality—but it strains credibility in positing that rocks, grains of sand, and atoms are all conscious—a rock feels itself as a rock. The ancient idea of *animism*—the belief that everything in nature possesses an animating "spirit"—is a form of panpsychism. Kuhn describes panpsychism as a synthesis of materialism and dualism, and identifies Chalmers and Sheldrake as contemporary panpsychists.[50]
  - *Micro and Macro-Panpsychism:* Micro-panpsychism proposes that the smallest physical entities of the universe all possess an inner conscious reality; hence, a biological body, which is composed of a gigantic number of micro-particles, must be some kind of synthesis of a gigantic number of distinctive consciousnesses. Macro-panpsychism proposes that the singular conscious reality of a biological body is the holistic inner singular reality of that biological body.
  - *Cosmopsychism*: According to Philip Goff, the universe as a single vast and holistic reality is conscious and has a "telos"—a directional purpose[51]. More generally, cosmopsychism can mean that the universe possesses an inner singular holistic consciousness.

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[48] Kuhn, p. 105-106.

[49] Kuhn, pp. 100, 146.

[50] Kuhn, pp. 99-104.

[51] Kuhn, pp. 100-102.

- *Relational-Interactive-Ecological Theories:* Consciousness and mind are to be understood not as things in themselves, or as isolated within the body, but rather as embedded within the relationship and interaction of the body and the world/ environment.
  - *Immersive/Participatory Theories:* Consciousness can only be realized from within and in interaction with the natural universe. Consciousness is not/can not be a standing back from, or apart from the natural universe; absolute objectivity of awareness is impossible; experience is always from somewhere within/a point of view. Perceptual consciousness is from within the universe. (See Smolin and Nagel[52] and Feminist Theories below)
  - *Extended (Embodied) Mind Theory*: Instead of thinking that consciousness and the mind is "localized" in the brain or the biological body, mentality, intelligence, and consciousness are embodied and shaped in the total ecological Gestalt of human/animal behavior and their tools in the context of the environment. Consciousness and mind exists in the interactive loops of activity between embodied living organisms and their environment. As such, it could be argued that mind and consciousness are not "in the head," or even simply in the body, but rather in the functionally integrated ecological systems in which conscious beings participate.[53]
  - *Reciprocity*: As an alternative to both materialist and idealist monisms, as well as an alternative to dualism, consciousness and physical matter, and knower and known, are viewed as reciprocals, being distinct yet mutually dependent. Each reciprocal requires the other to be properly understood. Stated with more precision, the conscious perceiving/behaving/knower exists in a reciprocal relationship with the known environment (which includes the physical and psycho-social environments). Reciprocity rejects mind-matter dualism. Origins of theory to be found in Chinese Taoism of the Yin-Yang and in more recently in Gibson's ecological psychology.[54] This theory is described in depth in previous chapter and in latter parts of this chapter.
  - *Heidegger's "Being-in-the-world" ("Dasein")Theory*: The twentieth-century existentialist philosopher, Martin Heidegger, rejecting both Descartes' dualism and the subject-object distinction, proposed his famous fundamental ontological concept of "Dasein"—meaning "being there" or "being-in-the-world"—as a core concept to describe the basic reality of humanity. We do not exist as conscious beings apart from the world, but rather our fundamental reality is of ourselves within the world, actively engaging with the world, in which both we and the world

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[52] Smolin, Lee, *The Life of the Cosmos*, 1997, and Nagel, Thomas *The View from Nowhere*, 1986.

[53] Kuhn, pp. 64-68; Clark, Andy *Natural Born Cyborgs*, 2003, and *Supersizing the Mind*, 2008; Noe, Alva, *Out of Our Heads*, 2009.

[54] Lombardo, *The Reciprocity of Perceiver and Environment*, 1987.

are conjointly revealed in relationship with each other. There is no conscious I (or conscious mind) separate from this foundational reality.[55]

- *Naturalism:* The general meta-theory that consciousness can be completely understood as a reality within the natural universe and consciousness has natural causes. Naturalism does not necessarily imply materialism; one can have dualist, idealist, monist, panpsychist, or reciprocal naturalist theories of consciousness. Many of the above theories are naturalistic. Brain-based theories, and materialist theories in general, though, tend to be naturalistic.[56] Naturalism, as a general meta-theoretical category, is to be distinguished from supernaturalist theories of consciousness (described below).
- *Supernaturalism:* To be contrasted with naturalism, supernaturalism is the view that consciousness originates in some realm of existence, and is composed of a kind of reality, which is beyond the natural world observed through our senses and our physical instrumentality. Supernaturalism is a form of ontological dualism, since a second distinctive realm of existence is posited that presumably transcends the physical world of nature around us. The nature and origin of consciousness is transcendent to the natural world.
  - *Supernatural God Created Supernatural Souls Theory*: A supernatural God (transcendent to the physical universe) is the origin and creative source of individual conscious beings, whose core reality is a distinctive (personal) soul.
  - *Soul Theory:* The concept of a "soul" is a pervasive belief across the world and in various different religious belief systems. The meaning of the word "soul" and the related term "spirit" though varies significantly across cultures and historical periods. Soul though can mean what is distinctly and uniquely personal within consciousness, and spirit can mean a power, agency, or being that is non-physical. The belief in immortality is often closely connected with the soul theory, with the soul seen as the entity (a personal identity) that continues to exist after the death of the physical body. Belief in souls and spirits can be historically connected with animism, but animism can be a completely naturalistic belief without supernatural meaning.[57]
- *Intentionality Theory:* The modern origins of intentionality theory can be found in Franz Brentano's *act psychology*. In act psychology consciousness is an activity or process rather than a substance or thing—see below. Intentionality theory argues that consciousness is always consciousness *of something*; consciousness always points toward an object of awareness. As such, it is impossible for there to be pure consciousness without some object, fact, or idea being apprehended. In the context of this theory, "intention" is a broader concept than simply purposeful intention, although purposeful intention is a subset: Purpose has an object (a goal or intent). Intention is the broadest sense means "to be of something," or to refer to something. As one expression of intentionality theory, according to the modern philosopher Jean Paul Sartre, there are two forms of being: Being-in-itself and being-for-itself, where

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[55] Heidegger, Martin *Being and Time*, 1927.

[56] Kuhn, pp. 42-43.

[57] Kuhn, pp. 110, 114, 116-117.

consciousness is the latter. “Consciousness is always ‘of something’, and therefore defined in relation to something else.”[58]

- *Functionalism*: Consciousness is what consciousness achieves or does. Consciousness realizes certain functions, such as perceiving, purposefully behaving, remembering, and knowing, and these functional activities and capacities define the essence of consciousness. Aristotle’s concept of the “psyche” was a functionalist definition of the “soul” or mind, and in modern times, William James, among others, supported a functionalist approach to psychology and the study of mind and consciousness. Functional psychology was inspired by act psychology: Viewing mind and consciousness as activities.[59]
- *Representational Theory*: Consciousness is a mode of representation of something. Can be stated as either the function of consciousness is to represent, or consciousness creates models or representations of reality. The *Indirect Theory of Perceptual Consciousness* posits that consciousness creates conscious representations of the external physical world and is directly aware only of these representations. Conscious thought can be viewed as abstract mental representations of reality. This theory is connected with intentionality theory in so far as consciousness viewed as representation entails that consciousness is “of something.”[60]

- *Act versus Content Theories of Consciousness:* In the history of the psychology of consciousness, a basic distinction arose in the late nineteenth/early twentieth century between viewing consciousness as an activity or process versus viewing consciousness as consisting of conscious content, such as sensations, feelings, and ideas. As noted above, act psychology begins with Brentano, whereas as content psychology was exemplified in the “structuralist” approach of Wundt and Titchener, the latter approach attempting through introspection to analyze and describe all the various content elements of consciousness. Act psychology, though, goes back in modern times to Leibnitz, who describes the mind as a set of activities. Illustrative of the content approach to consciousness in early modern times, Hume, in his phenomenalist approach, described the content of experience as “impressions” and “ideas.” The content approach to consciousness in contemporary times can be seen as exemplified in the theory of conscious “qualia,” in which it is proposed that there are a set of distinctive conscious objects or qualities that make up the content of consciousness.[61]
- *Phenomenology of Consciousness*: Although strictly speaking not a theory of consciousness, but rather an approach to the study of consciousness, phenomenology should be included in this review since it has had a significant influence on theorizing regarding the nature of consciousness. Initiated by the

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[58] Sartre, Jean Paul, Being and Nothingness, 1943, and *Jean Paul Sartre, Internet Encyclopedia of Philosophy:* https://iep.utm.edu/sartre-ex/ .

[59] Kuhn, pp. 41-42.

[60] Kuhn, p. 70.

[61] Watson, Robert *The Great Psychologists*, 1997.

contemporary philosopher, Edmund Husserl, who was inspired by Brentano and who would strongly influence Sartre, Heidegger, and the Gestalt psychologists, phenomenology is the disciplined effort to study and describe consciousness as meaningfully experienced and lived from the first person (subjective) point of view without bringing assumptions or inferences about consciousness into the apprehension and description of consciousness. Moreover, phenomenology does not analyze consciousness—as in structuralism—but describes consciousness holistically. The epistemological question is whether (personal) consciousness can be described in a direct non-inferential fashion? Are there raw ("given") facts of consciousness? If so, what are they? This is the goal of phenomenology.[62]

- *Gestalt Holistic Psychology*: Influenced by phenomenology, and in reaction against the analytic approach of structuralism, Gestalt psychologists emphasized that consciousness consists of structured and meaningful wholes that transcend the individual constituents of experience. ("The whole is greater—or different from—the sum of its parts.") The parts of a conscious experience are interactive, rather than simply separate and additive. Consciousness is integrative and relational in its content, forming meaningful configurations, such as figure-ground relations. The Gestalt psychologists applied their holistic and interactive perspective to brain physiology as well as to consciousness; the Gestalt psychologists anticipated contemporary holistic systems thinking.[63]

- *Evolution*: Although evolutionary theory is not directly a theory of consciousness, the concept of evolution can be a central idea in various theories of consciousness. For example, consciousness can be seen as a result of natural evolution (Dennett being one example of this view) and consciousness can be seen as manifesting an evolutionary trajectory or pattern. (Dennett also subscribes to this view.) In the former type of theory, one could argue (though not Dennett) for an *Evolutionary Dualism*, in which consciousness is viewed as a distinct form of reality that emerges in the evolutionary history of the physical universe at some point in time. In general, evolutionary views of consciousness bring a temporal dimension into consideration about consciousness, proposing ideas about the past of consciousness, the future of consciousness, or the direction or trajectory of consciousness through time. (See also Levels of Consciousness section below.)
  - *Evolutionary Materialism:* As the nervous system and the brain evolve in complexity and organization, correspondingly, as a result of this physical evolution, consciousness as a manifestation of the brain has evolved in complexity and organization.
  - *Omega Point Theory*: Consciousness is evolving toward an apex or asymptote, involving a globally integrated level of consciousness, or even a cosmic integrative level of consciousness. In the former case, humanity as a whole realizes a unified collective consciousness, and in the latter case, the universe as a whole realizes a unified cosmic consciousness. Both De Chardin and in the

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[62] *Stanford Encyclopedia of Philosophy*: https://plato.stanford.edu/entries/phenomenology/ .

[63] Koffka, Kurt *Principles of Gestalt Psychology*, 1935 and Kohler, Wolfgang *Gestalt Psychology*, 1947.

latter case, Frank Tipler, subscribe to this theory.[64] The science fiction writer, Olaf Stapledon, described in his novel *Star Maker* the far distant future evolutionary emergence of progressively both a galactic mind and consciousness and a cosmic mind and consciousness.[65]

- *Consciousness-Driven Evolution*: Also associated with De Chardin, the natural process of evolution is being driven by consciousness and creates an ongoing advancement in consciousness. Consciousness is evolution's self-reflectivity, further amplifying the evolutionary process. To paraphrase Julian Huxley "We are nothing else than evolution become conscious of itself." One should note that self-reflectivity is a concept invoked in varied theories of consciousness.[66]
- *Evolutionary Transcendence/Technological Singularity Theory*: Often associated with Ray Kurzweil and the Transhumanists, the view is that once A.I. (computer/artificial intelligence) exceeds human levels of intelligence, a new profoundly different level or type of consciousness will be realized. A.I. consciousness will transcend human consciousness; the future (possibly post-human) evolution of consciousness will be technologically facilitated. This process can be viewed as a natural result of the ongoing evolution of the (informational) complexity in the universe.[67]
- *Multi-Level Evolution of Consciousness*: The Hindu philosopher and Yoga master, Sri Aurobindo, rejecting both the "other-worldliness" of Hindu philosophy and physical/materialist visions of evolution, proposed that human consciousness is evolving through a series of stages/steps leading to the "liberation" of consciousness and eventual unity and connection with the ultimate foundation of all consciousness in Brahman. The physicality of current human existence will be transcended. It is important to note that it is a recurrent theme in human history to believe that consciousness and intelligent mentality will one day evolve beyond the physical body; this view may or may not be associated with a religious or spiritual perspective.[68]
- *Wilber's Integral Theory*: Consciousness has evolved through a series of stages in natural and especially human history—what Wilber describes as a "developmental spectrum of consciousness." Evolution moves from pre-life to ultimate spiritual attainment, in essence, from the separation of individual consciousness from transcendent unified reality in the primordial origins of existence back to a unity of the individual and the transcendent. Wilber in his philosophy attempts to integrate the spiritual perspective on reality with the

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[64] De Chardin, Teilhard, *The Phenomenon of Man*, 1959, and Frank Tipler, *The Physics of Immortality*, 1994.

[65] Lombardo, *Science Fiction: The Evolutionary Mythology of Consciousness, Volume Three* , 2021, pp. 4890-523.

[66] Kuhn, p. 107.

[67] Kurzweil, Ray, *The Singularity is Near*, 2005; Lombardo, *Contemporary Futurist Thought*, 2006, pp. 292-294.

[68] Kuhn, p. 118; Lombardo, *Wisdom, Consciousness, and the Future*, 2011, p. 121.

modern scientific and materialist perspectives. Within recent human history there are many diverse views attempting such a synthesis and reconciliation of the spiritual and the scientific-materialistic.[69]

- *Jaynes' Breakdown in the Bicameral Mind Theory*: A frequently cited evolutionary theory of consciousness, the psychologist Julian Jaynes, based on an examination of ancient texts, proposed that human experience in ancient times (pre 1000 BCE) did not possess modern human consciousness. Human reality was experienced as outer-directed by the voices of gods and goddesses, and as such, humans did not possess a sense of self-responsible volitional control. For Jaynes, consciousness is more than just experience, but a special type of experience involving a sense of volitional self-direction. Humans in ancient times did not possess a conscious self, in the way in which modern human minds do. [70]

- *Emergence Theory:* Consciousness is an emergent reality in nature. Strong emergence, which is opposed to analytic reductionism, contends that even if we understood all the properties and laws at one level of complexity in nature, we could not predict those qualities and laws of an emergent level at a more complex level in the hierarchy of nature.[71]
  - *Emergent (or Evolutionary) Dualism* posits that the universe originated as a physical reality—reality has a materialist foundation—but at some point in time consciousness emerged (came into existence) in connection with sufficiently complex physical systems.This view is dualistic since consciousness—clearly distinguishable from physical matter—appears at some point in time to pop into existence (even if just in the most shallow and dimmest of forms) within a physical world. But why and how does this happen? How can this happen if consciousness is so fundamentally different from anything in the physical world?[72]
  - *Holistic Emergence*: A distinctive version of emergence, which posits that consciousness is a complex holistic reality that emerged in evolutionary history through interaction effects among simpler foundational chemical, biological (and perhaps also ecological) realities. Throughout previous stages in evolution—such as in the atomic, chemical, and biological—more complex and unique realities emerged through the integration and concatenation of parts in the evolutionary hierarchy of nature. Consciousness is a new emergent holistic level of reality in the ongoing self-creative development of progressive holistic levels in nature. See the earlier discussion on the evolutionary hierarchy of nature in Chapter one.
- *Feminist Theories:* There are numerous theories of mind and consciousness published by women authors.[73] Although there is significant diversity among these

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[69] Kuhn, p. 135.

[70] Kuhn, pp. 80-81; Jaynes, Julian *The Origin of Consciousness in the Breakdown of the Bicameral Mind*, 1976.

[71] Kuhn, pp. 42-43.

[72] Kuhn, p. 115; Nagel, Thomas *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False*, 2012.

[73] Lombardo, *Contemporary Futurist Thought*, 2006, pp. 309-310.

authors' views, a few notable recurrent or predominate themes should be mentioned. Riane Eisler has proposed that there are two distinct modes of mentality, culture, and consciousness within human history: Dominator mentality associated more strongly with males, and partnership mentality associated more with women. Although both men and women possess both types of consciousness, dominator consciousness shows up more strongly in men and partnership consciousness shows up more strongly in women. This duality though could (and should) balance out in the future.[74] The psychologist Maureen O'Hara has argued that there are two types of self-consciousness: An individualist egocentric sense of self, associated more with male and Western consciousness, and a relational socio-centric sense of self, associated more with female and Eastern consciousness.[75] In general, women authors emphasize a "participatory immersive" theory of consciousness and the self as a counter-balance to visions of consciousness and the self that highlight a detached vision of consciousness and self, supported primarily by male authors.

- *Integrated Information Theory (IIT):* Although the next two theories, IIT and Global Workspace Theory, contain elements of both materialism and dualism, I list and describe them separately since both theories are distinctively well-known in contemporary times.

  According to Kuhn, IIT is one of the most influential and provocative contemporary theories of consciousness. According to Kuhn, IIT presents a theory of *what consciousness is.* IIT postulates that all states of consciousness are complex realities, involving both multiple simultaneous differentiations (of sights, sounds, emotions, and thoughts) within such states, and a unifying integration of such differentiations within each conscious experience. Integrated states of consciousness depend upon integrated information through causal interactivity in the physical system (areas of the brain) supporting these experiential states.[76]

  As an alternative way to describe this theory, IIT starts from a phenomenology of experience (an essential description of the fundamentals of consciousness). The five essential features of consciousness postulated are: Consciousness exists as an intrinsic reality (consciousness is real); consciousness has structure; each conscious experience is unique; each conscious experience is integrated and unified; and each conscious experience has a distinctive border, excluding other conscious experiences. But although starting from a fundamental description of consciousness, IIT proposes that a physical system is needed to account for these basic features or properties of consciousness, and consciousness is identical with a physical system having these properties.[77]

  Hence, although IIT asserts that consciousness is a distinctive reality, it also seems to imply some type of Identity Theory.

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[74] Eisler, R. *The Chalice and the Blade* (1987) and *Sacred Pleasure* (1995).

[75] Lombardo, *Future Consciousness*, 2017, p. 676.

[76] Koch, Christof, *Consciousness,* 2012; Tononi, Giulio. *PHI: A Voyage from the Brain to the Soul*, 2012.

[77] Kuhn, pp. 97-99; https://iep.utm.edu/integrated-information-theory-of-consciousness/.

- *Global Workspace Theory:* Another well-known contemporary theory, this theory is closely associated with the work of Bernard Baars. Kuhn categorizes it as a "Materialist" theory[78], but the theory clearly highlights certain basic features of consciousness, as well as physiological processes. According to Baars, consciousness metaphorically is like a theater, in which an attention-selection process brings meaningful items—among many competing and diverse unconscious elements vying for attention—into the "spotlight" of attention or the conscious theatre, producing both selective integration of the totality of information impinging on the human/animal, and allowing for the control of the totality of psychological-physiological processes from a central directive agency. Consciousness has both vast access and vast impact, but at any given moment limited focus. The integrative process of consciousness is anatomically-physiologically facilitated by a complex integrative multi-looping integration between the thalamus and various areas of the cerebral cortex. The "theater of consciousness" involves a creative selective author, a participatory actor, and an impacted and influenced audience in the dynamics and structure of experience.[79] In some respects, this view is similar to the "Pandemonium" view of consciousness proposed by the contemporary philosopher Daniel Dennett.[80]
- *Dual Modes of Consciousness Theories*: There are diverse theories postulating two distinct—often viewed as complementary—modes of consciousness. The general idea of dual-complementary modes or frameworks of thinking and consciousness can be traced back to the Chinese-Taoist complementarity of Yin and Yang—of male/active/initiating and female/passive/receptive modes of consciousness.

  In modern times, there are numerous types of theories of dual complementary modes of consciousness. Eisler's "dominance versus partnership" modes of consciousness and self, described above, is one example.

  Other examples include "Right Cerebral Hemispheric versus Left Cerebral Hemispheric Theory," in which it is hypothesized that each of the two major cerebral hemispheres supports a set of complementary psychological processes.[81]

  Another dual mode perspective is the proposed analytic versus holistic modes of consciousness, sometimes associated with Western versus Eastern modes of consciousness, as well as the left versus right cerebral hemispheres.[82]

  Still another is the proposed duality of "hierarchal" versus "network" modes of consciousness, again often associated with left versus right cerebral hemispheric processing.

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[78] Kuhn, p. 48.

[79] Bernard Baars, *In the Theater of Consciousness,* 1997; Global Workspace Theory: https://en.wikipedia.org/wiki/Global_workspace_theory .

[80] Dennett, Daniel, *Consciousness Explained*, 1991.

[81] Hampden-Turner, Charles, *Maps of the Mind*, 1981, pp. 86-89.

[82] Nisbett, Richard *The Geography of Thought*, 2003.

"I" (self-oriented) versus the world (other-oriented) is another dual mode perspective on consciousness, aligning with the dual capacities of proprioception versus perception.

Moreover, perception/understanding versus behavior/action could be proposed as another dual mode perspective on consciousness, the former being conscious knowledge and the latter being conscious doing. These two modes of consciousness clearly mesh and work together in our experiential reality.

Another dual mode perspective is the intuitive-instantaneous mode of understanding versus the logical-sequential mode of conscious understanding. This distinction has also been associated with right versus left hemispheric consciousness.

As a related perspective, there is the visual (image-like) versus linguistic (statement-like) distinction as two different modes of consciousness.[83]

Finally, perhaps the physicalist body-centered perspective on reality (materialism) and the consciousness mental-centered perspective on reality (idealism) are two complementary modes of consciousness? Indeed, I would refer to these two perspectives as different "paradigms of consciousness."

The dual modes of consciousness perspective can be itself divided into a quartet of primary psychological functions, such as Carl Jung's thinking and feeling, and sensation and intuition consciousness.[84] Another well-known quartet of modes of consciousness, involving in this case a second split or divide of the self-oriented versus other-oriented modes of consciousness, is Ken Wilber's four quadrants: The individual interior ("I"); the collective interior ("We"); the individual exterior ("It"); and the collective exterior ("Its"). Each of these four perspectives on reality represents a distinctive mode of consciousness or "stream of experience."[85]

Returning to the Taoist Yin-Yang model of consciousness, in all the above cases, frequently it is argued that a fully functioning and ideal state of consciousness involves a balancing of whatever complementary modes are being described.

- *The Romantic/Dionysian/Emotional versus the Rational/Apollonian/Cognitive:* One especially significant dual mode perspective is to fundamentally distinguish between emotional/affective consciousness and cognitive/intellectual consciousness as two different ways to experience reality. This distinction or duality of perspective goes back to ancient/early modern times—the Dionysian versus Apollonian in ancient Greek culture—and the Western Enlightenment versus Gothic/Romantic philosophical movements in the nineteenth century. In contemporary times, Antonio Damasio has postulated that self-consciousness begins with the "I feel, therefore I am" insight, being more fundamental than Descartes' insight "I think, therefore I am." Feeling is more basic to consciousness, rather than thought or cognition. Damasio though distinguishes

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[83] Shlain, Leonard *The Alphabet versus the Goddess*, 1998.

[84] Lombardo, *Future Consciousness*, 2017, pp. 537-540; Hampden-Turner, Charles, *Maps of the Mind*, 1981.

[85] Combs, Allan *Consciousness Explained Better*, 2009.

between proprioceptual "feeling" (as fundamental) and emotional affect.[86] All in all, the argument has repeatedly been presented that consciousness involves both thought and emotion and neither should be minimized in thinking about the holistic nature of consciousness.

- *McGilchrist Dual Hemispheric Theory*: McGilchrist, introduced above, has proposed that there are two different worlds consciously experienced: A "Gestalt" holistic world experience, associated with the right cerebral hemisphere, and an analytic world of things and distinctions associated with the left hemisphere. Right hemispheric consciousness is a "world presented;" left hemispheric consciousness is a "world represented." These two modes of consciousness normally integrate into our singular consciousness. But in all cases of consciousness, knowing is always immersive; there is no known/experienced world, holistic or analytic, independent of us the knower.
- *Language and Consciousness*: In ways connected to the above dual mode theories, it has been proposed that language (once acquired) powerfully shapes consciousness; pre-linguistic consciousness in human infants and animals is qualitatively and structurally very different than language empowered consciousness. As an extreme version of this view, it has been proposed that consciousness requires language to be realized.[87]

- *Levels of Consciousness Theories:* A popular view, taking a variety of different forms, is that consciousness develops through a series of progressively more advanced states. This developmental perspective has been applied to: The evolution of consciousness across the entire panorama of life, from single-cell life forms to humans; the historical evolution of consciousness from primitive to contemporary humans; and the development of mind and consciousness from human infancy to mature human adulthood.
  - *Evolution of Animal Consciousness:* In the first case (from above), a common view is that animal consciousness in its most primitive form begins with sensory, visceral, appetitive, instinctual, and behavioral awareness, followed by the emergence of emotional and purposeful (goal-directed desires) consciousness, followed by (or coupled with) the development of memory and learning consciousness, and finally with humans, bringing in abstract thinking, imagination, linguistic consciousness, moral consciousness, and cultural consciousness. Somewhere in the developmental process self-consciousness emerges as well. As I discuss in this book, in several respects I would modify this commonly accepted view of the evolution of animal to human consciousness. But I should note that research and thinking into the evolution of animal consciousness can have a valuable role to play in understanding the nature of consciousness: An evolutionary view of consciousness entails that it is highly illuminating, if not necessary, to consider how consciousness evolved in life, if one is to adequately understand the nature of consciousness. The evolution of a reality informs us regarding the nature of that reality.

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[86] Kuhn, pp. 60-63; Damasio, Antonio, *The Feeling of What Happens*, 1999.

[87] Kuhn, pp. 79 and 81.

- *Historical Evolution of Human Consciousness*: Jean Gebser proposed that human consciousness, from early prehistoric to modern times, developed through "archaic, magic, mythic, mental, and integral" levels of experience and understanding. [88] Another model by Merlin Donald divides the historical evolution of human consciousness into the successive stages of "episodic, mimetic, mythic, and theoretic" levels of understanding. There are still many other historical theories of the evolutionary stages of human consciousness. (Recall Jaynes' Theory above.) Pulling together a number of these theories, the following stages could be proposed: "Archaic, magical, mystical, mythological, traditional, rational/ abstract, postmodern, and integral."[89]
- *Individual Human Development*: As one of the most well-known theories of the cognitive development of humans from infancy to adulthood, the psychologist Jean Piaget proposed four successive levels: Sensorimotor, Preoperational, Concrete Operational, and Formal Operational. Humans at each successive level consciously experience themselves and the world differently. There is ongoing debate and multiple theories regarding whether there are levels of consciousness more advanced beyond Piaget's proposed final stage.[90] There are other influential theories of the development of consciousness from infancy through adulthood, including Erik Erikson's Stages of Psychosocial Development, which encompasses infancy through old age.
- *Maslow's Hierarchy of Motives*: Although strictly speaking not a developmental or evolutionary theory of consciousness, the psychologist Abraham Maslow's famous "Hierarchy of Motives (Needs)" theory provides a comprehensive vision of how human consciousness should ideally develop in an individual across the life span from the most primordial level to the most advanced level. The proposed hierarchy, starting with the most primitive and fundamental is: Physiological Needs (food, water, sleep, etc.); Safety and Security Needs; Love and Belonging; Self-Esteem Needs; and Self-Actualization (morality, purpose, creativity, and meaning). Consciousness transforms as the focus of a person's motives and values evolve; of particular note, the lower motives are consciously focused on eliminating deficiencies, whereas the higher motives are consciously focused on realizing growth (negative versus positive motivational consciousness).
- *Theories of Consciousness and the Unconscious:* A basic two-level distinction between consciousness and the unconscious is expressed in a variety of different forms in diverse psychological and philosophical theories. Depending on the particular theory adopting this fundamental two-level conceptualization of the mind, unconscious psychological processes in various ways—cognitively, emotionally, and motivationally—influence the structure and dynamics of consciousness. Perhaps the most famous theories adopting this two-level model are those of Sigmund Freud and Carl Jung, who focused on how the unconscious

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[88] Combs, Allan *Consciousness Explained Better*, pp. 61-76.

[89] Lombardo, *Essays on the Future of Psychology and Consciousness*, pp. 215-229.

[90] Combs, Allan *Consciousness Explained Better*, pp. 21-34.

powerfully impacts the conscious human self (the ego), human motivational and emotional consciousness, conscious values, and conscious psychopathologies. Freud and Jung's theories of the interplay of consciousness and the unconscious (and of the many personality theorists who were influenced by them) are highly complex and the literature and references on their ideas are immense—a universe unto itself.[91] But the distinction of consciousness and the unconscious (unconscious psychological processes) can also be found in cognitive and philosophical theories of consciousness, such as in Minsky, Dennett, and Baars; for example the postulation of unconscious multiple and parallel psychological processes generating singular, sequential, and integrated consciousness. In general, the meta-theory is that there is a unconscious level (below consciousness) of psychological structures, processes, and desires/impulses that strongly impacts the creation and make-up of consciousness. Consciousness can only be adequately understood by bringing into the picture a psychological level existing below consciousness.

- *Transparency Theory:* This theory can take different forms. Essentially, it is proposed that consciousness is transparent (or a transparent medium) revealing (or interfacing with) the known world and objects of understanding; consciousness is not a thing or substance, and it is not an isolated, occluding, opaque, or separate reality. Consciousness is open to the world.[92] Combs suggests, in line with Hindu philosophy, that consciousness is pure emptiness.[93] The Western existentialist philosopher Sartre proposed that consciousness is "nothingness," existing but possessing no fundamental essence.[94] This theory could be associated with Gibson's "Direct Realist Theory of Perception;" our perceptual consciousness directly interfaces with and experiences the external physical world; perceptual consciousness is not a separate representation of the world, but a revealing of the world.[95] The transparency theory could be conceptualized as selective or restrictive; consciousness is only open and transparent to selected and limited features of the world.
- *Consciousness as a Self-Constructing Reality*: Following from the scientific idea of self-organizing open systems and the concept of "autopoiesis," connected with the Embodied/Extended Mind Theory reviewed above, consciousness (in some manner or form) creates itself; consciousness is a "bootstrap" phenomenon.[96] As a particular

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[91] Hampden-Turner, Charles *Maps of the Mind*, 1981, pp. 40-47, 213-214; Hergenhahn, B. R. & Olson, M. *An Introduction to Theories of Personality*, 2003.

[92] Kuhn, p. 76;

[93] Combs, Interview on *The Nature and Future of Consciousness*: https://www.youtube.com/watch?v=ILfRxPyYf7A&list=PLIvBA8u8-18SoW-MzHhUjSwiWWi9EzN-3&index=20&t=3s .

[94] Sartre, J. P. *Being and Nothingness*, 1943.

[95] Kuhn, p. 68.

[96] Kuhn, p. 136;

example of this viewpoint, the conscious self can be described as a self-constructing reality; the conscious self invents itself.[97]

- *Computational and Information Theories of Mind and Consciousness:* Theories of mind and consciousness informed and inspired by the concepts of information, computers, robotics, and artificial intelligence [98] include:
  - *Informational Formalism*: Associated with writings of Ray Kurzweil, Frank Tipler, and others, the theory is that consciousness and/or mind, and even the conscious self, can be completely described in terms of information (structural differentiations and relations among these differentiations) and information processing. As such, any type of system that contained the same information and information processing activities of a conscious being would be conscious, and in fact the same conscious being.[99] This view leads to various philosophical puzzles and perplexities regarding the nature of personal identity, such as explored in science fiction: See Robert Sawyer's *Mind Scan* and Charles Stross' *Accelerando*.
  - *AI Approach to Consciousness*: The theory is that if an AI is able to do whatever conscious beings can do, then it is conscious. This view is referred to as "Computational Functionalism." Consciousness is what consciousness does. Using the thought experiment of "The Chinese Tea Room," the contemporary philosopher John Searle attempts to refute this argument. The possibility that an AI can potentially achieve consciousness has been debated, but until we understand the essential real world conditions for consciousness, we can not reject out-of-hand this possibility.[100] Kuhn notes though that answering this question, pro or con, depends upon which theory of consciousness (for example, idealism, materialism, or dualism) one supports. Also of significant interest within this perspective are the questions: Would a future AI that realized consciousness possess a different form of consciousness than current conscious biological beings, such as ourselves? Would such a possible AI form of consciousness broaden our understanding regarding the general parameters and possibilities of consciousness?[101]
  - *Consciousness as Generated Simulation*: The theory has been proposed that our consciousness and the world that we consciously experience is a virtual reality simulation. At the very least, our real life consciousness is indistinguishable from such a hypothetical simulation. Although, based on our own experiences, we can understand how a perceptual world can be simulated and experienced within our consciousness, what would it mean for a consciousness to be generated and simulated along with the virtual world that the virtual person is experiencing? This

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[97] Kuhn, p. 74; Walter Truett Anderson, *The Future of the Self*, 1997.

[98] Kuhn, pp. 55-58.

[99] R. Kurzweil, *The Singularity is* Near, 2005, and Frank Tipler, *The Physics of Immortality*, 1994.

[100] Lombardo, *Essays on the Future of Psychology and Consciousness*, pp. 122-133.

[101] Kuhn, pp. 150-152.

idea has been explored in Greg Egan's science fiction novel of the future, *Diaspora*.[102]

- *Virtual Immortality or Indefinitely Extended Mortality*: Kurzweil and others have proposed that our personal consciousness could be transferred into a computer/robotic body, assuming a sufficiently complex AI and a sufficiently detailed informational analysis of our conscious minds and/or brains. Is this possible? And if it is achievable, what would it tell us about the nature of consciousness, or our personalized unique sense of a conscious self? Different theories of consciousness would have different implications (or answers) regarding this possibility.[103] In science fiction, in the novel *Accelerando* by Charles Stross, multiple creations of the same conscious self are implanted in distinct physical bodies, and in the story "The Shadow out of Time" by H. P. Lovecraft, distinctive conscious selves exchange physical bodies.[104]
- *Cyborg Consciousness*: As a plausible future possibility, a higher form of consciousness could be realized by the intimate synthesis of biological and technological systems. Could machine and biological consciousness be synthesized? What does this mean regarding the nature of consciousness?[105] This possibility is explored in Leckie's *Ancillary Justice* and Harrison's *Light*, both science fiction novels.[106] We could argue though that our current mode of consciousness is already cyborg in nature, since our conscious functioning is so intertwined with supporting technologies. See Clark's *Extended Mind Theory* above.

- *Mathematical Theories of Consciousness:* Ancient Pythagorean philosophy postulated that all of reality had a fundamental mathematical form. In modern scientific thought it has been proposed that mathematics is the basic or universal language of all of nature. The contemporary writer Max Tegmark has proposed that all of reality is fundamentally mathematical. Hence, it is plausible to propose that consciousness has a, yet to be discovered, foundational mathematical structure or reality. Perhaps there is a mathematical formulation that theoretically unites physical reality with consciousness. All of these views are historically and theoretically connected with Plato's theory that ultimate reality is a set of integrated "abstract forms."[107]

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[102] Kuhn, pp. 140-141; Greg Egan, *Diaspora*, 1997.

[103] Kuhn, pp. 152-153.

[104] Lombardo, *The Evolution of Science Fiction Webinar Series*: https://www.youtube.com/playlist?list=PLIvBA8u8-18QzwxllJrzh6OAKVAUYfNmS .

[105] Clark, Andy, *Natural Born Cyborgs*, 2003; Lombardo, *Wisdom, Consciousness, and the Future*, 2011, pp. 363-378.

[106] Lombardo, *The Evolution of Science Fiction Webinar Series*: https://www.youtube.com/playlist?list=PLIvBA8u8-18QzwxllJrzh6OAKVAUYfNmS .

[107] Kuhn, pp. 58-59, 108.

- *Time-Based Theories of Consciousness:* As a general hypothesis, one can propose that the experience of time is central to the reality of consciousness; consciousness has a fundamental temporal sequential flow and this temporal flow is directional: "The psychological arrow of time." Moreover, the flowing experience of the present is integrated with consciousness of the past and consciousness of the future. Hence, consciousness is a process, integrating in the ongoing moment past, present, and the future. William James described the flow of consciousness as "flights" and intermittent moments of "perching."
  - *Top-Down Predictive Theories*: The brain, mind, and consciousness can be viewed as anticipatory and predictive processes. For example, in conscious perception the human mind is not so much receiving information from the outside world, as it is anticipating (predicting) what is to come; analogously the brain sends out from its central mechanisms (top-down) anticipatory impulses in perception for the purpose of "matching" up with whatever signals are coming in from the outside. Consciousness and brain function is inherently future directed.[108]
  - *Future Consciousness Theory*: The most empowering capacity of human consciousness—to some limited degree manifested in other animals—is future consciousness, defined as the total set of processes and modes of experience that pertain to the future. Future consciousness includes both cognitive and emotional anticipation and purposeful goal setting, planning, and behavior. Future consciousness generates purposeful evolution.[109]
  - *The Evolution of Temporality and Temporal Consciousness*: The philosopher of time, J. T. Fraser, proposed an evolutionary hierarchy of increasingly complex levels of temporality (time), which have been manifested as an evolving series of "*Umwelts*." The term "Umwelt" can be translated as the "world as perceived and acted upon" by a (conscious) being or animal; it is an ecological notion bringing together the sensitivity and responsiveness of a being with the aligned world within which it exists. Hence, consciousness evolves across time through a series of increasingly complex "Umwelt." It is important to highlight that the form of time/temporality across the evolution of Umvelts evolves in complexity.[110]
  - *The Expansion of the Temporality of Consciousness*: As imagined in the philosopher-science fiction writer Olaf Stapledon and his book *Last and First Men*, the temporal reach of human consciousness may not be fixed but could evolve in the future. Human consciousness may be able to move back and forth through time, visiting the past and past conscious beings. As explored in other science fiction stories, experienced time could become circular, with no sense of a beginning or end, such as described in Robert Heinlein's "All You Zombies." Sounding rather mystical in its expression, all the moments on the timeline of an

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[108] Kuhn, pp. 59-61; Lombardo, *The Evolution of Future Consciousness*, 2006, pp. 95-96. .

[109] Lombardo, *Future Consciousness,* 2017.

[110] Fraser, J. T., *Time as Conflict*, 1978, pp. 19-26.

individual consciousness may be continuously accessible and/or omnipresent, such as in Kurt Vonnegut's *Slaughter-House Five*.[111]

- *Psi/Psychic and Altered States Studies and Theories*: Kuhn devotes a section to the relevance to consciousness studies of psychic research and theory and altered/ psychedelic states theory and research.[112] It is also noteworthy that Jeff Mishlove and his *New Thinking Allowed Foundation* has hundreds of video interviews on these topics, highlighting parapsychology.[113] This area of study, thinking, and research discussed by Kuhn (and Mishlove more extensively) includes telepathy, clairvoyance, telekinesis, other forms of extra-sensory perception, out-of-body experiences, near death and post death experiences, and communication with the dead. Regarding the popular belief that consciousness continues after physical death, Mishlove notes that the postmortem continuation of consciousness is universal across all cultures and periods of history. Also addressed by both Kuhn and Mishlove are altered (unusual) states of consciousness due to the ingestion of psychedelic substances.

  One key theme discussed throughout psi theory and research is the question of whether the idea of non-physical consciousness has validity. A frequent argument is that if psi phenomena is real, then the materialist-based theory of consciousness must be mistaken, or at least incomplete. Kuhn seems to concur that psi phenomenon, if real, would seriously challenge the credibility of materialism. One popular view among psi investigators is "Non-Local Consciousness;" consciousness is not localized in spatially positioned physical bodies; rather, as Radin, among others suggests, consciousness pervades the cosmos as an underlying and unifying "ocean of consciousness." The survival of consciousness after death, connected with the "Soul Theory" discussed earlier, would also seriously challenge the materialist theory of consciousness.

  Both Kuhn and Mishlove consider whether chemically induced psychedelic experience has relevance to understanding the nature of consciousness. What do extraordinary states of consciousness tell us about consciousness? In general, may our beliefs about consciousness be too limited, being anchored to everyday normal states of experience?

  As a general point, there are numerous science fiction stories that envision humans possessing various psychic powers (now or in the future) and speculate on how consciousness would be different in such types of minds: See Stapledon, van Vogt, and Kuttner as examples.
- *Mystery of Matter Perspective*: The twentieth century philosopher of science, Herbert Feigl, and the well-known contemporary writer, Noam Chomsky, have proposed that the puzzle regarding the relationship between consciousness and the physical universe may reflect an inadequate understanding of the nature of physical matter. We may need to expand our conception of physical matter; new laws or principles of

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[111] Lombardo, *The Evolution of Science Fiction Webinar Series*: https://www.youtube.com/playlist?list=PLIvBA8u8-18QzwxllJrzh6OAKVAUYfNmS .

[112] Kuhn, pp. 131-143.

[113] *New Thinking Allowed Foundation*: https://www.newthinkingallowed.org/

physics may be required. This perspective shifts the mystery of consciousness from consciousness itself to the nature of physicality.[114]

- *Mysterianism (The Incomprehensibility Theory of Consciousness)*: Originally proposed by the philosopher Colin McGinn, it may be the case that the human mind is incapable of ever understanding consciousness, or the consciousness-physical reality connection. McGinn, though, is a naturalist and rejects the idea of a supernatural explanation of consciousness, such as a God.[115] Perhaps the human conscious mind needs to evolve or jump to a higher level of intelligence or more advanced mindset/set of conceptual categories to understand consciousness? Perhaps we must move above consciousness to understand it? Perhaps if some hypothetical advanced enlightened mind provided an explanation of consciousness we would be unable to understand it? As a general thesis or argument, there is something fundamentally missing in our understanding of consciousness and the physical world, and we may or may not be able to conceptualize and determine what that missing factor is.[116]
  - *Harris' Theory*: The contemporary writer Sam Harris has argued that we possess no credible explanation (in spite of the various theories proposed throughout history) of how consciousness could emerge from, or be the result of physical processes. The two realities seem incommensurably different; hence, Harris is arguing for the unsolvable nature of the "Hard Problem." Indeed, Harris argues that if we examine the physical world we perceive around us, we perceive no external evidence for consciousness. We only believe in the reality of consciousness because of our inner personal perspective on reality.[117]
  - *Nagel's Theory*: The philosopher Thomas Nagel has argued that both materialism and theism are faulty explanations of reality in general and consciousness in particular. There must be a naturalist alternative—yet to be uncovered—to account for mind and consciousness. This new account must acknowledge the reality of subjective (first person) experience; it can not be exclusively a third person account.[118]
- *Alien/Non-Human Consciousness Perspectives*: As suggested and informed by speculative science fiction scenarios, do the imagined unusual possibilities of alien consciousness broaden or deepen our understanding of consciousness? Thought-provoking examples from science fiction include (as just a sample) planetary consciousness (as in *Solaris* and "Seedling of Mars"), pack minds from *A Fire on the Deep*, arachnid and octopus minds in *Children of Time* and *Children of Ruin*, circular time aliens in "The Story of Your Life," Stapledon's symbiotic and swarm minds in his various novels, and the multiple time flow minds in Meiville's *Embassytown*. It seems

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[114] Feigl, H. *The Mental and the Physical*, 1967; Kuhn, pp. 79 and 151.

[115] Kuhn, p. 144. It should be noted that McGinn did not coin the term "mysterianism;" other writers invented the term to describe McGinn's point of view.

[116] Kuhn, p. 46.

[117] Kuhn, pp. 144-145.

[118] Kuhn, pp. 143-144.

highly plausible that our conceptions of consciousness, as well as physical reality, are human-centric, and as such, contact with intelligent and communicative alien consciousness would be a philosophical revelation.[119]

- *Future of Consciousness Perspectives*: Just as science fiction provides visions of alien intelligence and consciousness, it also provides numerous examples of possible future developments of human consciousness. Indeed there are probably as many visions of future human conscious minds as there are of alien forms of consciousness and intelligence. For both alien and future mind scenarios, the visions presented are "thought experiments" of hypothetical realities, but thought experiments are frequently the source of insight in both science and philosophy. Some noteworthy examples of future mind/future of consciousness stories include Wells' *A Modern Utopia* and *Men Like Gods*, Wright's *The Amphibians,* Stapledon's *Last and First Men, Odd John,* and *Star Maker*, van Vogt's *Slan*, Kuttner's *Mutant* series, Clarke's *Childhood's End*, Egan's *Diaspora* and *Schild's Ladder*, Greg Bear's *Darwin's Radio*, Sterling's *Schismatrix*, Chiang's "Understand," and Silverberg's *Son of Man*. Science fiction future of consciousness perspectives often speculate on human-machine integrations, robotic-computer minds, and the emergence of psychic powers. It is worth noting that turning to visions of the future of consciousness could arguably enlighten us regarding the nature of consciousness. As such, although I situate my discussion of the nature of consciousness (including theories of consciousness) before considering the future of consciousness, it may be that the latter topic needs to be addressed and brought into the mind space of speculation and reflection before a satisfactory understanding of the former topic can be achieved.[120]

In summary, there are a highly diverse set of views on consciousness and its relationship with the physical body and brain, the physical world and the cosmos, and the fundamental foundations of reality. In delving into the nature of consciousness the entirety of existence becomes an important part of the inquiry. A whole book could be written on the immense number of theories of consciousness proposed through the ages. Kuhn's article, in fact, is book length, and he only scratches the surface of deep history. But I do think in the above review I have highlighted many of the most well-known and influential theories, and as such, the list does provide a general outline of the "mind-space" of human thinking—of distinctive and noteworthy perspectives—regarding the nature of consciousness and its relationship to the basic fabric and make-up of reality, including physical reality. The review provides a mental geography for orienting and informing this inquiry. Many of views bring up key ideas that I believe are provocative and illuminating and worth keeping in mind as we move through this chapter constructing an ecological and evolutionary theory of the nature of consciousness.

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[119] Lombardo, *The Evolution of Science Fiction Webinar Series*: https://www.youtube.com/playlist?list=PLIvBA8u8-18QzwxllJrzh6OAKVAUYfNmS .

[120] Lombardo, *The Evolution of Science Fiction Webinar Series*: https://www.youtube.com/playlist?list=PLIvBA8u8-18QzwxllJrzh6OAKVAUYfNmS .