

Eyeballs, Circles and Rotations: Use of Scientific Metaphors in Emerson's *Nature* and *The Over-Soul*

Saurabh Ranjan Baral

Department of Language and Literature, Singhania University, Rajasthan, India

Email address:

saurabhbaral@ymail.com

To cite this article:

Saurabh Ranjan Baral. Eyeballs, Circles and Rotations: Use of Scientific Metaphors in Emerson's *Nature* and *The Over-Soul*. *English Language, Literature & Culture*. Vol. 1, No. 4, 2016, pp. 40-48. doi: 10.11648/j.ellc.20160104.11

Received: August 31, 2016; **Accepted:** November 16, 2016; **Published:** December 17, 2016

Abstract: The centrality of science to Ralph Waldo Emerson's inherently transcendental way of comprehending the universal macrocosm and microcosm is evident. Transcendental essays of his abound in scientific metaphors, which still remain un-revisited in terms of their functions. This paper ventures examining them from the cognitive perspectives of the latest monolithic developments of conceptual approaches to metaphorology. Hence upon realization of the advent of a new cognitive paradigm created by science in the mid-late twentieth century, long after the death of Emerson, this paper throughout applies the idea of Experientialist Philosophy of Metaphor to offer an experientialist account of Emerson's use of metaphor in his two essays, "Nature" and "The Over-Soul". This exposition reflects that Emerson's use of scientific metaphors helped him to develop what the author calls "scientific idealism" which subsequently led him to transcendentalism. The paper posits that Emerson gave a cognitive twist to the scientific truth and provided a new order to the latter in his move to justify transcendental ideals surrounding, human beings, nature and God and their interrelationship. In so doing he appears to have exhibited the synthesis of reason and understanding. In other words, his use of metaphors is neither strictly objective nor subjective, but secondarily experiential, which involves union of embodied reasoning and observation, characteristic of scientific epistemology in general and Johnsonian-Lakoffian Experientialist Philosophy in particular. The significance of this study lies in its revelation of new dimension of truth and reality as elucidated by his use of scientific metaphors. This exposition attaches novelty at a time when cognitive metaphor has been immensely considered to play a significant role in cognizing "Nature" and the place of man in it.

Keywords: Experientialist Philosophy, Cognitive Metaphor, Imaginative Rationality, Transcendentalism, Source-Path-Goal Image-Schema

1. Introduction

Ralph Waldo Emerson (1802-1883), an American poet-diviner had risen above the bohemian conventions of his contemporary time. Needless to say, Transcendentalism, or American Transcendentalism was influenced by Romanticism and post-Kantian idealism, one of the major exponents of which was Ralph Waldo Emerson. Though a spiritual movement with religious fervor in the beginning, transcendental essays of his abound in scientific metaphors, which still remain un-revisited in terms of their rationale and methodology. Critiques have undoubtedly portrayed him as a naturalist and a mystic. Alongside, volumes of his works also exhibit interesting but complex impressions of contemporary science in his works. In a way, his ideals of

transcendentalism are not the lone factors to cast him as a mystic. Enigmatic treatment of various scientific phenomena through metaphors in his works also speaks of his mysticism. Exploration of the ways in which his façade of transcendental ideals is formed is the main purpose of this paper. In Laura Dassow Walls's view, Emerson was apprehensive of chaos and fragmentation and resulting meaninglessness of the world, so in quest of forming a theory of nature, he wanted a marriage of mind and nature by creative reason in a hope to make the world "whole" once again [1]. This motif helped to establish objective truth characteristic of natural science that took America to the path of modernization [1]. The author makes a point that Emersonian transcendental idealism was not a mere work of imagination and intuition alone as with other poets' idealism. It was, rather, due to the "scientific idealism" (*parenthesis mine*) that could transform the pre-

existent America into a scientifically modern, sophisticated and secular epitome of the world. Walls intuit that poetry is the expression of truth and science its vehicle. In my premise, metaphor is the instrument of that vehicle. Since Law of Nature govern both, Emerson could not help saying "the whole of nature is a matter of the human mind" Citing from the "Complete works of RW Emerson, edited by Robert E. Spiller and published by Cambridge: HUP, 1971-" Walls notes that the working concepts of the 19th century science – polarity, magnetism, Newtonian Optics, chemical affinity, electrical circulation, the balance of nature, geologically deep time anatomical correlation of parts, physical geography – influenced Emerson so intensely these concepts got anchored in his literary works figuratively, as they were overshadowed literally [1]. Indisputably, such metaphorical superimposition of scientific concepts found in Emersonian essays would certainly overshadow many of the scientific phenomena of the time. Therefore, it becomes sensible to unearth his philosophy of the hidden truth about epistemology of science and spiritualism, with metaphor as a connecting agent. This forms one of the motifs of this paper.

Well aware of natural philosophy (or physics), chemistry, geology, botany, and comparative anatomy, as he was, Emerson's encounter with the Paris Museum of Natural History, posed him to experience an intense revelation and allowed him to declare, "I will be a naturalist." Walls and Klein both hold that his series of lectures on natural science back in USA formed the basis for his first publication, *Nature* (1836), and his writings ever after reflected his great affinity for science, particularly the natural science [1, 2]. Science was crucial to Emerson's development, particularly during the pre-*Nature* period of 1830-1833. Emerson, during this period, was exploring Kant's synthetic elements of understanding and reason as Kant was a transcendentalist too. This search was inevitable for Emerson because he was, unlike Kant, not only infatuated by science but also overwhelmingly driven by spiritual ideals surrounding nature. In the clutch of both the scientific and spiritual principles, Emerson aspired to cognize and describe the correlation between the dominion of understanding and reason, which involved the reconciliation between 'imagination and intuition' and 'logic and reasoning' as part of striking the balance between materialism and spiritualism. In *Nature*, Emerson justifies this correlation as: "... the lover of nature is he whose inward and outward senses are still truly adjusted to each other; who has retained the spirit of infancy even into the era of manhood. His intercourse with heaven and earth becomes part of his daily food" [3, p. 9]. However, it is not clear why Emerson wrote about *Nature* and other essays the way he did; in what ways he used metaphor scientifically and how he organized imagination and reason to enrich and elaborate his philosophies about nature, mind and Supreme Soul. Many critics and researchers might have intuited that Emerson was an experientialist in his ability to reach reality through metaphor, but have not examined it thoroughly. This paper, upon realization of the advent of a new paradigm created by cognitive science about

one hundred years after the death of Emerson, ventures to recruit the idea of Experientialist Philosophy of Metaphor to offer a scientific-cognitive account of Emerson's use of metaphor in his two essays, "Nature" and "The Over-Soul". Therefore, this paper uses the lens of experientialist philosophy of metaphor as propounded by Mark Johnson and George Lakoff in their seminal book "metaphor we live by" [4] and further elaborated in their another work "Experientialist philosophy: Philosophy in the age of cognitive science" [5]. The significance and rationality of the experientialist approach that I have chosen lies in its being not only revolutionary against the formalist way of seeing the world by the Western analytic philosophers and scientists but also relevant to Emersonian transcendentalism. The author deems it a necessity to address issues in a bit lengthy stretch to allow justification of concepts, statements and ideas surrounding the trajectory of science, naturalism and metaphor while undertaking such an interdisciplinary project as this.

2. Cognitive Framework

According to [4], "metaphor is pervasive in everyday life, not just in language but in thought and action, and our conceptual system is basically metaphorical". Hence metaphor helps us understand or conceptualize the world. As referenced, thought is primary where as language is secondary; our mind is not independent, it is embodied; our reason and imagination are also embodied because [4-6]. These paradigmatic claims have not had very much influence on analytical philosophers as the latter held the deterministic and reductionist views of the world. But they have been widely embraced by a number of people in other fields. Lakoff and Johnson [4] critically argue against the conventional view of metaphor as "a device of poetic imagination" and "the rhetorical flourish". Instead, they present their cognitive view of metaphor: "The essence of metaphor is understanding and experiencing one kind of thing in terms of another". In other words, metaphor has come to mean "a cross domain mapping in the conceptual system" and should be understood as "metaphorical concepts" [4-6]. The locus of it is not in language at all, but "in the way we conceptualize one mental domain in terms of another" [6]. Hence there is a constant correspondence between the abstract and the concrete; between the target and the source. Such correspondences are classified into structural, orientational and ontological metaphor. Structural metaphors refer to the cognitive process by which the language speakers "use one highly structured and clearly delineated concept to structure another". Orientational metaphors organize "a whole system of concept" with respect to spatial orientation, while ontological metaphors represent the process in which "our experience of physical objects and substances provides a further basis for understanding"[4-6]. It has also been established that an image schema is a recurring structure within our cognitive processes which establishes patterns of understanding and reasoning. Image

schemas are formed from our bodily interactions, from linguistic experience, and from historical context. All these above taxonomies attach significance to understanding Emerson's scientifically structured conceptual metaphors, bodily experienced metaphors and existential metaphors. Importantly, Emerson's long-extant- realization is: "Right means straight; wrong means twisted. Spirit primarily means wind; transgression, the crossing of a line; supercilious, the raising of eye-brow. We say the heart to express emotion, the head to denote thought; and thought and emotion are words borrowed from sensible things, and now appropriated to spiritual nature. Most of the process by which this transformation is made, is hidden from us in the remote time when language was framed" [3, pp. 25-26]. Seen from this claim, the dynamic embodied patterns of experiences spread out as multi-modal image patterns, which are not simply visual, occur in and through time. Emerson's philosophy revolves around multiple domains involving human nature, human mind, God and celestial bodies, nature, scientific phenomena, etc. The author's interest is not only to construe the functional and structural façade of conceptual metaphors, primary metaphors and linguistic metaphors but is more directed to see how he has configured scientific facts in his transcendental space of mind.

3. The Analytical New Experientialist Philosophy

3.1. Bodily, Perceptual, and Cognitive Basis of Metaphor

The essence of experientialist philosophy lies in how we base our experience. Conceptual metaphors are grounded in, or bodily motivated by, human experience, which means "interconnectedness of two domains of experience" [7]. According to experientialists, such as George Lakoff, Mark Johnson and Mark Turner, metaphor is the cognitive mechanism whereby one experiential domain is partially mapped onto a different experiential domain, to pave way for partial understanding of the second domain in terms of the first one. The domain that is mapped is called the source domain, and the domain onto which the source is mapped is called the target domain. For example, in MAN IS NATURE metaphor, the domain of nature is mapped onto the domain of man. Experiences of the scientific phenomena at play with nature would also participate in the mapping process. The experientialists explain the difference between a metaphor and a metaphorical or a linguistic expression that furnish the data for the metaphorical process. Another important feature of the mapping process is 'reason'. The experiences on which the conceptual metaphors are based may be not only bodily but also perceptual, cognitive, biological, or cultural [7]. According to Lakoff & Johnson [8], reason includes not only our capacity to conduct inquiry, to solve problems, to evaluate, to criticize, to deliberate but since it is disembodied, it arises from the nature of our brains, bodies, and experience "We need both creative imagination and logical definition. We need generation and dialogue. It is

through the interplay of metaphor and logic that life is lived, experienced and developed" [9, p. 169].

Challenging the Bohemian traditions of traditions of viewing reason as an essential feature of human nature, Lakoffian-Johnsonian Experientialists hold that mind is not independent and for most part we reason only while using metaphors and metaphors which are a product of the imagination. They claim that rationality too is embodied. So we are both. This follows that if even our supposedly abstract thinking is pervaded with metaphor, and if metaphors necessarily link our supposedly abstract ideas to our concrete embodied experience, then even our clearest rational thought is unavoidably linked to our embodied experience and therefore to our bodies. They further assert the human beings are not independent of others; they have evolved only through millions of years of interaction with other animals, with plants, and a wide variety of physical environments; human individuals acquire their primary experience, on which secondary or conceptual experience is based, from interaction with the physical environment, with nonhuman objects (rocks, tools, toys, animals, and plants) and especially with other human beings among their immediate social surroundings. L & J write: Reason, at the very least, involves categorization, entailment, and inference. Imagination, in one of its many aspects, involves seeing one kind of thing in terms of another kind of thing—what we have called metaphorical thought. Metaphor is thus imaginative rationality. Since the categories of our everyday thought are largely metaphorical and our everyday reasoning involves metaphorical entailments and inferences, ordinary rationality is therefore imaginative by its very nature. Given our understanding of poetic metaphor in terms of metaphorical entailments and inferences, we can see that the products of the poetic imagination are, for the same reason, partially rational in nature [4, p. 193].

3.2. Experientialism, Truth and Science

According to experientialist philosophy, the experientialist account of understanding and truth denies that "the objectivist view that there is absolute and unconditional truth without adopting the subjectivist alternative of truth as obtainable only through the imagination, unconstrained by external circumstances" [4, p. 193]. metaphor is an imaginatively construed key to partial comprehension of our feelings, aesthetic experiences, moral practices, and spiritual awareness.... An experientialist approach also allows us to bridge the gap between the objectivist and subjectivist myths about impartiality and the possibility of being fair and objective. The two choices offered by the myths are absolute objectivity, on the one hand, and purely subjective intuition, on the other" [4, p. 193]. It is a clear note that metaphor functions partially in the conceptualization of the world. A complete or satisfying strategy would be to supplement an objective element (characteristic of science) to it -- which Emerson did as detailed in the later pages of this paper.

Challenging the linguistic and psychological version of correspondence between the conceptions and truth, the

Experientialist Philosophy posits that there is always a significant unconscious background to our thinking. This is especially the case when we are engaged in so called abstract or non-concrete thinking. The question of truth cannot arise until the ways in which it is understood are in place, and the latter depend upon prior embodied experience and unconscious thought processes involving imagination. In reflection, even the veteran rationalist Kant, "who supported the analytic view by positing that a deep rational structure of the world follows a systematic philosophy consisting of strictly conceptual truths, which flow from a logically perspicuous relation of 'containment' among concepts"[10], has been a subject of challenge. Far reaching and scientifically indispensable parts of our knowledge of the world (including mathematics, the foundations of natural science, all knowledge from experience, and the central principles of metaphysics itself) are *essentially* synthetic and could never be restated in analytic form [10]. Waxman [11] asserts that Kant is not rationalist in truer sense as his transcendental philosophy is an *a priori* psychology which displayed unity of sensibility. Challenging the rationalist notions of the world, Cognitive linguists [4-7] give a cognitive-scientific twist to these traditional romanticists-rationalists. To them truth is embodied and Embodied truth is not purely subjective truth. Embodiment keeps it from being purely subjective. Because we all have pretty much the same embodied basic-level and spatial-relations concepts, there will be an enormous range of shared 'truths'. "Embodied scientific realism," say Lakoff and Johnson [4], "gives rise to a corresponding notion of embodied truth for science. Statements like 'there are cells' are stable scientific truths, embodied truths depending on the capacity for scientific instrumentation to extend our basic-level abilities to perceive and manipulate" [4]. Truth under the experientialist philosophy of metaphor is always relative to a conceptual system [12]. In this regard Ladyman's definition of science is pertinent [13]: "Science is often thought to be the ultimate form of objective and rational inquiry, and scientists are widely regarded as being able to gather and interpret evidence and use it to arrive at conclusions that are scientifically proven' and so not just the product of ideology or prejudice. Methodology of science (scientific method) is at the center of philosophy of science. The branch of philosophy that inquires into knowledge and justification is called epistemology. Knowledge is not belief. Belief has to be justified. Scientific knowledge derives its justification by being based on generalization from experience and it (methodology) keeps scientific knowledge firmly rooted in experience" This view greatly follows the experientialist philosophy of truth and metaphor offered by Lakoff and Johnson [4-6]. L & J challenge the *a priori* philosophical assumptions prevailed in the western traditions (science or art) and call for empirically responsible epistemology as evidenced by cognitive science research against the objectivist thought surrounding absolutism.

Reviewing "Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought" authored by George

Lakoff and Mark Johnson in 1999, Fesmire [14], clarifies that we are conscious of cognitive thought by only five per cent. Thus, there exists a "cognitive unconscious," cognitive defined very broadly to include all "mental operations concerned with conceptual systems, meaning, inference, and language" [8, p. 12]. Thought isn't repressed a la Freud; it just works too quickly and automatically for us to catch it in the act, and it isn't directly accessible via Cartesian introspection. Among the key constituents of the cognitive unconscious are metaphors, metonymies, folk theories, image schemas, basic-level categories, and prototypes [8, p. 414]. Due to the central role of embodied metaphor, reason is fundamentally imaginative, rather than disembodied, universal, transcendental, and literal. Scientific realism posits Emerson to be secondarily logical in his treatment of scientific metaphors to establish universal transcendentalist ideals. Ironically not all aphorism and quotes of Emerson are poetic; they are sporadically literally understandable as well as philosophically conceivable as explained in the following sections.

4. Scientific Metaphors in *Nature* and *the Over Soul*

Emerson writes in "Nature" about the stars, the preachers of beauty, which come out every night and "light the universe with their admonishing smile." He further writes about the nature and says, "What angels invented these splendid ornaments, these rich conveniences, this ocean of air above, this ocean of water beneath, this firmament of earth between? This zodiac of lights, this tent of dropping clouds, this striped coat of climates, this fourfold year?" [3, p. 12-13]. Influenced by astronomy, environment and natural history and science in general, Emerson's use of metaphor-induced images can be literally interpreted thus:

Using astronomy metaphor, rationally imagines to have found the rich firmament of earth which rotates, spins, and floats through space (the heaven). The earth, as well as the infinite space around it, is beautiful – its bountiful resources, its ocean below, the air/sky above. This circle of light is none other than 'zodiac' meaning a circle with an object at its center – like a zodiac chart, with astrological symbols surrounding a bright light, such as the sun. 'Zodiac' could also be referring to the night sky full of galaxies as we capture them from earth's surface. Clouds are like warm blanket or 'tent' enveloping/protecting the earth. Navigating himself high up in the space, Emerson also captures 'stripped coat of climates' that refers to the appearance of the earth from space – the changing colours of the earth, indicating different physical features in motion and circles shaped by the geometry of seasons ('fourfold year'). The above statement in *Nature* indicates that Emerson, like Aristotle, shifts from macrocosm to microcosm. As noted by Falcon [13], Aristotle's investigation is carefully structured: it begins with an examination of the first causes of nature and natural change in general, continues with a study of the celestial

region, and ends with an investigation of the sublunary world, including a study of plants and animals.

His use of *Eyeballs and Circles* metaphor suggest his reliance on Physics to understand the abodes of heavenly bodies and terrestrial objects and their cause-effect relationship. At the root of all scientific methods lies the conception that an investigator makes before journeying for investigation. Emerson makes sense of nature, God and human being by using metaphors confined within scientific principles and concepts to reveal natural truths. This is a scientific epistemology albeit his display of literary metaphors, which cannot exempt emotional revelation. "In fact, scientific progress is possible only because the results of experiments are reproducible and thereby immune at some level to changing emotions and insights. Rather, it is the interactional properties that allow us to extend one understanding to other phenomena" [14, p. 72]. As already established, metaphor offers partial understanding of entity or phenomena. During excavation and scrupulous observation of nature at work, Emerson is transcendently looking for alternate metaphors, impacted by emotional and rational shifts for better results. This is indicative of scientific progress-analogy. Partial and shifting understanding of phenomena or entity is attributed to his vigorous interactions with nature to understand the attributes of the Over-soul, nature and human being. As we look into his statements and remarks about nature, his stars are 'objectivism-personified' metaphors manifested as navigators helping our psyche to navigate celestially following the path of light.

Typically his more explicit references are examples, quickly transformed into metaphorical statements about correlations (or correspondences) between man and nature through spirit. Emerson's intuition similarly displays multi-modal dimensions of ontology, dialecticism, epistemology, metaphysics and praxis. Emerson's excavation and exposition of "nature", ranges from the face values and surface understanding of the word as designating outdoor terrains such as woods, fields, streams and rivulets, ocean, stars, and mountains to much more deep, abstract and subtle entities in the vein of "over-soul", "divinity", and "spirit": "In the presence of nature a wild delight runs through the man... Crossing a bare common... I have enjoyed a perfect exhilaration... In the woods, too, a man casts off his years... In the woods its perpetual youth... In the woods, we return to reason and faith. Standing on the bare ground, —my head bathed by the blithe air and uplifted into infinite space, —all mean egotism vanishes. I become a transparent eyeball; I am nothing; I see all; the currents of the Universal Being circulate through me; I am part or parcel of God" [3, *Nature* p. 9-10].

Metaphorical treatment of scientific phenomena and facts by Emerson is methodologically and epistemologically justified by considering the elasticity and dynamism of evolutionary development of species as Darwin posited. Klein [2] finds that while most critics place Emerson and Darwin on opposite sides of a humanistic/scientific divide, the Emersonian and Darwinian conceptions of the natural

world converge in their mutual understanding of that world as fluid and evolving, not static and fixed, and in their attention to the fundamental relationships between organisms and their environments. It follows that there is a share of methodological approach between the two as both of them were influenced by contemporaneous ideas about museum display, results, in both cases, in a narrative that links natural order and language. Klein further elaborates that Emerson observed and classified nature with the aim of understanding himself and interpreting his role in the book of nature where as Darwin observed and classified nature in order to understand its unrecorded history, interpreting objects as evidence for his theory of evolution by natural selection. "Both drew upon the museum as a model and as a method, Emerson through his thoughts, and Darwin through his actions. While they diverge in their conceptions of the natural world and the position of man within it, Emerson and Darwin are joined in their embrace of the ability of language to transport and to transcend" [2 p. 23].

Another notion of scientific observation and precision of Emerson lies in 'The axis of vision is not coincident with the axis of things and so they appear not transparent but opaque'. This implies that clarity, precision, and deep meaning cannot be extracted from the surface of any natural specimen. To Emerson, to penetrate the opacity of things, man must first observe himself. Man, he writes, 'cannot be a naturalist until he satisfies all the demands of the spirit' [3 p. 48]. When literal and coded entropy of symbols and signs that mind harbors are made visibly redundant in the decoding process, man will then be able to decipher the 'solution in hieroglyphic' to the order of natural things. In *Nature*, Emerson captures a moment of transcendent sight: 'Standing on the bare ground, —my head bathed by the blithe air and uplifted into infinite space, —all mean egotism vanishes. I become a transparent eyeball; I am nothing; I see all; the currents of the Universal Being circulate through me; I am part or particle of God' [2 p. 10]. This implies that Nature's high spirit totally devours his "I" or ego as if he is like an empty boat. When ego vanishes, universal sight results. He sees through as he perceives the transparency of things and his eyes themselves become transparent. Why? Taking camera lens as observer's eyes, Emerson scientifically considers himself as transparent — first by observing minutely and then finding the truth. This is an analogy of photographic camera that snaps out the image after adjusting the focus and clicking on the target objects. Hence the Eyeball metaphor is the result of transition from "seeing" to "seeing through", from "observing" to "invisibility", from activity of 'seeing' to passivity of 'seen'.

Having established, through a few examples, the presence of scientific metaphors in *Nature*, it is pertinent to establish what flavor or variety Emersonian naturalism has, so as to illuminate the science-naturalism-metaphor trajectory. An arm-chair philosopher, Emerson, not only contemplated thoughts but also perceived nature with his own active senses. Emerson mentions in his essay "The Over-Soul": "that all language is based on physical images. For him, the

history of words is mere static stock which should be referred to, but not to be accepted as universal truth. Believing on the inherent, dynamic capacity of man, one should trace words' meanings back to original concrete pictures and actions. Especially in *Nature*, he maintains that objects are a kind of language that represents spiritual ideas; objects can be "read" for inspiration and understanding. Hence, it is no surprise to find that Emerson characteristically expresses his ideas in vivid images and metaphors. In the illustrations presented below metaphors conceptualized for Emerson are: THE MIND IS A CONTAINER (FOR IDEAS); IDEAS (OR MEANINGS) ARE OBJECTS; LINGUISTIC EXPRESSIONS ARE CONTAINERS; COMMUNICATION IS SENDING; KNOWING IS SEEING THROUGH.

Treatment of Water in the form of image metaphor prevails throughout Emerson's writings. Physico-chemical properties of water understandable as adhesive and cohesive, clear and holy and surface-tensile seem to have fascinated him. Emerson transforms these characters metaphorically into basic concepts associated with independence, transcendence, and spiritual insight which is possible only upon meditation. In *Nature*, Emerson asks, "Who looks upon a river in a meditative hour and is not reminded of the flux of all things?" [3, 26-27]. The flowing river not only reminds the thoughtful person of the ongoing flow of time, it is a figure for the passing days of an individual's life. In "The Over-Soul," in which images of water abound, he writes, "Man is a stream whose source is hidden," [15, *The Over-Soul*, p. 268], a statement that emphasizes the anchorage of mystery in each person.

As the great sea of consciousness unites the individual with the mysteries of the universe, it also creates a communion between all of humanity. Thus, in "The Over-Soul," Emerson expresses an almost ecstatic sense of the beautiful union of all people: "The heart in thee is the heart of all; not a valve, not a wall, not an intersection is there anywhere in nature, but one blood rolls uninterruptedly an endless circulation through all men, as the water of the globe is all one sea, and, truly seen, its tide is one." This parallelism is also the characteristic of science. Emerson posits a very conventional phenomena of human experience on the procurement of commodity thus: "The wind sows theseed; the sun evaporates the sea; the wind blows the vapor to the field; the ice, on the other side of the planet, condenses rain on this; the rain feeds the plant; the plant feeds the animal; and thus the endless circulations of the divine charity nourish man" [3 p. 13]. To Emerson, soul moves in a circular motion, by "ascension of state, such as can be represented by metamorphosis, -- from the egg to the worm, from the worm to the fly" [15, *The Over-Soul*, p. 274]. The endless circulation is a common metaphorical link between both human and extraneous, non-human nature. Reflecting upon the enigma of endless circulation of blood in human physiology, Harvey's analogy is worth mentioning. When William Harvey proposed a solution to the mystery of how such a high volume of blood was pumped by the heart, he compared (what we now know as) the circulatory system to a

circle. That is, the metaphor of blood circulation as a circle helped clarify and modify important concepts in physiology, and directly contributed to the process of developing a coherent explanatory concept (the term "circulatory system" is now ubiquitous) [16, p. 9]. Moreover, Emerson was interested in scaffolding of metaphors related to mind, heart, soul, etc. He says: "Within man is the soul of the whole" and the soul has many unexplored "chambers" and "magazines" which is "not an organ, but animates and exercises all the organs" [15, 267-269]. Bodily motivated metaphors are quite novel and complex and can be construed as DIVINE SOUL IS HUMAN HEART, DIVINE MIND IS HUMAN MIND, and DIVINE IS MENTAL. These metaphors are reversible depending upon what targets we wish to understand. Emerson also resolves the dichotomy between means and ends by reconciliation. Reference [15, p. 275] shows: "... the soul requires purity, but purity is not it; (it) requires justice, but justice is not that..." and since "hands" and "feet" are the means, man can fulfill the requirements of soul through actions.

Since ordering is essential in scientific explanation, the idea of travel is also conceivable qualitatively. In "The Over-Soul" he urges us, "Do not require a description of the countries towards which you sail." This statement may seem quite an indecent agenda of discussion, but it carries a powerful flavor of Emersonian sense of life as an adventurous journey which man should venture to make a difference in knowing the mystery of spiritualism. He asks us to take risks and to exercise independent thought and imagination rather than safely follow convention. This essentially conforms to the Source-Path-Goal Image Schema (SPG schema), originating in conceptual metaphor theory, presupposes that human beings' conceptualization of "purposive behaviour" depends on their fundamental experience with bodily movement. Since journey involves both time and space, achieving a goal typically often requires literal movement from A to B. Hence behaviour-wise, the basic fact that all goal-directed behaviour involves time, and that time is conceived in terms of space results in an overarching metaphor that can be formulated as PURPOSIVE BEHAVIOUR IS A JOURNEY [4], [6] and [7]. The common structure underlying humans' understanding of literal movement, time, and purposive behaviour is captured in the notion of the SPG schema used by Emerson.

Along this SPG schema also operates Chemistry metaphor primarily construed as MAN IS SOLUTE and WATER IS SOLVENT. Since Emerson aspired to reach the Higher Self and it demanded sacrifice and surrender to dissolve the ego -- which is the cause of conflict and fragmentation -- the individual is frequently imagined as moving in or on a river, the universe is pictured as a vast, immeasurable ocean. A key metaphor in Emerson's iconography is the river emptying into the sea and becoming part of it. This figure of speech expresses the fundamental notion of transcendence: the individual uniting with the universal mind -- the Over-Soul. Emerson writes in "The Over-Soul" that the soul's

apprehension of truth is an ebb of the individual rivulet before the flowing surges of the sea of life." He emphasizes the union of individual and universal consciousness: "The only mode of obtaining an answer to these questions of the senses is to forego all low curiosity, and, accepting the tide of being which floats us into the secret of nature, work and live, and all unawares the advancing soul has built and forged for itself a new condition, and the question and the answer are one."

Such participation allows us to partake of the divine life that penetrates and permeates the universe. Hence LIFE IS JOURNEY, PHYSICAL IS SPIRITUAL, LIFE IS OCEAN and MAN IS NATURE metaphors are conceptual where as his philosophical adages turn out to be cognitive and less poetic to make men aware of their obligations to become consciously duty oriented. All are image induced.

Emerson's use of light and fire also provoke conventional metaphors and fresh wisdom and didactics. These pertain to sense of time and a calm, blissful union with the universal. Light and fire are associated with emotional warmth, vigor, and strong, manly feelings. In "The Over-Soul", Emerson describes what it is like to experience a unity with the Over-Soul. His comparison combines a homely household hearth and a more mystical, visionary enlightenment: "The character and duration of this enthusiasm vary with the state of the individual, from an ecstasy and trance and prophetic inspiration, — which is its rarer appearance, — to the faintest glow of virtuous emotion, in which form it warms, like our household fires, all the near ones and dear ones, and makes society vibrant. These bodily and social experiences are formed early in life from sensory-motor interactions with the world (things we experience through our bodies) and subjective experiences and judgments (emotions and beliefs). Hence the "Affection is Warmth" as primary metaphor arises from the conflation of the sensory-motor experience of warmth, and a subjective judgment of affection [16, p. 10]. To describe the passage in Ricoeur's terms, the internal organization is the unity of physically warm objects within the purview of heat, while the "reality outside language" is the connection between heat and mutual affection" [17] cited in [14]. The same essay, [14] offers an image of light and fire in conjunction with an image of water to depict the union of individuals with each other, and within the embrace of the universal: "By the same fire, vital, consecrating, celestial, which burns until it shall dissolve all things into the waves and surges of an ocean of light, we see and know each other and what spirit each is of." LIGHT IS PATH; HEAT IS LOCOMOTOR and WATER IS SAILER metaphor for path and goal schema can rightly be construed in line with Liebig's observation of animal chemistry: "Heat and light are the remote causes of motion in vegetables; but in animals we recognize in the nervous apparatus a source of power, capable of renewing itself at every moment of their existence" [17 in 14, p. 75]. This is how Emerson makes a heading for union with the Over-Soul, by using scientific vehicle driven by scientific metaphors.

Emerson, critical of mechanistic view of romanticism,

emphasized imagination to order the accumulated facts of empirical science. In so doing, he epistemologized his faith in science in tandem with his optimism in spiritualism through discovery so as to mitigate the mechanism of picturing the universe posited by nineteenth century empiricism. Seen from this angle, Emerson was a scientific idealist. On Emerson's Poet-Scientist ideal, Obuchowski [18, p. 2] remarks that Emerson is: [.. Rather], the man who is able to wed the facts of science to the spiritual dimension of experience without violating the validity of those facts. He is the man, in short, who can show that, nature, despite the multifariousness it exhibits from the point of view of scientific observation, has an ultimate unity. In this sense, Emerson is not orthodox either from the perspective of natural science, or from the traditional "poetic" point of view, which tends not to trouble itself with reconciling scientific descriptions and their concomitant implications with a spiritual view of humankind. "Nature" and "The Over-Soul" both exhibit these empirical and spiritual dimensions. From Zodiac to circulation, geometric perspectives underpin all of Emerson's theories about nature. But, to defend his transcendentalism, he played the role of transcendental empiricist. Hence, as Windolph [19] posits, his geometric treatment of facts and phenomena are metaphorical and analytical because of his motivation for higher truth of spiritualism and idealism. He gives metaphysical, not just epistemological weight, to the material prospects of shape and structure [19]. Since journey has been an essential motive for Emerson, motion had been an important element in his quest for abstractions. Impressed by Newtonian laws of motion, Emerson gave supreme metaphysical impetus to motion. Linear state of concrete and abstract realities stands out as having diverse and irreducible façades. As a believer in emergent property of matter he could not exempt himself from considering the impact of external agents to change the state of moving things. On the conception of "beauty" by Emerson, the charm of running water, sea-waves, the flight of birds, and the locomotion of animals, are the result of circularity as circulation of waters, the circulation of the blood, the periodical motion of planets, the annual wave of vegetation, the action and reaction of nature, are thus non-linear and display an "ever-onward action" of circularity that transcends matter in its importance, becoming an argument for immortality [19]. MOTIONS ARE NON-LINEAR ACTIONS metaphor rightly dovetails Emerson's metaphysical conception of scientifically defined inertia of object-states.

Eric Wilson in "Emerson's Sublime Science" contends, "Relinquishing egotism, Emerson suddenly participates in the abysmal Universal Being that manifests itself in polarized currents" [20, p. 136]. It is understandable that the electromagnetic metaphor was inevitable for Emerson to portray a turbulent physical cosmos that manifests itself in polarized forms" Unlike Descartes or Newton, Emerson's non-dualism is also science inspired, though science seemingly posits an analytic view. He rather leaves an opportunity for readers and critics to analyze and synthesize

British Romanticism, American Romanticism and nineteenth-century science in the light of scientific idealismsurrounding Faraday's theory of electrolysis and Davy's chemistry which lead to understanding Emerson's sublime articulation that posits MATTER IS ENERGY analogy to galvanize readers with the insight of MAN IS NATURE/OVERSOUL metaphor.

Another scientific methodology Emerson employed in *Nature* and *The Over-Soul* was careful and minute observation of natural specimens. In Emerson's own view in *Nature*, all of nature serves to educate man through both the rational, logical "Understanding" and the intuitive, mystical "Reason." Close to scientific methodology, this rationality involves learning about the resemblances, correlation, contrasts between objects, about reality and falsity, about structure, configuration, progression, and synthesis. Eyeballs, circles, rotations, circulations, etc provide opportunity for exposition and elaboration by readers. What he visualizes are ordered and configured in order to unfold invisible relationships between nature and human intellect. Hence he seems to consider natural facts as repository of facts worthy of being examined, categorized, and, ultimately, transcribed into text. From visible to invisible, from seemingly trivial to hidden lofty and prudent in a mode of refraction laws of light Emerson goes on revealing the truth about nature and beyond until the rapture and capture of "Aha" experience.

5. Conclusion

The paper has evidenced that Emerson's scientific metaphors emanates from the sources of electromagnetism, chemistry, bio-physiology, human body, astrophysics, Newtonian optics and linear motion and geo-ecology, which helped him to develop what the author calls "scientific idealism", ultimately leading him to transcendentalism. The paper posits that Emerson gave a cognitive twist to the scientific truth and provided a new order to the latter in his move to justify transcendental ideals surrounding, human beings, nature and God and their interrelationship. In so doing he appears to have exhibited the synthesis of reason and understanding. In the clutch of both the scientific and spiritual principles, Emerson aspired to cognize and describe the correlation between the dominion of understanding and reason, which involved the reconciliation between 'imagination and intuition' and 'logic and reasoning' as part of striking the balance between materialism and spiritualism. Close to scientific methodology, this rationality involves learning about the resemblances, correlation, contrasts between objects, about reality and falsity, about structure, configuration, progression, and synthesis. Eyeballs, circles, rotations, circulations, etc provide opportunity for exposition and elaboration by readers. What he visualizes are ordered and configured in order to unfold invisible relationships between nature and human intellect. Hence he seems to consider natural facts as repository of facts worthy of being examined, categorized, and, ultimately, transcribed into text. Findings apparently resonate with Obuchowski [18] for the

role of Emersonian metaphor in giving new order to the literally known scientific phenomena and facts through constant contemplation and discovery, and Windolph [19] for his claim that Emerson supplied metaphysical weight to the scientific epistemology which could be possible only through metaphor. Moreover, conceptualization of the dichotomy between man and nature, between God and man, and between the mind and body is compatible with the metaphor theory within the framework of Experientialist philosophy. However, Emerson's definition of man and nature, and man and Over-soul are metaphorically reversible, which stand against the claim of conceptual theory of metaphor that mapping is a one-way correspondence. Yet, his use of metaphors is neither strictly objective nor subjective, but secondarily experiential, which involves union of embodied reasoning and observation, characteristic of scientific epistemology in general and Johnsonian-Lakoffian Experientialist Philosophy in particular. The paper has clearly displayed how event metaphors and their scaffoldings could explain some of the Emersonian ideals. But whether the cognitive-experiential modality of metaphor can account for similar functions in other Emersonian essays remains to be explored.

References

- [1] Walls, L. D. (2003). *Emerson's life in science: the culture of truth*. Cornell University Press.
- [2] Klein, L. F. (2010). The 'Emerson museum' and the Darwin exhibit: Observation, classification and display in the early works of Ralph Waldo Emerson and Charles Darwin. *Victorian Network*.
- [3] Emerson, R. W. (1844-1930). *Nature: addresses and lectures* (Vol. 1). Houghton, Mifflin, pp. 1-470.
- [4] Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. University of Chicago press.
- [5] Johnson, M. & Lakoff, G. (1992). Experientialist philosophy: Philosophy in the age of cognitive science. *WordPress.com*.
- [6] Lakoff, G. (1993). The contemporary theory of metaphor. In Ortony, A. (Ed.), *Metaphor and Thought* (2nd ed., pp 202-251). New York: Cambridge University Press.
- [7] Kovecses, Z. (2010). *Metaphor – A practical introduction* (2nd ed.). Oxford: Oxford University Press.
- [8] Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to western thought*. Basic books.
- [9] Doll, W. E., Jr. (1993). *A post-modern perspective on curriculum*. New York: Teachers College Press.
- [10] Anderson, R. L. (2015). *The poverty of conceptual truth Kant's analytic/synthetic distinction and the limits of metaphysics*. Oxford University Press, USA.
- [11] Waxman, W. (2013). *Kant's anatomy of the intelligent mind*. Oxford University Press.

- [12] Tolosa, B. R. (2004). *A cognitive experientialist approach to a dramatic text: King Lear's conceptual universe* (Doctoral dissertation, Universidad de Alicante).
- [13] Falcon, A. (2005). *Aristotle and the science of nature: unity without uniformity*. Cambridge University Press.
- [14] Tindol, R. (2011). The function of scientific metaphor in Thoreau's Walden. *Rupkatha Journal on Interdisciplinary Studies in Humanities* (3), (1).
- [15] Emerson, R. W. (1844). *The complete works of Ralph Waldo Emerson: Essays. 1st series [Vol. 2]* Boston; NewYork: Houghton, Mifflin, [1903-1904].
- [16] Haitos, A and Strehle, D. (2010). "Metaphor and science" <http://preserve.lehigh.edu/cas-lehighreview-vol-18/20>.
- [17] Liebig, J. *Animal Chemistry: or chemistry in its applications to physiology and pathology*. 2nd ed. Trans. William Gregory. London: Taylor & Walton, 1843.
- [18] Obuchowski, Peter A. (2005). *Emerson and Science: Goethe, Monism and the search for unity*. LindisfarneBooks.
- [19] Windolph, C. J. (2007). *Emerson's Nonlinear Nature*. University of Missouri Press.
- [20] Wilson, E. (1999). *Emerson's sublime science: Romanticism in perspective: Texts, cultures, histories*. Palgrave Macmillan UK.