

Independent Study Project:
Treatment of Time in Early Indian Art

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Abstract

This paper is concerned with the differences in the treatment of time in ancient Indian and Western philosophies. Careful review of literature reveals several distinguishing features between how time is viewed in Indian philosophy as opposed to Western philosophy. I propose that representation of time and sequence of events in early Indian art illustrates peculiarities of India's conceptual treatment of time. As supporting evidence, I will examine different forms of narration employed in visual representations of *jataka* stories decorating early Buddhist monuments, as well as specific Hindu sculptures. Unlike Greco-Roman art of the same period that had two main modes of narration, Buddhist art employs four additional types of visual narrative. The proposed hypothesis is that since in Western philosophy the prevailing model is that of linear and unidirectional flow of time, it limits the possibilities for portrayal of events in visual art to either monoscenic (“snapshot”) or continuous narrative; whereas in Indian philosophies time is seen as cyclic and more flexible – a concept that is manifested through art in the form of synoptic, conflated, and linear narratives. In addition, unique treatment of time in Indian philosophies is evident in the statue of Shiva Nataraja, which illustrates the concept of circular time through cycles of creation and destruction, and specifically in the philosophical sculptural composition depicting the birth of Brahma, which portrays Absolute Time. Ideas about time embodied in those artworks are conveyed with effortless effectiveness – something which could not have been accomplished by the use of words.

Introduction

“Time is short, Time is long, Time eternal, as we may choose and use it, and so it is described in literature and art, probably more effectively, and in a telling manner in the later, as visual intake is even more effective”.

Sivaramamurti

One of the distinguishing features of human race is its ability to create and understand art. The fact that people everywhere in the world and at every point in history have always had art suggests that art serves important purposes for society. Besides the obvious aesthetic appeal, art has many other functions, such as expression, communication, entertainment, psychological, educational, ceremonial, religious, propagandist, symbolic, etc. (Adajian). In my opinion, the most amazing feature of art is its ability to render extremely complex and abstract concepts that take up pages and pages of philosophical discourses. In some instances abstract concepts are presented in allegorical form. For example, justice is depicted as a blindfolded female figure holding a balance. Other times, the meaning is conveyed through the use of symbols, as in the famous Dutch still life paintings. Virtually all still life had a moralistic message, usually concerning the brevity of life – this is known as the *vanitas* theme – implicit the use of obvious symbols, like a skull, or less obvious, such as a half-peeled lemon (like life, sweet in appearance but bitter to taste) (Slive). Yet another way to express a philosophical or moral idea is to refer to a story that manifests this idea. When one sees a painting or a sculpture of a man nailed to a cross, he or she immediately think of the story of the sacrifice of Jesus Christ and the virtues of love and forgiveness that his life exemplifies. Sometimes the philosophical significance can be perceived on emotional or subconscious level, as in the case of mandala. According to the psychologist David Fontana, its symbolic nature can help one "to access progressively deeper levels of the unconscious, ultimately assisting the meditator to experience a mystical sense of oneness with the ultimate unity from which the cosmos in all its manifold forms arises" (Fontana). The psychoanalyst Carl Jung saw the mandala as "a representation of the unconscious self, and believed his paintings of mandalas enabled him to identify emotional disorders and work towards wholeness in personality (Jung in Jackendoff).

One needs to keep in mind, however, that in each case interpretation of an artwork is contingent on the viewer's cultural background. The connections between the signifier and signified are established within a specific cultural context; consequently, an allegory or a symbol may bear a different meaning to representatives of different cultures or even lose its meaning completely (Saussure). The simplest example is that while in Western culture color white denotes purity, in China it is the color of mourning. Similarly, while an educated European or American will easily identify the blindfolded female as Justice, a yak herded from an isolated village in Ladakh will probably describe it as a woman with a scarf tied over her eyes.

Not only can art convey intangible concepts, it can also reflect the ideals and beliefs of a certain society or culture. If one considers the Italian Renaissance, Michelangelo's art exemplified the change in perception of the value of human individual. Though religion remains the predominant theme of his work, as it had been during the prior centuries of hegemony of Christianity, his sculptures and paintings portray men as beautiful and powerful beings, as opposed to the meager wretched slaves of God, as even the apostles were shown just fifty years prior on the facade of Or San Michele church in his native Florence. During those fifty years, the humanists reintroduced the Greek philosophy of individualism and with it the Greek ideals of physical beauty of men who, in Greek mythology, were on par with gods. Similarly, in the twentieth century, the advance of technology and science gave rise to abstract art.

In this paper, I undertake an ambitious task of describing how notions of time found in the

philosophies of the Indian subcontinent are expressed in early Buddhist and Hindu art. I argue that Vedanta, Hindu, and Buddhist literature present much more sophisticated ideas about time than the contemporary literature of the western civilization, namely, Greek and Roman philosophies. These ideas include circular treatment of time, relativity of time, distinguishing between worldly time and Absolute Time, simultaneous existence of past, present, and future, and complete negation of time. What is more, recent developments in modern science support the legitimacy of the claims regarding time in Indian philosophy.

These notions of time find their expression in art, both directly and indirectly. In the first case, the art work itself can be seen as a metaphor of time, as we shall see in the sculptural composition of the Birth of Brahma. In the second case, the technical execution of the piece suggests prevalence of advanced notions of time in the mind of the artist, as well as the viewer for whose comprehension the artwork is intended. Here I will use the example of the treatment of temporal arrangement in the various modes of visual narrative in early Buddhist art. In addition, I propose that even the common way of portraying Hindu deities as having many faces or arms is unique to Indian art and indicates an intrinsic understanding of flexible nature of time.

Methodology

For this project, I have consulted various primary and secondary sources to gain background information about different philosophies of time. In the process, I encountered some difficulties because the subject is very broad. Philosophers have been concerned with the subject for thousands of years and developed many different views of time. While researching the Western philosophies of time, I was overwhelmed with the amount of information, and, although I wanted to give a comprehensive account of the various schools and opinions, I had to pick out and concentrate on the ones which were relevant for my project. While dealing with Eastern philosophy of time, I ran into an opposite problem, namely, lack of literature and absence of a complete summary of all existing beliefs concerning time. Therefore, I tried to compile ideas found in various sources and narrow them down to a few main trends which could be contrasted with those of the Western philosophy and applied to characterizing Indian art.

In this paper, I am using the term “Eastern philosophy” to denote specifically Buddhist, Hindu, and, in a few instances, Vedanta and Purana philosophies. This combining of the two distinct philosophies which vary significantly in many respects is based on the assumption is that both Hindu and Buddhist views of time originate from Vedantic philosophical beliefs and therefore exemplify similar trends which are drastically different from the general themes of Western philosophy of time.

As a part of the project, I have visited cave temples of Karle, Bhaja, Ajanta, and Ellora and looked at examples which specifically illustrate time, as well as the general layout of the image, and the forms of visual narrative which could be used to support the specific concepts of the Eastern philosophy of time. My project guide, Mr. Udayan Indurkar, who accompanied me to the sites and gave a lecture, was of great help in helping me to select the evidence to prove my points. My intention was to find, observe, and photograph specific examples. However, this plan fell through because I did not realize how many caves there are and how difficult it would be to find what I was looking for in the dim light and disarray of partly destroyed murals. Therefore, I will be using some of my own images and some which I found on the internet as illustrations for the project.

To illustrate the points that I am presenting, I will be using examples of Indian art of the earlier periods. My focus on the early period is rationalized by the desire to avoid outside influences on the style and themes of art which came to India with Islamic rule. I have chosen three different forms of art to be used as my examples. The first is early Buddhist paintings of Ajanta caves which display the use of different forms of visual narrative to tell stories of numerous lives of the Buddha. The variety of modes of narration found in early Buddhist art is much greater than those employed in the Western art of the same period (and for many centuries to come) and I argue that it this variety arises from more

flexible and diverse interpretation of time that was adopted by the people of that time. The second example is a case study of an emblematic statuette of Shiva Nataraja. Here I argue that the evolved form of this representation of Shiva is also a consequence of India's unique treatment of time and tangent philosophical subjects. Finally, I analyze a single sculptural composition which illustrates the myth of the Birth of Brahma and contains numerous references to time. As my guide remarked before our visit to Ellora, I could write my whole independent student project on that one sculpture, which, in his opinion, is the epitome of the true nature time.

Terminology

When talking about time, I cannot help but occasionally bring up other related concepts, such as space, energy and matter, notions of infinitely large and small, Universe, Divinity, and Self. Even though they do not directly pertain to the topic of my paper, they are often interrelated, as in the case of time and space, which, according to modern physics, are inseparable. In Eastern philosophy, specifically, there is no such thing and seeing knowledge for knowledge sake. Discourse about time appears in the context of trying to understand existence in order to achieve liberation. Therefore, I will take some time to introduce certain physical and philosophical concepts that will often reoccur throughout the course of this paper.

It is difficult to talk about relativity of time in a language that is inherently tensed. An important concept that often appears in Buddhist and Hindu philosophical discourses is that of Absolute Time. Absolute Time can be thought of as a fourth dimension that is always present and which does not flow; rather objects and events flow in this fixed parameter. The all-pervasive existence of Absolute Time, that which has been, is there, and will exist, undermines the use of any tense when referring to it. However, Coomaraswamy in his book Time and Eternity mentions the existence of a specific verb form in Sanskrit language which is not really tensed. Forms such as “I may” or “I can” are said to be the “survivors of a primitive atemporal era” (Coomaraswamy). Similarly, when the word “Now” is used in this paper it is not used to indicate the present tense; it is a more general “Now” which incorporates past, immediate present, and future.

Another preconception I would like to mention is regarding transcendental philosophy. When talking about the Universe, Self, or Divinity, I adopt the standpoint of “panentheism” which proclaims that the universe is the divinity. Therefore, “Universe” is not just the physical universe of galaxies and intergalactic space. It is also all of the thought and creative energy that exists. When “Self” is capitalized it is referring to the Divine aspect of an individual, that in him or her which is part of the Universal Soul. Lowercase “self” simply denotes the ego, in the regular understanding of the word.

A note regarding International Review Board. The proposed research project does not include dealing with human subjects.

REVIEW OF LITERATURE

A Brief Summary of Philosophies of Time

There are many philosophical views of time. The field that deals with various questions and speculations concerning time is broadly termed “Philosophy of Time”. Different philosophical schools ascribe different meaning and significance to time. Here I will briefly summarize the Eastern and Western philosophical stances on time. In the next section, I will focus on specific questions and problems relating to time and compare the Eastern and Western philosophical interpretations of these issues.

In Western philosophy, which originates from the ancient Greek philosophical tradition, time

is seen primarily as linear and irreversible fundamental characteristic of the physical world. One of the consequences that arises from such perception is that time is highly valued in the Western mindset. One of the earliest aphorisms about time which fully captures this attitude belongs to an ancient Egyptian thinker Ptahhotep (c.2650-2600 BC): "Do not lessen the time of following desire, for the wasting of time is an abomination to the spirit."

Greek thinkers devoted considerable effort to defining the nature and significance of time. Plato, in the *Timaeus*, identified time with the period of motion of the heavenly bodies (Algra). Aristotle, in Book IV of his *Physica* defined time as the number of change with respect to before and after, and the space of an object as the innermost motionless boundary of that which surrounds it (Coope).

After the classical era, Western philosophy became dominated by Judeo-Christian beliefs. In contrast to ancient Greek philosophers who believed that the universe had an infinite past with no beginning, the medieval philosophers and theologians adopted the view of time found in the three Abrahamic religions – Judaism, Christianity and Islam, – which share the belief that the universe was created by God, thus it has a finite past. St. Augustine in his *Confessions* said that time itself was created with the creation of the universe (Birx). Thus time, having been created by God along with the physical universe, is considered real irrespective of human perception. Not only does the Christian world have a distinct beginning, it also has an anticipated end. There is no answer as to whether time exists after the Apocalypse, except for a belief that souls will dwell in heaven or hell forever.

Notions of time based on Christian doctrine were first challenged by Immanuel Kant. Kant, in the *Critique of Pure Reason*, denies that either space or time are substance, entities in themselves. However, space and time are held to be empirically real, i.e. not mere illusions (Puri). Whereas Kant's realist position is that time and space have existence apart from the human mind, idealist philosophers deny or doubt the existence of objects (or time for that matter) independent of the mind. Idealist writers such as J. M. E. McTaggart in *The Unreality of Time* have argued that time is an illusion because our descriptions of time are either contradictory, circular, or insufficient (McTaggart).

In absolutist and rationalist schools of thought, time is again presented as indisputable fact of being. The great debate between defining notions of space and time as real objects themselves (absolute), or whether they are merely orderings upon actual objects (relational), was held between physicists Isaac Newton (via his spokesman, Samuel Clarke) and Gottfried Leibniz in the papers of the Leibniz-Clarke correspondence. As many such philosophical debates, the outcome is inconclusive (Birx).

Recent developments in science – specifically, the General Theory of Relativity published by Albert Einstein in 1915 – opened the gates for an alternative reinterpretation of time. In the General Theory of Relativity, time is described as being inseparable from space in what is called a space-time manifold. That is, time can only be defined based on the independent observable quantity that is space. Space-time manifold is a fundamental physical characteristic that defines all other physical constants. Therefore, one of the interpretations of General Relativity is that time does not exist at all:

“In general relativity the universe is described by solutions to Einstein's field equations. [...] The amazing fact is that Einstein's field equations can be solved without any reference whatsoever to a temporal variable of any kind, indeed the field equations may be solved without even defining "time". This astounding fact greatly increases our confidence that we live in an essentially atemporal world.”

[\(http://www.ws5.com/spacetime/\)](http://www.ws5.com/spacetime/)

Einstein's re-definition of time has opened the possibility for emergence of many new philosophical conceptions of time. For example, the idea that time is flexible has inspired a school of thought called eternalism, which may be contrasted with conventional presentism. Presentism holds that all things exist only in the present, but not in the past or future. According to Eternalism, all things, past, present, and future, possess an equal degree of existence, that is, anything that has ever existed

still exists and will exist.

Another dispute begun as a consequence of the advance of modern physics is that between perdurantists and endurantists. Endurantism is conventional view, where space and time are separate entities and objects can be described as being composed of only spatial parts. Perdurant theory, on the other hand, proposes that objects have both spatial and temporal parts. That is, for a thing to exist through time is for it to exist as a continuous reality, and that when we consider the thing as a whole we must consider an aggregate of all its "temporal parts" or instances of existing (Lewis). Such description of objects is similar to the Buddhist perception of time. Moreover, perdurant theory brings philosophy in line with modern physics. (Hawley).

Eastern Philosophy

Time is conceptualized very differently in Eastern philosophies. Time is often described as cyclic, as supposed to linear and finite. Some schools of thought deny the existence of time. In others, there is a distinction between time in the context of human perception and Absolute Time which exists independently of human thought.

Hinduism

For a long time, the notion of cyclic time often employed in Indian mythological and philosophical texts was considered primitive and blatantly incorrect by western scholars. Romila Thapar, a Professor of Ancient Indian History, suggests that cyclic and linear time are both used in Indian texts, where cyclic time occurs frequently in cosmological contexts and linear time in historical sources (Thapar). Such distinction further reinforces the idea that "human time scale" that is used to describe historical events is linearized in accordance with our perception of time as linear due to movement in space. On the other hand, the use of large-scale, cyclic time is reserved to describe cosmological and mythological events (e.g. lives of gods) in the earliest Vedic and Puranic texts.

Besides historical and cosmological time, there is also a separate notion of the Absolute Time found in Hindu philosophy. Absolute Time can be thought of as Eternity. It is associated not with certain gods but with Brahma itself, who is the Universal Consciousness, Whole, the entire Universe, therefore implying inseparability of space and time (Coomaraswamy).

Vedantist Cakrapani (Das Gupta, History of Indian Philosophy) in explaining the term *nityatvam* found in *Carakasamhita* (1.1.55, 1.8.11, 141.1) proposes the doctrine that "eternity is that Now to which the past and future are ever present" (Coomaraswamy). In other words, past, once it has occurred, does not go away; furthermore, if one considers an infinite span of time, then everything is bound to become past; therefore, at any given time, future is also present because there is absolute certainty that sooner or later future will be become past. It does not mean, however, that future is predetermined. Various scenarios of the future possess an equal degree of probability; yet only one of them will materialize and that scenario is what exists in the Now. Coomaraswamy goes further to postulate that "The intrinsic nature of Self is its present contemporaneity with whatever has been or will be". This "experiencing Self" does not refer to the human consciousness, but rather to the eternal "Unity", Atman, which is a part of Brahma, – an absolute intellect which persists through time, both creates and constitutes all being, and occasionally materializes in the form of human consciousness.

Cause and effect

Liberation (*moksha*) in *Vaisesika Sutras*, which are regarded to be a pre-Buddhist text (Das Gupta in Coomaraswamy), is defined as cessation of existence. "Nonexistence is the absence of activity and quality". Any activity is bound by causality. The usual perception of cause and effect is that of temporal succession: cause comes before the effect and there is a connection between the two. However, Coomaraswamy claims an even stronger relationship between the two: "Cause and effect have no independent existence". And, if "all production depends on the operation of unseen causality" (Coomaraswamy), then everything that is in existence is bound, glued together in cause-and-effect-and-cause-and-effect totality. Such interpretation of existence abolishes the notions of any temporal

succession and establishes that every moment of time exists simultaneously. We are used to the notion that space is all there and we just move through it; similarly, time is also all there, and we likewise move through it.

If all existence is bound within one system of time-space, then where does nonexistence, or Liberation, lie? Coomaraswamy claims that “Time is [...] absent from eternal things”. *Vaisesika Sutras* says that an atom is “an everlasting uncaused existence”. Atom (*anu*) is not a physical particle (which has physical dimensions that are actually enormous on quantum scale), but the smallest unit of time or (empty) space. The word “empty” is in parenthesis here because, according to the wave-particle duality theory, quantum particles, such as electrons and quarks, can be seen as both matter (particle) or energy (wave), which are interconvertible ($E=mc^2$); therefore, they are zero-dimensional objects that do not occupy any space. Thus, liberation is disintegration into elementary particles which, being zero-dimensional, exist outside of time and space. They are the only eternal, yet unbound by causality, things (Cottingham).

In *Rig Veda* the concept of atom (*anu*) is also related to the Axis Mundi (*ani*): “as upon the axle-point of the [cosmic] chariot stand fast the immortals”. Coomaraswamy very concisely explains it thus: “Atomicity and immensity are attributed simultaneously to the ultimate reality in which these two, and all, extremes meet; and this implies [...] the coincidence in eternity of whatever is everlasting with whatever is now”. The concept of the unity of duality (unity of the opposites: good and evil, infinitely large and small) is recurrent in Hindu philosophy. “Within the context of Brahmanism, the cosmic totality (*samashiti*) appears in the light of divine consciousness. It is reduced to a point. A point of consciousness -- just as a point of time is all time, and a point of space is all space. [...] The bindu, the point, designates the value zero; and yet the same sign also symbolised the universe in its unrevealed form, that is to say before its transformation into a world of appearances (*rupadhatu*)” (Godin)

In Buddhism, time is also seen as an artificial concept of human perception. Unlike the western philosophy, Buddhism does not place so much value on human life as a measure of time. “Early Buddhism, both in the canon and as interpreted by Buddhaghosa, emphasizes both the inconstancy and the extreme brevity of life under any conditions” (Coomaraswamy). In *Anguttara Nikaya* (A. 1.249) life is compared to a single moment of thought, to a turning of the chariot-wheel by one rim.

Just like Aristotle's statement “Everything is becoming, nothing is”, Buddhism emphasizes the dynamic aspect of all processes, and denies any real stability. Time (*samaya*, “co-ition”) is a composite of past (*atita*, “over-gone”), future (*anagata*, “un-come”), and present (*paccuppanna*, “up-come”). The present can mean three different things. First, the present moment in which three states of being meet: forth-coming, stasis, and break-down (*uppada-tthiti-bhanga-pattam*). Second, an extended period of continuation (*santati*), comparable to the linguistic definition of the present, as in phrases “I work” or “I live”. Third meaning is that of the whole life span. Time cannot be thought as atomic, that is, made of a succession of stops, or moments, but rather as a constant flow. Because of the constant non-stop flow of time, the Stasis can therefore exist only momentarily, not in the continuing present (Coomaraswamy).

Another place where Stasis is possible is in the Absolute Time. But before going any further, let me introduce the concept of “composite” and “incomposite” things. Composite things are the ones pertaining to the realm of human experience whose existence can be proved by the senses. They are material, composed of smaller particles. Incomposite things are immaterial phenomena and are therefore not changing. In contrast to the regular time, in which composite things operate, Absolute Time is a concept used in characterizing incomposite things, “eternal substance” (*akaliko dhatu*), such as Buddha's “incomposite Eternal-Law”, Dhamma, or the state of Nibbana (cessation of becoming). These incomposite, unmoved things are asserted to be much more real in Buddhism than the evanescent composite. This is quite a different concept from the western philosophical tradition, beginning with Heraclitus, who proclaimed that “sensibilia are the only realities” (Coomaraswamy).

The fact that Stasis is possible both in the instantaneous present and in the Absolute Time suggests that the two are, in fact, one, “just as a point of time is all time” (Godin). Buddhism uses the analogy of a drop of the ocean water still being ocean water. Stcherbatsky in *Buddhist Logic* recognizes that “the origin of the theory of Instantaneous Being is probably pre-Buddhistic” (Stcherbatsky). This and many other concepts found in both Buddhism and Hinduism arise from the concept of the unity of opposites.

That instantaneous present which is the junction of past and present, is sometimes referred to as *samadhi* and is a synonym of *brahmabhuti*, “becoming Brahma”. The one who has united consciousness with Brahma, is enlightened, Buddha. For Buddha, all time, past and future is immediately present, “as if they formed a circle (beginningless and endless cycle) of which he is the center, no farther from one than from any other point of the circumference; while others, less adept, must work their way backward along the circumference if they are to see any past time” (*Visuddhi Magga* in Coomaraswamy). Thus, realizing the full meaning of instantaneous present is escaping from the circle of time (time of the material world) and being transported into the realm of Absolute Time. This perspective of looking at time as a circle from a point within the circle is very difficult to attain; it is analogous to trying to imagine a curved space-time described by Einstein while being within that space-time manifold.

As to the problem of causation, the Madhyamika school of Buddhism postulates that “the doctrine of causation must be taken as referring only to the world of ignorance” (Digha Nikaya 1. 202). As Coomaraswamy points out, “It stands to the high credit of Indian logic to have distinguished acts (*karma*) from causes (*karana*), and to have given the significant names of “unseen” (*adrsta*) and “not-past” (*apurva*) to causality”. Breaking away from the consequences of karma is stepping into Nibbana, the realm of Absolute Time, where no cause-effect relationship exists. All things have both intrinsic aspects of existence and non-existence: “the nature of anything is its own momentary stasis and destruction” (*Santaraksita*, *Tattvasangraha* p.137.26). Vasubandhu's postulate that “because of immediate destruction, there is no (real) motion” (*Abhidhammakosa* 4. 1), neither in time nor space, but rather that the concept of motion is constructed by the way we perceive the world by measures of time and space.

Other definitions of time that I have found in Indian literature are presented below. In **Jain**, as in Buddhist sources (*Tattvarthadhigama* treated by M. Jacobi and *Ganitasarasamgraha*, edited by M. Rangacharya, Madras, 1912), a moment (*samaya*) is defined as the minimum of time (*kala*) required by an atom (*paramanu*) to move its own length” or “to pass the interval between two atoms”. In the **Vedas** it is said that Time was unstrung and dismembered by the act of creation into parts, such as days and nights, seasons, and years. By analogy of these cyclic periods of time, it is thought that large spans of time (*kalpas*) are also repeated. Time having been unstrung at the moment of creation implies that outside of the created material universe there exists a unified Absolute Time (Coomaraswamy). “According to the **Vaisesik philosophy**, time is an eternal substance, and the basis of all experience. [...] Time which is one appears as many on account of its association with the changes that are related to it”. (Radhakrishnan) In this quote the author uses “Time which is one” to refer to what others have termed Absolute Time.

If **Yoga** is to be described as a separate philosophy, it also has some interesting views on time. In yoga practice, one of the forms of meditation is contemplation on time, “directed towards the immediate realization of ever greater and greater durations and pursued until the whole of time can be experienced now” (Coomaraswamy). *Yoga Sutra* (3. 52) calls it “control of the moments and their sequence”. A Yogi is capable “without any subjective-objective relation ... knows all because it [his essence] comprehends all in a geometric point (*bindu*) and in an instant (*eka-ksana*) ... Time is drowned in eternity” (*Sekoddesatika* in Coomaraswamy).

Comparison of Western and Eastern philosophies of time

The age of the Universe

For a long time, in Western thought existed a paradigm that the Universe, seen as the ultimate frame of existence, was in a steady state and eternal. By the beginning of the twentieth century, however, scientists came to a conclusion, based on the principles of thermodynamics, that our Universe must have a finite age. The fact that the Universe is expanding and distant galaxies are speeding away from each other, indicated by the red shift in their spectral lines caused by the Doppler Effect, suggests that there must be a point in time when this expansion had begun. Furthermore, the observations made by astronomer Edwin Hubble indicated that the expansion is accelerating and allowed to calculate this point of time, which gave an estimate of the age of our Universe (Chang).

The discovery of microwave cosmic background radiation announced in 1965 (Penzias) confirmed the theory of expansion of the Universe and also allowed for a more precise determination of the age of the Universe. The International Astronomical Union presently use "age of the universe" to mean the time elapsed time since the Big Bang in the current observable universe (Chang), which is 13.7 ± 0.13 billion years ("Seven-Year Wilson Microwave Anisotropy Probe (WMAP) Observations: Sky Maps, Systematic Errors, and Basic Results").

If one compares ancient Indian and Western texts concerning cosmological age, one will notice that the span of mythological time as described in vedic and puranic texts is much closer to the actual age of the Universe estimated since the Big Bang. A Day of Brahma extends over 4.32 billion years (Wilkins); the life span of Brahma consists of a hundred years made up of such days, which amounts to 3.1104×10^{13} years. In comparison, Randell Mills, author of "The Grand Unified Theory of Classical Physics," estimated Universe cycle to be at least 9.83×10^{11} years (Steinhardt). In contrast, in Judeo-Christian tradition the date for creation is estimated to around 5500 BC, thus deeming the world only about 7.5 thousand years (Currie).

One of the explanations of why the time has such a short span in the philosophy of the Western civilization is the fact that it is measured in units comparable to human life. The Western worldview can be summarized in the Protagoras's expression "Man is the measure of all things". That is, the Western mindset places human race above everything, sees the world as being created for men and by an anthropomorphic god. In fact, the statement that "god has created man in his image" raises man to the rank of god. Therefore, history and time in Judeo-Christian tradition extends back only to the creation of man and ends with the destruction of human race. In contrast to the homo-centric Western philosophy, the importance of human life is much less in the Eastern philosophy. Human life is seen as a transient phenomena in the world's history. A consequence of that is that "human years" are fleeting moments compared to the years of gods, which, in turn, are moments compared to Absolute Time.

Linear vs. Cyclic Time

Philosophy of time is concerned with questions that have troubled the human mind since the beginning of time and still have not found an answer. For example, how does one imagine and define infinity? Theoretically, nothing prevents time from never ending. Yet everything that people can observe has a beginning and an end, birth and death. That which is not observable or historically recorded falls within the jurisprudence of philosophy and religion. Another fundamental dilemma of philosophy of time arises from the fundamental principle by which all observable processes operate, that is, the principle of causation. If every new event is caused by a preceding event, then what is primal cause? The question of primacy is at the root of the chicken or egg paradox: a situation where something is both the cause and effect. The answer to both the problems is quite simple if one thinks of time as cyclical. First of all, in cyclic time there is no beginning nor an end, thus deeming it infinite. Secondly, there is no need for primary cause because the same event can be seen as both cause and effect.

Another question is whether time existed before the Big Bang and whether time since the Big

Bang has developed linearly, for which even the modern cosmology has no definite answer at this point (Savitt). The puranic tradition sees time as cyclical and infinitely repeated, which can be seen from the fact that *kalpa* is one day of Brahma, implying that this “day” will be followed by night and yet another day. The Judeo-Christian tradition, on the other hand, gives a confined frame to time – from the moment of Creation to the Judgment Day. The entire Western philosophy is based on this tradition and has, therefore, adopted the notion of time as being linear and finite.

Time philosophers who base their theories on general relativity have postulated a finite but unbounded space–time (analogous, in four dimensions, to the surface of a sphere) as far as spacelike directions are concerned, but practically all cosmologists have assumed that space–time is infinite in its timelike directions. Kurt Gödel (“Contemporary Philosophies of Time”), a contemporary mathematical logician, however, has proposed solutions to the equations of general relativity whereby timelike world lines can bend back on themselves. One of the interpretations of this is to imagine the flow of time as going around and around such closed timelike world lines, implying eternal recurrence. As to the universe being created as a result of the Big Bang, there is no reason to deny that the universe (in the philosophical sense of “everything that there is”) existed at an earlier time, even though it may be impossible to know anything of what happened then. There are cosmologies suggesting an oscillating universe, with explosion, expansion, contraction, explosion, etc., ad infinitum (“Contemporary Philosophies of Time”).

The direction of time

Unlike other physical dimensions, such as space, which objects can traverse in any direction, time appears to flow in only one direction – from past to future. At the macroscopic level we experience that many physical processes cannot be reversed in time. For example, if a glass breaks, it cannot reassemble. If an apple falls down due to gravity, it cannot spring back up on a tree. We cannot go back in time, just as we cannot prevent future events. We have memories of the past, but none of the future. We feel we cannot change the past but can influence the future. Thus, in our everyday experience, time seems to be unidirectional, like a vector.

Western scientists and philosophers have proposed various explanations for apparent unidirectionality of time. If we take a causation solution, the direction of time arises from asymmetry of causation. That is, any cause must happen previously to its effect and based on that the order of primacy is established. The trap in this reasoning is that it can easily become circular, as in the chicken-egg paradox. In addition, it does not explain irreversibility of all physical phenomena (Horwich). In Hindu philosophy causality is perceived differently, namely, that effect does not follow the cause, establishing a linear succession, but that the two are inseparable. Consequently, Hindu philosophy completely undermines directionality of time.

If we attempt to solve the problem of unidirectionality using physical laws, the answer becomes even more inconclusive. On the microscopic level, the fundamental physical laws are, in fact, time-reversal invariant. That is, all physical laws can be symmetrically reversed, as if a video recording is played backwards. The second law of thermodynamics are the only irreversible physical law which can be regarded as placing a restriction on directionality of time. It states that the net entropy of a closed system (which our universe is) can never decrease and therefore all things in our universe progress from order to disorder. However, if one believes in the oscillating model of the universe (like in Hindu mythology), that is, the universe being created, destroyed, and created anew (“Contemporary Philosophies of Time”), the second law of thermodynamic can be avoided, which implies that the direction of time can also be reversed. Furthermore, when dealing with quantum mechanics, the definition of time becomes more arbitrary and many phenomena are in fact time-reversible (Horwich).

The relativity of simultaneity

The theory of relativity implies that simultaneity is relative to a frame of axes (“Contemporary Philosophies of Time”). This creates another paradox: If we assume that there is a continual coming into existence of events (as the present rushes onward into the future), a question can be asked “Which

present?" According to special relativity each point in the universe can have a different set of events that compose its present instant. This has been used in the Rietdijk-Putnam argument to demonstrate that relativity predicts a block universe in which events are fixed in four dimensions (Jammer). Such interpretation undermines the validity of temporal succession. It seems that the Buddhist philosophy of time is more accepting of the fact that succession of events is an artificial concept of human perception.

TREATMENT OF TIME IN EARLY INDIAN ART

Types of Visual Narrative in Early Buddhist Art

The difference in perception of time in Eastern philosophy can be clearly illustrated by the use of certain types of visual narrative, specifically found in Early Buddhist and Hindu art. Narration is an important function of art, which plays a central role in early human history. Before the invention of writing, history was passed down orally or in the form visual art, such as carvings, which still serve as an important archeological evidence due to their durability. In fact, the first writing system was in the form of hieroglyphics, which originated as logograms representing words using graphical figures (Houston). Even with the invention of script, visual narrative was often used for communicative and educational purposes, as in the carvings found in early Buddhist monuments (first century B.C. to seventh century A.D.). Soon after the death of Gautama Buddha in 483 B.C., a vast body of literature known as the *Tripitakas*, or "Three Baskets," began to be composed. It was written in Prakrit, the language of the common people, as opposed to refined Sanskrit. This Buddhist canon consists of two sets of legends. One was the life of Prince Siddhartha, who renounced the world and achieved supreme wisdom, being known thenceforward as the Buddha or "Enlightened One." The second was the 550 prior lives (*jatakas*) of the Buddha, in which he came into being in a variety of forms, animal and human, until he was born finally as Prince Siddhartha, and achieved enlightenment, which put an end to his cycle of rebirth.

For the first few centuries after the death of Gautama Buddha, the Buddhist canon was transmitted orally. There were, for instance, *jataka-bhanakas*, reciters who specialized in memorizing and repeating the stories of the previous lives of the Buddha, and *Dhammapada-bhanakas*, who recited the book of moral maxims, the *Dhammapada* (Norman). So when the first surviving Buddhist monuments, such as the stupa of Bharhut in the second century B.C., began to be constructed, the canon was still an oral tradition. The intended audience of those carvings was most likely Buddhist monks, who were already familiar with the stories of the Canon, but required visual representations as an aid to meditation and refreshing of memory. Some of the pictures contained captions or other inscriptions, such as the name of the patron. Perhaps the captions were intended for the literate monks, who used them as prompts when they guided worshipers around the stupa, because at that time literacy could not have been so high that every devotee visiting the shrine could have read these labels. It is interesting, however, that half a century later, on the Sanchi stupa, not a single identifying label exists, in spite of having over 750 names of patrons inscribed on them, and they were rarely used again in Buddhist art. Perhaps this fact could be explained by increasing familiarity of the Buddhist legends as a result of the canon being transformed into written text in at the end of the first century B.C. (Dehajia).

Now I would like to turn to discussion of the distinctive ways in which the Indian artist first presented Buddhist legends to the audience of monks and lay worshipers. Several distinct modes of narration exist in Indian art: monoscenic, linear, continuous, synoptic, conflated, and narrative networks. The different modes of narration co-exist side by side on the same monuments, thus excluding the possibility of one form evolving into another or one form being more primitive than the other. While the function of the each narrative type remains the same – to convey a story, the effect produced by the use of one or another type is quite different.

The most common mode of narration, found both in early Indian art as well as in the classical

world, is monoscenic narrative. According to the definition by Vidya Dehejia who is an expert in classifying various mode of narration found in Indian art, “The monoscenic mode centers around a single event in a story, one that is generally neither the first nor the last, and which introduces us to a theme of action. Such a scene is usually an easily identifiable event from a story, and it serves as a reference to the narrative. [...] The outcome of a story was known prior to its oral telling and prior to viewing its depiction in sculpture or painting. Monoscenic narratives must, of course, contain sufficient narrative content to stimulate the story-telling process in the mind of the observer. The viewer is introduced to the story in the middle of the action, and the coupling of key figures and scenic details must be unmistakable if the viewer is to complete the narrative” (Dehejia). In one word, a monoscenic narrative can be described as a “snapshot”. Examples of monoscenic narrative, such as Bodhisattva Padmapani of Ajanta, can be easily identified.

The series of rock-cut caves of Ajanta present an invaluable piece of evidence about the development of Buddhist architecture and sculpture during the entire period (from second to seventh century A.D.) during which Buddhism prevailed as a dominant religion of India. It is during this time that Buddhist cave monasteries were executed in Ajanta. Among the twenty nine caves found there, five belong to the Hinayana and the rest to Mahayana school. Ajanta caves are famous for their beautiful murals which were miraculously well preserved at the time of their discovery in the early nineteenth century. These paintings provide a lot of information not only about religious life and aspirations of Buddhist followers community, but also about the prevalent worldview and philosophical ideas of that time. In the next sections, I will focus primarily on caves numbers 1, 16, and 17, which contained well-preserved paintings of *jatakas* (stories of previous lives of Buddha) dated around 6th century based on the style of inscriptions (Fergusson).

Monoscenic Narrative: Being in a State versus Being in Action

There is a clear distinction between monoscenic narratives that portray action and those that convey a state of being. “A static mode of monoscenic narration is frequently used by artists to present the viewer with scenes from the legend of the Buddha, when the supremacy of the Buddha is the prime concern” (Dehejia). In this mode, a culminating episode of a story is presented and the focus is thematically on the wisdom and presence of the Buddha. In such depictions, the narrative content is drastically reduced. Rather, the artist presents the result of a narrative episode, often a the situation immediately following that episode. An example of the use of the static monoscenic mode is the portrayal of the miracle at Sravasti, in which the Buddha caused a full-grown mango tree to emerge instantly from a mango seed. The panel focuses on the figure of the Buddha, represented by the parasol-sheltered throne placed below the mango tree, surrounded by worshipers offering him homage. It is the divine power of the Buddha that is highlighted in this narrative, in which action is totally absent. Meyer Schapiro, who discusses differences between representations revolving around "being in a state" and "being in action," establishes that static depictions were regularly used in situations where theological concerns were predominant (Schapiro). As mentioned earlier, in the Buddhist philosophy all things are seen as being in constant changing. Stasis, as such, is only possible momentarily or in the realm of incomposite things and Absolute Time. Buddha in the previously described picture represents an ideal, a symbol of spiritual enlightenment, rather than a historical figure. Therefore, he is presented as being in a state to emphasize the eternal character of his enlightened state at the expense of the events in the life of a human Buddha.

Linear Narrative can be thought of as a series of monoscenic pictures. Each scene is a unit in itself; each event occurs at one particular moment, in one particular space; but together they form a story. Linear narrative contains the repeated appearance of the protagonist at different times and places, but generally each episode is contained within a separate frame or other compositional means (such as painted columns or pilasters) to demarcate temporal divisions. The viewer does not find the reappearance of the protagonist in each unified setting illogical or inconsistent, as usually the episodes are presented in a linear succession. It is rather like a film strip viewed in its entirety on the editing

table. While linear narrative does not exemplify any particular concept of time found in Buddhist philosophy, – conversely, it is more similar to the Western idea of time being unidirectional and composed of discreet moments, each comprising an even of itself, – it is worth while presenting for the purpose of comparison to other narrative modes.

There are few examples of linear narrative at the caves of Ajanta, one of them being *Matru jataka*. Usually linear narratives require a long uninterrupted strip of surface for execution, such as a frieze, and the format of the caves does not have such space. The most spectacular instance of linear narrative may be seen in the friezes, 1260 feet in length, that cover the terraces of the great stupa at Borobudur in central Java, built around 800 A.D. Running around the walls of the first terrace, along the upper section of the wall (the lower depicts the *jatakas*), are a complete series of scenes from the life of the Buddha, commencing with the scene in the Tushita heavens when the Buddha announces that it is time for him to be born on earth as Gautama, and ending with the first sermon. Using the mode of linear narrative, the artist presents his viewer with a sequence of 120 coherent, independent episodes, each contained within the boundaries of a panel, ten and a half feet long and three feet high. The circumambulating pilgrim is presented with a unique opportunity to contemplate the life cycle of the Buddha.

Continuous Narrative

Continuous narratives depict successive episodes of a story, or successive events of an episode, within a single frame, repeating the figure of the protagonist in the course of the narrative. Consecutive time frames are presented within a single visual field, without any dividers to distinguish one time frame from the next; however, temporal succession and spatial movement are generally clearly indicated. In continuous narrative, temporal development is to be understood by means of intrinsic criteria, and requires, on the part of the viewer, an integrating effort of mind and eye. The comprehension of continuous narrative requires awareness that more than one moment of time is presented within a single visual frame, and that multiple appearances of the protagonist indicate successive phases of action. In the words of Otto Pacht, "it is the very essence of continuous narrative to render changes visible by comparing the same person in different movements or states" (Pacht). For Coomaraswamy "the continuously narrative art tends rather to the representation of the Now of eternity apart from temporal and spatial extension, than to the now envisaged by the painter of effects and events" (Coomaraswamy).

An example of continuous narrative can be found in cave seventeen of Ajanta. This is a story from the life of Buddha which demonstrates recognition of Buddha's divinity by people, forces of nature, and animals. Buddha's cousin Devadatta was jealous of him, so he employed sixteen archers to kill the Buddha. But the archers in turn became the devotees of the Buddha. Frustrated, Devadatta himself then tried to kill the Buddha by hurling down a great rock from a peak of the mount Gijjhakuta when the latter was walking down the slopes. The Buddha, however, escaped because two peaks appeared from the ground and arrested the advancement of the rolling rock. Then Devadatta tried to destroy him by setting an enraged elephant Nalagiri on him. The Buddha touched the animal's forehead and the elephant bowed down before him in reverence. The people, further, noticed that the Buddha delivered a sermon on *dhamma* to the elephant (Varma).

At cave seventeen of Ajanta the story of elephant Nalagiri is presented in four scenes that proceed directly from left to right. The first scene shows the palace in which Devadatta is planning the destruction of Buddha. In the second scene king's emissary emerging from the right side of the palace to free the maddened elephant chained beside the stables. The third scene shows the protagonist elephant rampaging through the streets of Rajagriha and immediately to the right, without any spatial separation compositional device, Nalagiri is shown bowing to the Buddha. At first, it may appear that three elephants are portrayed in this composition. A knowledgeable viewer who is well-familiar with the story will be able to recognize that the same elephant is repeated three times to indicate three different moments in time and locations in the city.

Continuous narrative embodies the concept of the flow of time found in Buddhist philosophy. For one thing, it shows that everything is in the state of becoming, as opposed to stasis. In the narrative described above, this concept is illustrated by showing elephant Nalagiri in different attitudes, enchained, enraged, and pacified. Secondly, even though both continuous and linear narrative clearly indicate temporal direction (the scenes are showed, as they are happening, from left to right), there is an importance conceptual difference in representation of time between the two modes. In linear narrative, the scenes are separated by each frame into discreet units of time; in continuous narrative, on the other hand, there are no units of time. The time does not stop; instead, it flows continuously.

Synoptic Narratives

In the synoptic mode of narration, multiple episodes from a story are depicted within a single frame, but their temporal sequence is not communicated, and there is no consistent or formal order of representation with regard to either causality or temporality. There are no hints as to where the story commences or in what direction it proceeds. The multiple episodes of a story generally contain the repeated figure of the protagonist. Synoptic narratives are usually presented within relatively circumscribed spaces, so that a viewer standing a few feet away from the wall is able to visually encompass the entire set of scenes comprising the story. One of the implications of this method, as indeed of most visual narration in early Buddhist India, is that the artist relied on a knowing viewer to be able to restore the sequence of depicted events.

Cave sixteen of Ajanta presents Chaddanta jataka. This is a story about a Bodhisattva who was born as white elephant with six tusks that emitted colored rays of light near a lake Chaddanta in the Himalayas. The elephant had two favorite queens, Cullasubhaddā and Mahāsubhaddā. Once the elephants bathed in the lake and found a large lotus with seven shoots and offered it to the white elephant, which he gave to his wife Mahasubhadda. The other wife, Cullasubhadda conceived a grudge against him. Thenceforth she took no food and died, and came to life again as the child of the queen of the Madda kingdom, and was named Subhaddā, and was married to the king of Benares. The queen, under a pretense of being sick, asked the king to fetch her the six tusks of the white elephant. The king sent his hunter to kill the white elephant. When the hunter could capture the elephant, the elephant himself agrees to saw off his own tusks. When the queen held the tusks, she remembered her previous life and realized her husband's love, and died, brokenheartedly.

The mural in cave number sixteen at Ajanta which presents the Chaddanta *jataka* in the form of synoptic narrative is partly damaged. Nevertheless, at least seven different scenes from the story can be identified within the single frame of the painting. Several key figures of the story are repeated: the protagonist (white elephant) is repeated three times; his wife is shown both as elephant Cullasubhadda and as queen Subhadda; the hunter is also shown thrice. The story commences in the upper left-hand corner with elephants bathing in the lake. Below it, queen Subhadda is in the palace holding the elephant's tusks. The right-hand section of the mural portrays the hunter's acquisition of elephant's tusks in three scenes. The artist portrays the hunter on three different occasions, while the elephant is only shown once. First, the hunter shoots his arrows at the elephant; then he bows to the elephant who saws off his own tusks; finally, departing with the tusks, the hunter looks back at the same elephant.

Synoptic narrative mode undermines linear succession of the episodes. It appears that the viewer must be quite familiar with the story to make out the progression of events. At the same time, a consequence of having all scenes of the episode being shown in one visual field is that the viewer may stumble on its conclusion at any point. The use of synoptic narrative, therefore, implies that the sequence of events is unimportant; what is important is the outcome of the story and the moral message it conveys. The white elephant's selfless act deserved him another birth as a bodhisattva and eventual liberation from the cycle of rebirth. While the episodes of the white elephant's life provide the context for his act of sacrifice, it is this act that is the central message of the story. Life is transient, but the acts that we commit in this life can yield us a shortcut to understanding and becoming Eternity. Therefore, it seems even advisable that the viewer comes across the final scenes of the elephant's sacrifice while his

eyes are searching the picture in attempt to trace events of the story from its beginning to the end, as a reminder of the bigger purpose of *jatakas* – describing previous lives of the Buddha which led his soul to final liberation.

Conflated Narrative is similar to the synoptic mode. However, “while multiple episodes of a story or multiple scenes of an episode are presented, the figure of the protagonist is conflated instead of being repeated from one scene to the next” (Dehejia). This characteristic overlapping manner of presentation undermines temporal succession even further because in addition to not having a clear temporal direction in which the action proceeds (scenes tend to “jump around” the figure of the protagonist), the protagonist himself is not repeated. Consequently, it is easy for an unknowing viewer to mistake the repetition of supporting characters which indicates different points in time for multiple figures in the same scene who simply look alike.

One of the paintings in cave number one at Ajanta presents an episode from the life of the Buddha titled “the Assault of Mara” (Temptation of Buddha). In this story Siddhartha made a solemn vow that though his bones wasted away and his blood dried out, he would not leave his seat under a Bodhi tree. After forty-nine days, he was surrounded by a host of gods and spirits awaiting for his enlightenment. The gods fled when Mara, a demon of the sensual pleasure, arrived to break the resolution. Mara disguised himself as a messenger and told Gautama that his cousin attacked his land and put his father in prison. When Gautama showed no signs of disturbance, the demon attacked him with whirlwind, flood, and earthquakes. But the Buddha-to-be just sat there, cross-legged and unmoved. In evidence of his divine benevolence, he touched the earth with his hand and the earth thundered: “I am his witness”. Then Mara called his three beautiful daughters, Tanha, Rati, and Ranga (desire, pleasure, and passion), who sang, danced, and offered him a universal empire (Varma).

This episode of the life of Buddha was a popular theme among the artists of that age. The painting at cave one presents a central figure of the Siddhartha seated in a meditative position under a Bodhi tree, his hands in the *bhumisparsa mudra* (right hand pointing towards the earth). On his left, demon Mara is drawing a bow in attempt to disturb the act of meditation. Above him, more demons are attacking. Below are Mara's daughters, hitting three drums. Mara appears again on the right side, disappointed in his failure. Obviously, the figures depicted around the figure of Siddhartha appear in the story at different times, while the Buddha is always present. Here, again, the Buddha is shown as “being in a state” – his figure larger than other, it occupies the center of the composition; his expression exemplifies serenity and non-attachment; while the other figures of the story are shown in action, but they are significantly smaller and their reappearance in different regions of the picture makes an impression that this action will not last. The use of conflated narrative in this painting even further accentuates the contrast between the eternal nature of Buddha and the impermanence of the worldly calamity. It also reinforces the concept that temporal succession of events is unimportant and that everything that has happened in the past is forever preserved in the Book of the Universe.

Narrative Networks, according to Dehejia, are “A complex variety of story-telling, which may be described as a system of networks”. The most ambitious narrative sequences are found in the residential viharas at Ajanta, namely, in the cave number seventeen. The entire side wall of the cave, interrupted by the doorways that lead into cells for individual monks, is given over to the depiction of a single narrative, and the result is so complex that several murals still remain unidentified. It is about these narrative networks that James Fergusson wrote: “They are divided, too, into separate acts or sections in a way that is sometimes perplexing” (Fergusson).

Cave 17 at Ajanta is a spacious vihara some seventy feet square produced under the patronage of Prince Upendragupta, a feudatory of the Vakataka king Harisena who dominated the region in the sixth century (Schlingloff). It contains several clues as to where a story is likely to commence, and where one might expect it to conclude, and it appears that only an intimate knowledge of the Buddhist texts popular in the fifth century would enable one to unravel these sequences. The story of Simhala, told in twenty-nine scenes, extends forty-five feet along the central portion of the right wall of the cave,

covering the entire thirteen-foot span from floor to ceiling. Though the protagonist, the merchant Simhala, is repeated in several scenes, there is none of the coherence that accompanies continuous narrative, with its clear depiction of temporal succession and spatial movement. Instead, the action moves across the forty-five feet of wall in an unpredictable manner, commencing at the lower level of the right end and moving upward, then working its way across the upper segment of wall to the left where it meanders downward, finally culminating in the central section of the available space. Within each of these three segments - right, left, and center - the action moves in crisscross fashion, and no specific pattern emerges from a close study of the painted wall. In fact, one is confronted with a complete network of movement in space and time.

The story of Simhala is as follows: Simhala and fellow traders ended up shipwrecked on island. The witches (*Rakshasis*) who inhabited the island transformed themselves into beautiful women and entice traders to live with them. When Simhala discovers imprisoned merchants in an iron chamber, he sees a dream in which he is told that only the magic horse Balhala can save them. Balhala agrees to fly traders to India, but tells the merchants that if they look down with longing at the witches, they will fall and be devoured by them. All of them perish except for Simhala who alone reaches home. Simhala's witch-wife arrives in India with her son, who he rejects her as a witch. The king of the land takes her into his harem where she admits other Rakshasis who devour the king and members of his court. The people declare Simhala their new king. Simhala takes his army to the witches' island and defeats them.

According to Dehejia's interpretation of this narrative network, the basic arrangement of the Simhala story across the wall of the cave may be viewed in terms of geographical relationships. She proposes that "The right third of the narrative takes place on the witches' island, and the left third is located in the palace of the king. The central area, containing the conclusion of the story, as well as earlier episodes relating to Simhala, is space that belongs to Simhala. The upper zone contains Simhala's home, the central zone his coronation, while the lower area depicts the climactic confrontation between Simhala's army and the hordes of witches". Yet, it would appear that in certain ways the artists of this extensive narrative failed to achieve narrative coherency. There are, for instance, multiple points of entry into the story of Simhala, and thus too many immediate options to the viewer. In addition, if one walks around the cave in the circumambulatory mode, such movement will bring us via the conclusion of the story to its commencement. "Perhaps the artist's intention was merely to have the viewer recognize the story and view its major episodes, rather than follow its detailed denouement" (Dehejia).

The second major narrative in cave 17 is the well-known Vessantara jataka, the various episodes of which are impossible to mistake. Yet the mural depicting this story along forty-five feet of the left wall of the cave, directly opposite the Simhala legend, presents the viewer with a number of problems. Though the story commences on the left and moves gradually across the wall to the far right, the often achronological and apparently random arrangement of the episodes is curious. For instance, the scene depicting the evil brahmin Jujuka asking Vessantara for his children is placed high up on the wall above the doorway of the third cell, while the actual gift of the children, with the pouring of water to legitimize it, is placed at ground level beside that same doorway. It is also strange, given the expansive space at the disposal of the artist, that the gift of the state elephant that resulted in the banishment is not depicted, nor is the giving away of Madri. The events are not arranged geographically, as in the case of the Simhala narrative.

Dehejia proposes that the artist appears to have conceived of the story in terms of thematic clusters, which he placed at an easily readable eye-level: "Between doorways 1 and 2 is the gift of the horses; between 2 and 3 is the gift of the chariot; and between doorways 3 and 4 are scenes relating to the gift of the children. All acts of giving (charity is the moral exemplified by this tale) are thus in readily viewable locations".

From reading these narrative networks, one can gather that the temporal succession is of little

importance to the story. What is more important, is the moral message, as in the case of Vessantara jataka. In the story of Simhala, the geographical aspect is more important. The message that is being reiterated by the use of narrative network mode is that time is less durable than the moral message and less real than spatial arrangement. In addition, if the viewer is familiar with the story and is simply recollecting it from the visual prompts presented, it is not necessary to provide a clear time line of the events as would be in the case of telling a new, unfamiliar story. Alternatively, one may argue that the entire concept of time succession of the past events is irrelevant because for the Buddha, all time, past and future is immediately present (see above). The viewer who aspires to be enlightened should also be able to see all events equally distanced from his position of outside the circle of time.

Shiva Nataraja

“Hundreds of years ago, Indian artists created visual images of dancing Shivas in a beautiful series of bronzes. In our time, physicists have used the most advanced technology to portray the patterns of the cosmic dance. The metaphor of the cosmic dance thus unifies ancient mythology, religious art and modern physics” (Capre)

The much venerated sculpture of the dancing Shiva, known as Shiva Nataraja, is regarded the iconographic masterpiece of Indian art. The iconographic type of Shiva Nataraja that was widely used during the reign of Chola dynasty of Southern India from ninth to thirteenth century AD was developed based on the ancient Hindu texts. Shiva's dance symbolizes the act of cosmic creation and portrays Shiva simultaneously as Creator, Preserver, and Destroyer. He is standing within a ring of fire, which represents the total universe, finite and cyclical, and all its energy. Shiva Nataraja is depicted having four hands. In his upper right hand he holds damaru, a hand drum responsible for the first sound of creation. It issues a rhythmic sound, like the sound of breath, vibrations of thoughts, or electromagnetic waves permeating the Universe. The same rhythmic process is maintained at the subatomic level, where particles constantly alternate between the stated of energy and matter. Fritzof Capra, a German physicist, wrote in praise of Shiva Nataraja, “every subatomic particle not only performs an energy dance, but also is an energy dance; a pulsating process of creation and destruction...without end...For the modern physicists, then Shiva's dance is the dance of subatomic matter. As in Hindu mythology, it is a continual dance of creation and destruction involving the whole cosmos; the basis of all existence and of all natural phenomena”. In the corresponding left hand, Shiva holds a flame, which symbolizes destruction or transformation. Thus, he is in possession of the powers of creation and destruction, which are an inseparable cyclic process, both the cause and effect of each other. The flame in Shiva's left hand can also be seen as the light of creation – the same energy and matter that the Universe (circle of fire) is composed of. This metaphor of creation finds a parallel in the modern physics model of the appearance of the Universe as a consequence of the Big Bang, an explosion accompanied by sound, heat, and light.

The lower left hand is shown in a gesture of assurance (*abhaya-mudra*) to indicate the preserving aspect of Shiva as well as a promise for salvation, or moksha. The other right hand points to a dwarf-like demon of ignorance under Shiva's leg. Its size and name (Anu, which also means “atom”) indicate its minuteness of ignorance. In Indian, unlike in Greek, philosophy ignorance is not an innate condition of the mind. Conversely, the true Self (Atman), which is identified with Brahma, knows everything. Ignorance, therefore, is separation from the Whole (Brahma). In this separation, the self is small and ignorant; while in reuniting with Brahma, the true Self is infinitely large and in possession of all knowledge. The two hand gestures together create a logically connected message: “Through destroying ignorance and realizing one's true self, one will reunite with Brahma and achieve *moksha*”.

The conventional interpretation of such portrayal Shiva Nataraja is that Indian deities are depicted having many arms to show their divine power (Freer Gallery of Art and Arthur M. Sackler Galler). However, as Richard Stromer points out, “his [Shiva's] seemingly many arms and legs” may

simply be a representation of the rapid movement of the limbs. A more sophisticated interpretation goes back to accepting many aspects of Shiva: Creator, Preserver, and Destroyer. According to Hindu philosophy, every thing or being is simultaneously a composite of all its aspects (see above). Although the acts of creation, preservation, and destruction are temporally separated in our perception, in the realm of Absolute Time, where cosmological events take place and gods operate, all three events are happening simultaneously and perpetually. To take this idea one step further, the simultaneity of creation and destruction takes away the causal relationship between the two, which goes in line with the notion of interdependence of cause and effect in Hinduism.

The Birth of Brahma in *Sheshashayee Anant*

A sculptural composition that comes most closely to portraying Absolute Time is the one which depicts the Hindu myth of the birth of Brahma. One of the caves at Ellora contains a sculptural relief known as *Sheshashayee Anant* (translated as “Infinity lying on Balance”), which depicts this mythological episode where, at the end of one cycle of existence of the universe, lasting 100 years of Brahma (311 trillion 40 billion years), in the interval between the dissolution of the universe and its new creation, Vishnu falls asleep and sees the image of the old world in his dream. According to Hindu cosmology, the universe cycles between expansion and total collapse into a concentrated form, a point called *bindu*. The universe is equated with Brahma and, as a living entity, is bound to the perpetual cycle of birth, death, and rebirth. After the destruction of the Universe (death of Brahma), all that is left is the cosmic serpent *Shesha* (meaning “remainder” in Sanskrit). In the sculpture at Ellora, four-armed Vishnu is shown reclining gracefully on the spiral coils *Shesha*, seven hoods of the serpent shaped like a canopy over Vishnu's crowned head. His consort Lakshmi is massaging his right leg and two attendant figures stand behind her. Various gods and celestial beings are hovering above. A lotus stem rises from Vishnu's navel and Brahma appears in the middle of the flower, with Vedas in his hand. He creates the new universe, based on the dream of Vishnu, identical to the previous one, which will also last for a hundred years of Brahma, which is one *Nimish* (blink of an eye) of Vishnu, repeating the cycle on to eternity (Godin). The whole composition fashioned with a masterly skill, breathes an atmosphere of serene calm and an agitated tension, making it a superb piece of art.

Every detail of *Sheshashayee Anant* sculpture is full of symbolism. Lotus is chosen as the most complete cosmic symbol, used in both Buddhist and Hindu iconography. “It's dynamic process (the bud represents the past, the open flower the present, and the seeds, the future) and it's cyclical rhythm (the lotus flower opens out with the day and closes up at night – an image of the cycle of rebirth, *samsara*) connote the totality of the universe in it's temporal dimension”. In addition, its petals, pointing in every direction, represent the totality of the universe in the spatial dimensions (Godin). Thus, lotus growing from Vishnu's navel represents the unity of time and space, which comprise the physical aspect of the Universe. Brahma, in turn, represents the Universal Consciousness, the divine aspect of the Universe. Vedas in his hands represent timeless knowledge, universal truth which permeates the Universe. The statue thus portrays the Universe as being comprised of both the physical universe and the divine energy. The serpent on which Vishnu is reclining signifies Absolute Time, which is like a snake, having a beginning (past), middle (present), and end (future), yet remains one inseparable thing (Indurkar). Its coils imply that large spans of time are cyclical, whereas short spans of time are perceived as linear. The name of the serpent (*shesha*, meaning “remainder”) implies that, at the end of the universe, all that is left is Absolute Time, because Absolute Time is eternal.

The *Sheshashayee Anant* sculpture also prompts the viewer to contemplate the scale of time. In ancient Indian texts, intervals of time are defined from the tiniest moment to the length of existence of the universe, and beyond that. The smallest unit of time is *pramanu* (half of an *anu*), where *anu* means atom. There are 3 280 500 000 *parmanu* in one Day and Night, which means that one *parmanu* is equal to 1/3678th of a second. Increasing units of time are defined in the Vedas, including day and night, fortnight, month, seasons, year, which are all cyclical. Consequently, larger units of time, such as

kaliyuga (432 000 years) are also repeating. The length of *kaliyuga* is defined based on the fact that every 432 000 years the seven planets come in one straight line. Last time this happened was at 14:27:30 on 20th February 3102 B.C. This is known as the beginning of the present *kaliyuga*, that is the day on which the Mahabharata war ended. A yet larger span of time is the *manvantar* (306.7 million years), considered to be time taken by the Sun to go round our Galaxy. Fourteen *manvantars* and fifteen *sandhyansh* combined make up one *kalpa*, or a day of Brahma. This period of 4.32 billion years this was the time considered to be taken by the Galaxy to go round the Milky Way. 4.32 billion years is an unimaginable length of time for human imagination; yet, a hundred days of Brahma is just one *Nimish* – a blink of an eye – for Vishnu (see Appendix 1). Thus in this sculpture Vishnu himself represents infinity, or *Anant*.

CONCLUSION

As I have attempted to prove by many examples presented above, philosophical notions of time existing in a society inevitably find their expression in visual art. In fact, I think that visual art is best suited for conveying the complex nature of time because it speaks to the viewer not by means of verbal logic but by appealing to the abstract thinking, unrestricted by linguistic boundaries. Without the use of words, these artworks are capable of conveying complex concepts, such as inseparability of space and time, through elegant and seemingly effortless execution. The nature of time is explored in the sculptural composition depicting the birth of Brahma and in the statue of Shiva Nataraja. Even when the artworks are not explicitly dealing with the subject of time, the notions of time that were in the mind of the artist and the intended audience are indirectly perceived through the use of certain narrative modes which undermine the importance of time and proclaim its flexibility and relativity.

Time has been a topic of interest in Indian philosophy for a very long time, as indicated by the fact that a standard scale of units of time that was developed (see Appendix 1). Time scale used in Indian cosmology is so wide, ranging from a milli-fraction of a second to trillions of years, as to appear beyond the reach of human imagination. These divisions of time are based on precise astronomical observations, not just of the Earth going around the Sun, but on a more reliable galactic clock. The recurrence of seven heavenly bodies (Sun, moon, Mercury, Venus, Mars, Jupiter, and Saturn) coming in a straight line every 430 000 years was taken as the basic unit, *yuga*. All other units of time are derived as a multipliers or fractions of a *yuga*. Indian philosophy acknowledges that the way time is being perceived by the human mind (as linear and unidirectional) does not reflect its true nature. Cosmological time is presented as cyclical, implying eternal recurrence of all processes, including creation and destruction of the universe. Moreover, the flow of time is said to be an illusion (*maya*), as time, being inseparable from space, can be likewise traversed. The most fascinating fact is that Indian notions of time that are several thousand years old are in line with the latest development in the modern physics.

I personally find Indian art extraordinarily beautiful, not only in its perfect aesthetic form, but also in its deeply philosophical content.

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Appendix 1

LINEAR MEASURE OF TIME IN ANCIENT INDIA by Mr. Udayan Indurkar

2 Paramanu	= 1 Anu
3 Anu	= 1 Trasarenu
3 Trasarenu	= 1 Triti
100 Triti	= 1 Vedh
3 Vedh	= 1 Lav
3 Lav	= 1 Nimesh
3 Nimesh	= 1 Kshan
5 Kshan	= 1 Kashtha
15 Kashtha	= 1 Laghu
15 Laghu	= 1Nadika
2 Nadika	= 1 Muhurt
30 Muhurt	= 1 Divasratra (Day and Night)
7 Divasratra	= 1 Saptah (Week)
2 Saptah	= 1 Paksha (Fortnight)
2 Paksha	= 1 Mas (Month)
2 Mas	= 1 Ritu (Season)
3 Ritu	= 1 Ayan
3 Ayan	= 1 Varsha (Year)

There are 3280500000 Parmanu in one Daynight.

There are 86400 seconds in 12 hrs today that means 1 Parmanu = 1/3678th of a second.

1 Kaliyug	= 432000 Varsha (Years)
2 Kaliyug	= 1 Dwapar yug = 864000 years
3 Kaliyug	= 1 Treta Yug = 129600 years
4 Kaliyug	= 1 Satya Yug = 1728000 years also known as Sandhyansh

4 Yug = 1 Chaturyug = 4320000 years
71 Chaturyug = 1 Manvantar = 306700000 years
14 Manvantars + 15 Sandhyansh = 1 Kalp = 4320000000 years (4.32 billion)
1 Kalp = 1 day of Brahma
2 Kalp = 1 day night of Brahma
100 years of Brahma = 1 Nimish of Vishnu (Nimish is time taken to flutter our eyelid once)
After Vishnu starts the time of Rudra and so on.
Thus 100 years of Brahma comes to 31104000000000 years.

Explanation of above

After every 432000 years the seven planets come in one straight line.

Last time this happened was at 14:27:30 pm on 20th February 3102 B.C.

This is known as the beginning of the present Kaliyug, that is the day on which the Mahabharat war ended.

The Manvantar consists of 306700000 years, this was considered to be time taken by the Sun to go round our Galaxy.

The Kalp is Brahma's day. This period of 4320000000 years this was the time considered to be taken by the Galaxy to go round the Milky Way.