CHAPTER I

The Winged Chariots and the Ticking Clocks

1.1. The Phenomenon of Time

Time and space have always occupied a central position in human thought throughout the centuries. Formulations and debates about time have been there ever since the beginning of civilization. In the modern world, these debates and theorizations have gained a prominence like it never had before. The phenomenon of time continues to engage the interest of the artist, philosopher and the scientist. A certain sense of time and space always lie behind every human endeavour, mundane or unearthly. It is one of the fundamental aspects of the universe, though it cannot be directly experienced. The cognition of time as a reality is made possible through various cultural models constructed by individual civilizations from age to age, so to speak. Ancient peoples imagined time as gods or goddesses, philosophers described it as the movement of the heavenly bodies and so on. Some ancient traditions imagine it as a self generating god.

In his famous poem ‘To His Coy Mistress’ Andrew Marvell speaks of time’s intrusion into human life thus:

But at my back I always hear
Time’s winged chariot hurrying near;
And yonder all before us lie
Deserts of vast eternity. (21–24)

For him time is the dealer of death that puts an end to life’s enjoyment, opening the door to a barren eternity. Shakespeare also speaks of time in the same vein in his sonnets. There are frequent references to time-measuring devices such as
the clock (sonnet 12) and the hourglass (sonnet 22) in his poems as well as the plays. The poet describes the corrosive effects of time in expressions such as “nothing against Time’s Scythe can make defence” (sonnet 12), “devouring Time” and “swift–footed Time” (sonnet 19); against which only love and poetry can hold out.

The flexibility of the subjective experience of time is brought forth in an amusing conversation between Orlando and Rosalind in Shakespeare’s As You Like It. Rosalind tells her lover: “Time travels in divers paces with divers persons. I’ll tell you who Time ambles withal, who Time trots withal, who Time gallops withal and who he stands still withal” (III.ii, 310–13), and goes on to explain specific instance for each type of experience.

Time is a vital and inescapable element in human life; something that defines and controls our existence; yet perhaps the most enigmatic and engaging of philosophical problems. With the dawn of modern science in the 17th century, this discussion intensified at all levels. Art and literature have consciously tried to express these concerns. Modern art and literature attempt to turn time and space experience into an integral part of their methods and not merely a subject of contemplation. The obsessive prominence it has gained in modern art and science has annoyed some thinkers.

Man has conceived and narrated time in various forms of discourse, not the least of which is fictional narrative – mythology, poetry or the novel. Its cultural significance can be understood if we study the historical and philosophical perspective on time – thought through the centuries. However, a complete and comprehensive analysis is beyond the scope of this work. For the purpose of upstaging the main thesis of this work it is necessary to make a survey of the
evolution of the concept of time, focusing mainly on Western philosophy and science. We may begin with some definitions of this elusive phenomenon which will take us into the very history of human thought.

1.2. The Problem of Definition

What is time? As the great thinker of the church St. Augustine puts it: “If no one asks me, I know; if I want to explain it to someone who does ask me, I do not know” (288). We have a number of answers to this question. Plato (4th century BC) described time as the circular motion of the heavens. Plato’s disciple Aristotle (384 – 322 BC) modified this definition declaring that time is not motion but the measure of motion. St. Augustine formulated time as existing independently of motion and measurement. To him it was an extension of the mind. Immanuel Kant, the German idealist philosopher, approached the problem from a different angle. In his The Critique of Pure Reason (1781), Kant described it as subjective and spoke of it as the form that the mind projected upon the external things-in-themselves. In the section titled ‘Transcendental Doctrine of Elements,’ he discusses both space and time arguing against the purely empiricist approach, describing time and space as possessing both “empirical reality” and “transcendental ideality” (Kant 36 – 43). For some modern thinkers time is the dimension of causality. There are still others, like John Ellis McTaggart who argued that time had no existence at all.

New Webster’s Dictionary of the English Language defines time as “the system of those relations which any event has to any other as past, present, or future; indefinite continuous duration regarded as that in which events succeed one another; duration regarded as belonging to the present life as distinct from the life to come, or
from eternity; a system or method of measuring or reckoning the passage of
time…”(1030). The Encarta Dictionary refers to it as a “system of distinguishing
events: a dimension that enables two identical events occurring at the same point in
space to be distinguished, measured by the interval between the events”.

Oswald Spengler points out the limitations of the human mind in defining and
mastering time. He says:

To man in his waking state his proper life, progressive and constantly
self–fulfilling, is presented through the element of Becoming in his
consciousness–this fact we call “the present”– and it possesses that
mysterious property of Direction which in all the higher languages men
have sought to impound and – vainly – to rationalize by means of the
enigmatic word time. (54)

St. Augustine’s views on the human experience of time are reflected in
Spengler. Spengler’s contemporary Henri Bergson distinguished between time as a
public convention and time as La durée (duration). The durée cannot be measured.
Both Bergson and Spengler saw the modern notion of time as an operation of the
spatialising intellect to impose an artificial structure on the process of becoming
which “has no number” (Spengler 95). This finally alienates us from the actual
experience of time.

We can count, measure, dissect only the lifeless and so much of the
living as can be dissociated from livingness. Pure becoming, pure life,
is in this sense incapable of being bounded. It lies beyond the domain
of cause and effect, law and measure. No deep and pure historical
research seeks of conformities with causal laws – or, if it does so, it does not understand its own essence. (95)

The above arguments became points of endless debates in the 20th century. The generally perceived properties of time are:

1. It is irreversible. 2. It is marked by change. 3. It governs the notions of chance and probability. 4. It cannot be perceived directly or in a ‘pure form’. 5. It is inseparable from the notion of space. 6. It leaves its marks upon all matter. 7. It is (apparently) infinitely divisible and infinitely extensive.

1.3. The Time-Space Conundrum

A crucial observation about human perception of time is that we normally are not able to perceive ‘pure time’ that is, time cannot be perceived independently of space and motion. This is because of two factors affecting human existence: first, the fact that human life is lived ‘in time and space’. Hence all our thought processes and the very business of life is conditioned by a ‘within-time-ness’ and a ‘within-space-ness’. In other words, it is impossible to stand outside of space and time and talk about them. “They are \( \textit{\'a priori} \), because all ordered experience involves and presupposes them. Without them, sensations could not grow into perceptions” (Durant 270).

The second limitation is that human language is conditioned by the realities of time and space. Since language cannot be separated from thought, or, in other words, our thoughts can be formulated only in a language, time cannot be articulated in language or any other medium of human expression, independent of it. “The fundamental difficulty (and advantage) is that man understands time in the same way
he understands his language and himself: from within. Located indeterminately in a
time-space continuum, man can offer definitions of time and space only in a manner
that is incomplete, contradictory or tautologous” (Harmon 128).

To restate the case: Space and time are two realities of human experience, two
realities that surround all creation; yet they are so elusive that in ordinary human
terms it is difficult to speak about them except in relation to empirical data connecting
these to ‘objects’ and ‘movement’. All human thought and language, all forms of
expression directly or indirectly imply them, though we may not always be conscious
of the fact. Objects occupy space and space can be measured using our public
standards of measurement. Things move and the movement can be measured in terms
of distance covered in a certain period of time using a chronometer and this is what
the common man understands as time. But such measurements differ greatly from our
subjective perceptions of distance and time.

In ordinary discourse we cannot speak of one of these dimensions without
reference to the other, which in turn shows the congruity between time and space as
concepts. The deeply entrenched and inviolable idea of the linking of time and space
through the phenomenon of motion was overthrown a hundred years ago by Albert
Einstein and Hermann Minkowski theory who proposed the single concept of “space-
time”. In spite of that, even today, commonsense notion holds on to the idea of time
and space, though aligned, as mutually exclusive. They are related to each other,
through the phenomenon of motion, but they do not interact with each other. This
view is sometimes referred to as the ‘container view’ which holds the notion that in
and of themselves time and space are media in which all universe exists. They are
fundamental to all existence. In everyday experiences and in the physical world as
seen in the light of Newtonian physics, space and time are pervasive but distinct features of the physical world. Of course, measurements of time involve spatial measurements. The “measurement” of time by a pendulum is done by the number of oscillations the pendulum makes through space. The measurement of time is made possible by the spatial movement of the needle over the calibrated face of the watch or clock; the spatial position of the hands of the clock tells us what time it is.

The converse is also true because spatial measurements also involve time measurements, although usually only implicitly. For example, when one measures the length of an object, one must either know that the object has not changed its size over time or one must perform all the measurements simultaneously. Time-space notions affect multiple forms of human expressions in any media. Human expression on the other hand can affect the way in which these are perceived.

Human language itself is constructed in such a way as to deal with these realities. Some of the expressions in language are applied equally to both the phenomena. When we say something happened ‘before’ or ‘after’ something, we refer to events in time. The same preposition can be used to denote spatial relations, saying something is located ‘before’ or ‘after’ something else in space. Prepositions such as ‘in’, ‘on’ and ‘at’ can be used to express relations in time as well as space. The point of this argument is that human language itself is constructed to deal with spatio-temporal realities and is limited by them. The linearity of time from the past to the future “is inscribed in the syntax of the Western languages, most of which carefully discriminate present, future and past tenses though there is no necessity for this” (Easthope 182). We measure time in relation to space and vice versa. It is impossible to perceive pure time and pure space.
Oswald Spengler raised his objection to the way space and time are expressed in common thinking. He noted that “Kant and the rest notwithstanding, it is impossible to bring time with space under one general critique” (122). He points out the basic difference between these two: “Space is a conception, but time is a word to indicate something inconceivable, a sound–symbol, and to use it as a notion, scientifically, is utterly to misconceive its nature” (122). It is allied to life in being organic “indivisible and irreversible, once and uniquely occurring and its course is entirely indeterminable by mechanics” (122).

In the early 20th century, Albert Einstein’s Relativity Theory revolutionized the scientific and philosophical thinking about time and space. Einstein proposed time as a fourth dimension of space. This argument was newly generated by Einstein though it did not immediately become a comprehensible popular idea. The idea of simultaneity which it suggested was not easily understood. But it is possible to demonstrate this as a matter of common experience in the contemporary world, as Sharon Spencer does in the following observation:

... on earth today there exists virtually every historical period in the “progressive” history of man, ranging from the primitive culture of New Guinea to those societies whose technologies enable them to send men to walk on the moon. All these historical periods are simultaneous. What has changed is not their existence in time, but our awareness of their existence, as awareness that is made possible by the multiplication of perspectives achieved by cameras, radios, television, and tape recorders. Every location in space, every lieu, is infused with its own time, or simultaneity of time. In an important sense time has
lost its meaning apart from its aspect as a function of space as perceived by some individual from a changing point of view.

(Introduction xix – xx)

1.4. a. Time (and Space) Consciousness – Different Notions

Broadly speaking, there are two ways of understanding the phenomenon of Time: The speculative/philosophical and the mythopoeic or mythic. It may be added that our modern notions of these include the intuitive or commonsense views.

“Mythic time is of three principal kinds: cosmogonic, astronomic, and human. Cosmogonic time is the story of origins, including the creation of the universe. Human time is the course of human life. Both are linear and one-directional. Astronomic time is experienced as the sun’s daily round and the parade of seasons; its nature is repetition” (Tuan 131).

We have already seen that time is allied to space in the common man’s perception and articulation. According to Oswald Spengler, time consciousness is something that distinguishes the civilized man from the primitive man. He observes:

For the primitive man the word “time” can have no meaning. He simply lives, without any necessity of specifying an opposition to something else. He has time, but he knows nothing of it. All of us are conscious, as being aware, of space only, and not of time. Space “is”, (i.e. exists in and with our sense-world) – as a self-extension while we are living the ordinary life of dream, impulse, intuition and conduct, and as space in the strict sense in the moments of strained attention. “Time”, on the contrary, is a discovery, which is only made by thinking. We create it as an idea or notion and do not begin till much
later to suspect that we ourselves are Time, inasmuch as we live. And only the higher cultures, whose world-conceptions have reached the mechanical-Nature stage, are capable of deriving from their consciousness of a well-ordered measurable and comprehensible spatial, the projected image of time, the phantom time. Which satisfies their need of comprehending, measuring and causally ordering all.

(122)

In other words, it is possible to imagine a stage in human civilization when men lived blissfully unconcerned or unaware of the ‘onslaught of time’ like the civilized man did. The primitive man did not hear the winged chariot drawing near, nor did he (possibly) dream of the deserts of eternity!

According to classical physics, time and space can be viewed as ‘backgrounds’ or frames of reference within which life is lived, or things happen. This means that space is something ‘in which’ everything happens and time is something that arranges them in a progression. Of course, these notions were based on what we may call ‘common sense’. This view developed in classical thought and perpetuated by Newtonian physics implies that time and space are separate from each other and that events happen ‘in them’ and they do not affect each other in any way. Newton’s Philosphiae Naturalis Principia Mathematica (1687), “probably the most important single work ever published in the physical sciences” (Hawking 5), was indeed a reassertion of the classical notions relating to time and space. Newton believed that “‘Absolute space, in its own nature, without relation to anything external, remains always similar and immovable’ and “absolute, true and mathematical time, of itself,
and from its own nature flows equally without relation to anything external” (Gamow 90).

The weakness of the Newtonian mechanistic view of time is that it follows the classical theories which sprang not from experimental science but from commonsense notions. “In fact the belief in the correctness of these classical ideas have been often held by philosophers as a priori, and no scientist (not to mention lay men) ever considered the possibility that they might be false, and thus in need of reexamination and restatement” (91).

However, the common sense notion is sufficient for the ordinary man to make sense of his life, though modern physics has undermined it and has radically reconstituted the age old ideas. Stephen Hawking tells us why: “… we still use Newton’s theory for all practical purposes because the difference between its predictions and those of general relativity is very small in the situations that we normally deal with” (11). Besides, “Newton’s theory also has the great advantage that it is much simpler to work with than Einstein’s!” (11).

1.4.b. Kronos and Kairos: Humanising Time

Kronos (or Chronos) and Kairos are two Greek words that refer to two levels of time experience which can be considered basic to the human condition. They refer to two mythical conceptions relating to time. Kronos is the mythological god represented as an old man. This god symbolises the sequential or linear time. Kronos was objective time quantified or measured by the seconds, minutes and hours, “of simple chronicity, of the emptiness of tock–tick, humanly uninteresting successiveness” (Kermode 46) or days and years. Modern life is especially regulated
by this type of time, so much so that we speak often about the ‘tyranny of time’ or the ‘race against time’ etc.

Kairos was represented as the son of Kronos and was imagined as the Greek god of opportunity. He symbolises the qualitative, deeply subjective and immeasurable aspect of time. Kairos is the ‘now time’ that flows uninterruptedly, and allows the human to flow with it. It is the perfect time or seasonal time. Kairos is what lends meaning and significance to the endless flux of unmarked Kronos. “It is required to be a significant season, kairos poised between beginning and end”, “between the tick and the tock” (Kermode 46). In Christian theology kairos signifies the time of salvation.

The relationship between time and place is indeed intricate. Time is presented “as motion or flow and place as a pause in the temporal current; attachment to place as a function of time, captured in the phrase, “it takes time to know a place”; and place as time made visible, or place as memorial of times past” (Tuan 179).

Time and space are devoid of meaning without a human consciousness perceiving it. It is human consciousness that turns Kronos into Kairos and space into place. Kronos may turn to Kairos by a kind of ‘humanising’ or poetic process. In the same way space, which is characterized by extension is turned into a ‘place’ by a perceiving human consciousness. Space becomes ‘place’ when it is given a local habitation and a name. “… Space acquires emotional and even rational sense by a kind of poetic process”, observes Edward Said, “whereby the vacant or anonymous reaches of distance are converted into meaning for us here. The same process occurs when we deal with time. Much of what we associate with or even know about such
periods as “long ago” or ‘the beginning” or “at the end of time” is poetic – made up” (Said 55).

1.4. c. Linearity, and Cyclicity

One of the problems of discussing time is the manner in which we can visualise time. There are two contradictory geometrical representations possible – it can be represented as a circle or a line extending to infinity. Most of the ancient peoples of the world conceived time as cyclic and represented it in circular form because they experienced time in the cycles of the seasons and what they observed as the cyclic movement of the heavenly bodies. Cyclicity meant endless repetition; an idea embodied in the pervasive myths of rebirth. The Greeks and the Romans generally shared this belief. Analytical or philosophical formulations were the concern of the few. The Indian idea of शम्सारा चक्कर (the Great Wheel of Becoming) is a profound symbol of the nature of the phenomenal world and its relationship to the eternal.

Linearity of time represented as a straight line beginning with the creation of the world and ending with the ‘Day of Judgment’ is first observed in the Judeo – Christian tradition. Islam and Zoroastrian religion share this view, obviously under the influence of Judaism. The same influence might have made Seneca, the Roman writer, to think of linear time, but Aristotle gave psychological reasons for adopting the circular model. His point was that we cannot conceive of a ‘first time’; for any first time we could conceive of a time before that. However the Aristotelian notion of cosmic cyclicity did not elicit any detailed and endless repetition such as the multiple births of Socrates or of the Indian thinkers, though some Greek Stoics did adopt this stance, possibly under Indian influence.
In popular notion, time is an endless unidirectional flow. Heraclites implied this idea in the metaphor of the flowing river. This suggests time as perceived from the ‘outside’. In actuality, the perceiving subject is also part of this flow. It would appear paradoxical that time appears both as repetitive (cyclical) appearing in the shape of seasonal changes in nature and measured as moving forward never to return, suggested by our notions of human history and evolution and suggested in the celebrated metaphor of ‘time’s arrow.’

Spengler finds fault with other thinkers, especially Kant for ignoring or downplaying the element of directionality of time and attempting to determine its course mechanically. He comments:

The problem of Time like that of Destiny has been completely misunderstood by all thinkers who have confined themselves to the systematic of the Become. In Kant’s celebrated theory there is not one word about its character of directedness. But what is time as a length, time without direction? Everything living, we can only repeat, has “life”, direction, impulse, will, a movement- quality (Bewegtheit) that is most intimately allied to yearning and has not the smallest element in common with the “motion” (Bewung) of the physicists. The living is indivisible and irreversible, once and uniquely occurring and its course is entirely indeterminable by mechanics. (122)

The modern world is very much influenced by the notion of linearity which became the standard notion during the last two centuries and is not likely to be abolished altogether.
The notion of time as a linear progression (from the past towards the future) is deeply entrenched in Western thought as is implied by ancient yet endlessly repeated metaphors about ‘the stream of life’ or ‘the passage of time’, this time is conceived as spacelike, as though the now were either a stake driven in the bed of a river (the future flows by the stake and on into the past) or a train crossing the prairies (the lines in front lead to an invisible horizon in the future and those behind to one in the past).

(Easthope 182)

In classical narratives, whether pagan or Judeo-Christian, these two notions – cyclicity and linearity – of time often appear running parallel to each other. As noted above, thinkers have often held the view that the linear conception of history is a Judeo – Christian conception that gained currency with the spread of Christianity in the West. It sees history as a process of becoming. This is arguably an oversimplification.

C. S. Lewis notes in his *The Discarded Image* that such a notion is not correct. An examination of the historical narratives of the classical cultures and the medieval ones may clarify this point. In his opinion, “the suggested antithesis between Pagan and Christian conceptions of history is certainly overdrawn” and points to Norse mythology and the Roman epics, which represent an idea of history similar to that of the Judeo Christian (177). For example, the Roman national epic *The Aeneid* embodies a linear notion of history emphasising, the metaphysical idea of ‘becoming’ over ‘being’. Lewis notes further:

To the Greeks, we are told, the historical process was a meaningless flux or cyclic reiteration. Significance was to be sought not in the world of becoming
but in that of being, not in history but in metaphysics, mathematics and theology. Hence Greek historians wrote of such past actions – the Persian or the Peloponnesian War, or the lives of great men – as having a unity in themselves, and were seldom curious to trace from its beginnings the development of a people or state.... Christianity ... makes world–history in its single, transcendentally significant, story with a well–defined plot pivoted on Creation, Fall, Redemption, and Judgement. (174)

Lewis calls this Christian conception “Historicism”, “the belief that by studying the past we can learn not only historical but metahistorical or transcendental truth” (174). It is during the Middle Ages that historicism began to take deeper roots in human thought, though pagan notions were not entirely discarded and the empiricist notions were still far off. History writing itself was different from what we think of it today. Lewis notes that the “medieval historians, even when we have ruled out the radical Historicists, are a mixed collection” (177). He notes that for the medieval man “the very words story and history were not desynonymised” (179). This is similar to the attitude of the classical Greeks – whose stress was on being rather than on becoming – though their attitude is not based on a similar belief system. The conclusion that Lewis draws from this is of great importance for our purpose. He says: “It follows that the distinction between history and fiction cannot, in its modern clarity, be applied to medieval books or to the spirit in which they were read” (179). The significant observation here is that “all medieval narratives about the past are equally lacking in the sense of period. For past is, before all else, a ‘costume play’” (182). Medieval and Elizabethan writers pictured the past and the heroes of the past in terms of their own age. Lewis says: “It is doubtful whether the sense of period is
much older than the Waverly novels” (183). Lewis explains the cosmology envisaged in medieval writings thus:

Historically as well as cosmically, medieval man stood at the foot of a stairway; looking up, he felt delight. The backward, like the upward glance exhilarated him with a majestic spectacle, and humility was rewarded with the pleasures of admiration. And, thanks to his deficiency in the sense of period, that a packed gorgeous past was far more immediate to him than the dark and bestial past could ever be to a Lecky or a Wells. (185)

Thus we may argue that the influence of Christianity did not necessarily involve a linear view of time and history. Kairos time still figures greatly in their thought. It was with the arrival of renaissance realism that things began to change – a change in philosophical attitudes that began to be reflected in the birth of a new narrative form – the novel. The Copernican revolution may be marked as the beginning of this new cosmology. The Copernican theory, proposed in 1514 found its champions in Kepler, Galileo and in Newton.

It is thus possible to see that just as there is a Christian historicism, there is also a pagan historicism embodied in later classical narratives. But in popular terms, the classical and medieval (Christian) sense of time and history remained similar. History and romance were not distinguished in terms of their sense of time.

The renaissance saw the birth of humanism or rather the reinvention of classical humanism which engendered, along with the growth of science, a set of new attitudes that replaced the medieval faith with skepticism and the spirit of empirical enquiry in the mysteries of the universe. In its wake time notions also changed. It is
noted that “from the Renaissance onward, time in Europe was steadily losing its repetitious and cyclical character and becoming more and more directional. The image of time as swinging pendulum or as circular orbit ceded to the image of time as arrow. Space and time have gained subjectivity by being oriented to man” (Tuan 123). This marks the dawn of realism.

1.4. d. Measuring and Recording Time

Man’s attempt to measure time, and the devices that he developed for this purpose, are the most evident sign of human time-consciousness. This has a history as old as civilization.

When did man begin to measure time? It is difficult to say exactly at what point in history mankind started to develop systems of measurement. Very little is known about the time keeping devices of ancient civilizations. One thing is certain: that the most primitive civilizations did not feel the need to measure time in the way modern man does. Our hunter–gatherer ancestors might have been worried only about the changing seasons. Even today in remote jungle communities in the far flung regions of the world, the sense of time is drastically different from those of the urban world outside. The need to measure time occurred only when man began to live in organized communities and began to develop what we call ‘civilization’.

The changing time consciousness of mankind is certainly allied to the development of the modes of measurement of time’s passage. Even more than the debates and theorizations of philosophers, it is this that registers the changeover from the old world to the new in terms of time consciousness.
The idea of monitoring time must have started when settled civilizations began. In the ancient world the most advanced civilizations are supposedly the Egyptian and the Sumerian. There is sufficient evidence to show that these peoples were concerned with the problem of measuring time. Calendars became necessary for civilized peoples because it was necessary to plan and prepare for the sowing and reaping activities in Agricultural societies. Attempts to develop calendars began – as per extant knowledge – with the Egyptians and the Babylonians. The Babylonian calendar was developed in the 20th century B.C., based on the lunar cycles.

The ancient Egyptians had their calendar as well as mythological ideas about time. In their mythology and ancient rituals the cosmic cycles of time played a significant part. The ruins of the temple at Medinet Habu where the architectural orientations signify the movement of the sun, testifies to this fact. The famous 4000 years old Stonehenge of Salisbury, England is argued to be one meant for the purpose of marking the seasons and celestial events.

It is also to be noted that the Mayans and Aztecs of ancient America had their calendars – had 260 and 365 day calendars – and kept record of historical events in various sculptures, paintings and hieroglyphs. The calendars developed by these peoples point to the degree of sophistication they had achieved in the field of mathematics and astronomy. The ancient Mayan calendar is even more accurate than the Gregorian calendar which was instituted in 1582 and still in general use today marking the Common Era. However, Gregorian calendar is 3 days long in 10,000 years; The Mayan calendar is only 2 days short in 10,000 years! Despite such sophistication achieved by these peoples in different ages of history, it is to be noted
that they did not think of their knowledge of time as part of a scientific approach, rather these were part of their complex systems of religion and ritual practices.

From what we know about ancient civilizations, it is clear that the celestial bodies — the Sun, Moon, planets, and stars and their configurations in the sky — have provided ancient men with reference systems for measuring time’s passage for centuries. Ancient civilizations relied upon the apparent motion of these bodies through the sky to determine seasons, months, and years. In every culture, there were people who concerned themselves with recording the passage of time. The crude devices such as gouging holes in bones and sticks were found which are presumed to be used to count the days between the phases of the moon. Sumerians, Egyptians and the Greeks had more sophisticated methods of measuring time. The modern 365 day calendar seems to have its prototype in the ancient Egyptian solar calendar developed more than 3 centuries before Christ. It was the Greeks who divided daylight hours into 12 hours.

The more minute measurement of time – hours and minutes, seconds and milliseconds – were to come about through a technological progress that took several centuries, to augment the calendar. It is only with the coming of the industrial civilization that such minute tracing of time became a common necessity and thus began to be accepted universally. From currently known sources it is clear that the Egyptians were the first to develop a mechanism to measure the minutes and hours. It consisted of an obelisk whose moving shadow marked the hours of the day – a kind of elaborate sundial. In the fifteenth century B.C. the sundial appeared. This device could be used only in the daylight. The measurement of night hours was made possible with
the development of the first astronomical tool known to man – the merkhet. This used in alliance with the position of the pole star, could calculate the nighttime hours.

In the first century B C, a number of sundials had come into use around the Mediterranean. Clocks that were independent of the celestial bodies seem to have been developed in Asia by the Chinese and possibly the Indians. Some people used knotted cords and small stone or metal mazes filled with incense that would burn at a certain pace. Calibrated oil lamps, candles, water clocks and sand clocks (the hourglass) were devised in some places. The oldest water clocks in the world were found in the ancient Egyptian tombs. One of the most remarkable devices was the clepsydra (the ‘water thief’), an invention of the Greeks. In the Athens market place in the first half of the first century B C, Andronikos the astronomer is said to have supervised the construction of the Horologion, known today as the Tower of the Winds. This is perhaps the oldest known public clock in the world. The Romans also had similar devices and continued to improve them. From the 13th century B C onwards, the Chinese are known to have made use of water clocks of great accuracy and efficiency.

In the 11th century, Arab astronomers designed the Astrolabe for use in the Muslim mosques to mark the hours of prayer and also used it for astronomical studies. They also refined the old sundials. The medieval monks of Europe also developed clocks for more or less the same purpose. The first recorded making of a mechanical clock was in Magdeburg in 996.

Significant changes in horology began to take place in the Western world towards the end of the middle ages. This also marks the beginning of a new time consciousness. The classical notions of the universe held sway throughout the middle
ages, except for the pervasive influence of Christian belief which also had absorbed the classical cosmology of the Greco-Roman world.

In Europe during most of the middle Ages (roughly 5th to the 14th century), there were no significant technical advancements to speak of. New sundial designs evolved, but they did not move far away from the ancient Egyptian principles. The leisurely living conditions of the time did not necessitate any new inventions in this line.

During these times, simple sundials placed above doorways were used to identify midday and four “tides” (important times or periods) of the sunlit day. By the 10th century, several types of pocket sundials were used. One English model even compensated for seasonal changes of the Sun’s altitude.

Then, in the first half of the 14th century, large mechanical clocks began to appear in the towers of several large Italian cities. Between 1500 and 1510 in the city of Nuremberg (Germany) Peter Henlein invented the spring–powered clocks. The next breakthrough came with Galileo Galilei. In the 1580s he studied the motion of the pendulum, and attempted to device a pendulum clock, without much success. It was Christiaan Huygens, a Dutch scientist, who made the first pendulum clock in 1656. The movement of the clock was regulated by the oscillation of the pendulum, a further improvement in measuring time. When Shakespeare speaks of the “dial’s shady stealth” which tells “Time’s thievish progress to eternity” (sonnet 77), and of counting “the clock that tells the time” (12), we may guess that both the clock and the dial were widely in use at the time. In 1721, George Graham the great British instrument maker improved the accuracy of this clock correct to 1 second per day.

Over the next century, more refinements were introduced. In 1898 R. J. Rudd introduced a free pendulum principle based on which clocks that attained greater
degree of accuracy were developed. One of the most famous, the W.H. Shortt clock, was demonstrated in 1921. The wrist watch was first designed in 1904, but came into popular use after World War I. Quartz crystal oscillators and clocks developed in the 1920s and onward, eventually improved time keeping performance far beyond that achieved by pendulum clocks. In the mid 20th century, with the arrival of the atomic clock and the digital revolution, the measurement of time has gained accuracy and minuteness which was unthinkable a century ago.

However, we must remember that many of the notions about time are not notions that are shared universally. The conventions regarding time developed by the modern clock and calendar are mere conveniences to make the highly organized and efficiency oriented life possible for modern man. Philosophers and scientists have different ideas about the time phenomenon and often seem to contradict the common man’s notions.

The mathematical measurement of time, strictly speaking, is fraught with problems because, to measure and standardize its units, the mathematician assumes that time’s flow is uniform. The earth’s rotation round the sun (solar time) is taken as the reference point. But this movement is not uniform. Sidereal time, where the distant stars are taken as the reference point too is not uniform (Vatsyayan 7). In other words the mathematician and the scientist, when they speak of the metrics of time are actually making use of “a convention if not a fiction of mathematics” (7). There is no absolute uniform time that we can know of; two intervals of time are thus not known to be equal, they are only called equal” (7).
1.4. e. Standard Time and the Modern Consciousness.

Developments in the measuring and recording of time did not occur independently of the rising human need for such. The various inventions, along with the standardisation and recording of public time went hand in hand with the evolution of the modern industrial and financial culture. Though clocks existed mostly in the public domain since the renaissance period, the collective consciousness of a standard time did not exist till it was necessitated by the arrival of industrial revolution, the first sign of which was the arrival of the railway.

It was with the dawn of the modern industrial age that measurement of time became a daily need. It marched with the emergence of the “mass man”– literate, urbanized and leading a life measured by the hours and the minutes. The introduction of the railways in England necessitated a precise system, which would help the public know of the arrivals and departures of railway carriages at the designated places. As urbanization progressed apace, the need for a public time increased, and the use of clocks and watches became commonplace. Time was money and many other things for modern man. Life began to be controlled by the machine, not the least of which was the clock and the watch.

The differences of local time regulated by the sun’s position – and not so accurately guessed by indigenous means – were abolished gradually in a matter of half a century. God’s time held out for a while. Increasingly it was the railway’s clocks that came to define the time for the whole population, with particular effects on the life and thinking of the age. (Stevenson 17)

Hours and minutes mattered. A shared sense of time by a whole nation developed and spread to other parts of the world as well. Everyday life depended very much on
minutes and hours, creating the mindset of the industrial urban culture. “Throughout the nineteenth century, the spread of railways is at least as much as the expansion of factory work to put the clock firmly in control of everyday life – to make time mean, and be Mean for everyone” (116).

Universal standard of time emerged as a need during the 19th century. In the latter part of the nineteenth century, a variety of meridians were used for longitudinal reference by various countries. For a number of reasons, particularly the imperial dominance of Great Britain, the Greenwich meridian was the most popular of these. In the year 1880, the British Parliament enacted the Statutes Bill which spelt out a definition of (public) Time. The notion of standard time was legitimized with the establishment of the GMT in 1884 during the Prime Meridian Conference. The meridian passing through the original site of the observatory in Greenwich was globally accepted as the zero meridian by an international agreement.

In effect the GMT became part of the colonial enterprise, that is to say, the British Time Standard began to get globalized. Its cultural implications cannot be ignored. “No longer determined by either organic or cosmic cycles of time, ‘Greenwich time’ is a mathematical fiction which signals the collapse of human experience of space and time into a mathematical formula…” (Nguyen 33)

More than the scientific theories of the new age, the “railway time tables and contemporary changes in forms of transport” were responsible “for the new sense of time in Western Man” (Stevenson 118).

Literature of the period reflects the changes in many ways. The technological innovations of the 19th century and the arrival of the universal standard time is effectively used by Jules Verne in his popular travel adventure Around the World in
Eighty Days (1874), in which the extremely time conscious and disciplined Victorian Gentleman Phileas Fogg accomplishes the feat of circling the globe in eighty days, a feat that was thought impossible till then. Verne’s novel was a convincing presentation of the world that was increasingly becoming the ‘global village’ by means of communication and travel technologies.

The revolt against standardisation of time also developed side by side. The cultural and political significance of the Greenwich Observatory as a symbol of centralising authority is used by Joseph Conrad in The Secret Agent (1907). The central event of the novel depicts an anarchist attempt to destroy the observatory. This story was based on a real incident involving British anarchists. At the climax of the novel, where the half wit Stevie becomes the victim of the plot hatched by his brother and fellow anarchists, the fragmentation of Stevie “exactly on the first meridian, figuratively embodies...some sense of the menace to humanity of the new systems of man’s time or Mean Time”( Stevenson 121).

Another reaction to the tyranny of mechanical time came from the French philosopher Henri Bergson. Bergson’s Time and Freewill followed the GMT in a matter of six years and is seen as a philosophical reaction to the commodification and fragmentation of time.

The rise of standard time allied to the growth of transportation and communication necessitated the use of watches and clocks as part of everyday life. The fob watch became fashionable in the leisurely Victorian high life. The First World War rang the curtain down on it. The changeover was signified, among other things, by the arrival of the wrist watch. Randall Stevenson informs us thus: “The arrival of the wrist watch was necessitated by the “conditions of combat (which) made
exactly timed co-ordination of troop movements essential: waves of attacking soldiers required even greater synchronization than shifts of workers‖ (in factories) (Stevenson 116). The war put an end to the Victorian gentleman’s leisurely ways. “The regulative apparatus bound to each wrist began to dictate the organization and timing not only of work and leisure, but of death” (116). In other words life became literally ‘time bound’. “The kind of changes in the sense of time effected by railways in the nineteenth century continued in various ways to influence the imagination of the twentieth” (118).

The cityscapes around the world became dotted with clock towers, and public time devices and the wrist watch became part of the common man’s accessories when he went out to work. The social impact of this is the creation of a universal, mechanical consciousness of time. It is, in other words, the sign of modern man’s enslavement to the machine, against which came the modernist revolt.

Modern man cannot do without a consciousness of public time. In the age of globalization and nanotechnology, consciousness of time is deeply embedded in the human psyche. Ours is a civilization that is conditioned by an acute consciousness of time. It is actually a mindset created by the highly mechanized world of today. Our subjective experience often contradicts this notion. Marshall McLuhan comments:

As a piece of technology, the clock is a machine that produces uniform seconds, minutes, and hours on an assembly line pattern. Processed in this uniform way, time is separated from the rhythms of human experience. The mechanical clock, in short, helps to create the image of a numerically quantified and mechanically powered universe. … time measures not by the uniqueness of private experience but by
abstract uniform units gradually pervades all sense life, much as does the technology of writing and printing. Not only work, but also eating and sleeping came to accommodate themselves to the clock rather than to organic needs. As the pattern of arbitrary and uniform measurement of time extended itself across society, even clothing began to undergo annual alteration in a way convenient for industry. (McLuhan135–36)

Thus the industrial man had a drastically different consciousness of time compared to that of his ancestors. Time now was a commodity; every minute counted because time is money.

1.5 a. The Evolution of Time Thought

Before the arrival of speculative thought (that is the arrival of the professional philosopher and the scientist) time concepts were embodied in mythological stories. The difference between the mythological notions and the speculative notions is that the former tends to be ‘poetic’ and the latter ‘analytical’. Mythologies make personification of abstract things. In the Western world, the earliest recorded ideas – mythopoeic views – are available to us from about the 3rd century B C. Similar notions exist in Eastern thought too. This view concretizes the abstract in terms of gods and goddesses, and does not attempt to be analytical. It is poetic in conception, attempting to personify time as Kronos and Kairos. This conception of time is expressed in the seasonal rituals. The conception of the universe as inhabited by gods and goddesses and man as part of the larger cosmos gave rise to sensuous apprehension of abstract realities. Hence time is imagined as Kronos in Greek mythology. The idea of kálapurush in Indian mythology is another such example. The mythopoeic imagination tended to combine the cognitive aspect of knowledge with
the emotive aspect of experience and engendered concepts such as time and space as part of the sacred traditions. Consequently, it involved ritualism. Seasonal rituals connected with agricultural activities (sowing and harvesting) invoked this sense of the sacred. Symbolic acts conducted in connection with various human activities invoked the supernatural and provided men with a sense of participation in the processes of nature and a certain sense of being able to control their destiny.

Thus, rituals were considered efficacious in bringing good harvest and prosperity. History was not conceived as a linear progression from the past to the future, rather a cyclic repetition. This is what some thinkers refer to as the doctrine of Eternal Return. Time and space were not abstract entities to be speculated about, instead emotional experiences. The pre-industrial world was thus governed by the mythopoeic and the intuitive notions of time.

Creation myths existed in various primitive cultures in which a sense of the beginning of the world, its sustenance and a sense of the end of time were also articulated. But the most prevalent idea concerning time appears to be the idea of cyclical existence. This was a direct derivative of the recurrent cycles of the seasons. The concept of yugas in Indian mythological thought expresses cyclical notions allied to the idea of avatars and rebirth.

Raja Ramanna, pointing to the rich tradition of Indian thought on time, says:

The mystery of “Time” was well known to the ancients, Indian philosophy has many references to the true meaning of “Time”. In as long as we have an entity like the Brahman, which is the unification of all things, eternal and all-pervading, it automatically implies that there
is an eternal absolute Time. But the same consideration of the Brahman involves the process of *Māyā* which has been defined as a force which pushes the immeasurable and incomparable entities into a regime of the comparable and thus becomes measurable. Thus from an absolute regime, *Māyā* allows for a measurable and relative time (i.e., physical time). The relation between “eternal” time and “relative” time has yet to be elucidated. (4)

The idea of *Visvarūpa* in Vedic Literature embodying the myth of Vishnu is another example of the representation of time in Indian thought. As T. S. Maxwell points out:

In the Vedic versions of the myth, *Visvarūpa* is seen as the victim of his divided Identity (he has to be destroyed by Indra to restore the balance between gods and men); in the *Bhagavad Gita* version, on the other hand, *Visvarūpa* as *Kāla* triumphs, restoring the flow of linear time in which Arjuna goes on to fight after the hiatus in which he reveals himself as all time and space in which all the forms of the universe exist and perish. (393)

Ancient Buddhist thought does not “accept permanency and unchangeability of time” or “its being independent in itself”, “in spite of endless continuum and pervasiveness of time” (Rinpoche 61). “Generally the Buddhist view is that time is imposed (*āropita*) upon momentariness and changeability of phenomena of mind and matter” (61). Time functions merely to “the process of change and
momentariness. This very momentariness is the essence of Buddhist doctrine, which explains that every composite phenomenon is impermanent” (65).

Though the commonsense notion of time has not changed over the centuries – since in the practical world of everyday life such a notion is sufficient –, speculation about the nature of space and time continues in the world of thought. And its influence is undoubtedly reflected in various forms of human communication, especially in artistic narratives. It is indeed true that the idea of public time, which developed as a handmaiden of the industrial revolution, has been diffused around the world during the last one and a half centuries and without doubt, will continue to remain so. These ideas that developed in the Western industrial world have now been accepted as necessary even by those nations that have tried to resist Western colonisation in the past. The Global Village demands the acceptance of such standardization. Here it would be interesting to trace briefly how the notion of time has evolved in philosophy, art and literature through the centuries.

1.5 b.1. Time’s Different Cultural Models

As already noted, the cultural models of time vary from culture to culture, from period to period. These models derive from various sources and are often intermingled. A purely scientific definition of time itself is problematic because of our inability to have a direct experience of it. As S. H. Vatsyayan notes:

...in so far as even the experiential reality of time is conditioned and modified by current philosophical concepts and contemporary scientific knowledge about the nature of time, no discussion of human time – i.e., time as experienced by us – can altogether ignore or
exclude science or philosophy, or speculative thought with either bias.

Indeed, we cannot even limit ourselves to contemporary philosophy or science, but have to keep in mind the history of the development of ideas also, particularly in our consideration of literature. (5)

An attempt to understand the way time is represented or configured in narratives will clarify and help understand the metaphysical and epistemological problems allied to time. However we must not forget that the methodological approach is different in the case of narrative studies from that of the approaches of the physicists and the philosophers. This is not to say that they are not mutually influential or unrelated; contrary to that, these disciplines often help each other towards a better understanding of each other. To put it simply, the narratological method is based on time as ‘configured’ or ‘represented’, the scientific method is empirical and the philosophical method is speculative.

1.5.b.2. The Classical Western World.

As already noted, in the classical world the commonsense notion of time prevailed and was enough. It is reasonable to believe that different peoples had different notions with regard to time which was bound up with mythological thinking and allied to the changes of seasons etc.

But with the speculative philosophers the story was different. It is in this sense that Greek thought becomes important to the modern world. This is because modern science and its methods may be traced back to the ancient Greek thinkers, who differed from the others in the way they approached reality.

Mythological notions about time and space remained part of the collective consciousness of a particular people at a particular point in history, and remained part
of the hieratic traditions. Emerging out of the mythological roots, the Greeks in the
golden age of their civilization laid the foundations of scientific-humanistic thought.
This had certain features that had great impact on the development of our world.
Though by the present day standards, we may discount the Greek theories concerning
the cosmos, there is much that we have taken from them to advance the cause of
science, art and philosophy. They were guided by reason, individualism and
humanistic thinking. Though they cannot be said to have been experimentalists, they
laid emphasis on observation of phenomena and tried to develop general theories
concerning the universe. They were intensely aware of the paradoxes of appearance
and reality and of change and permanence as part of the human condition. In fact, it is
this awareness that often became the starting point of their cosmology. The main
difference between classical science and modern science is that modern science lays
emphasis on empirical data rather than on speculation and also enjoys the advantage
of technology that makes possible the observation and analysis of data.

The classical Greek thought began to emerge in the 6th century B.C., when the
pre-Socratics strove towards a rational explanation of the universe. Their attitude of
individualism and competitiveness in approach generated mutual criticism and
endless debates. This spirit indeed was helpful to the growth of knowledge in the
Greek world. The modern world owes much to them in that they appear before us as
models in their striving towards a rational and consistent theorization of phenomena.

Speculative Greek cosmology was developed by three schools of philosophers
– the Ionians, the Italians and the Eleatics. Among the first group, the names of
Heraclitus and Pythagoras stand out. Heraclitus added the idea of ‘flux’ to the idea of
existence and noted the principle of constant and unceasing change as the character of all things.

The Eleatic School was founded by Parmenides who denied the reality of time and space. This argument was based on his idea of Being as one, indivisible and changeless. To him the phenomenal world was the world of appearances, of diversity and change which were not real. His idea is closely akin to the ancient Indian idea of Máya as embodied in Buddhist and Hindu Philosophy. This position had its strong defender in Zeno of Elea whose famous paradoxes about time and change are discussed even today. Zeno tried to defend the Parmenidian position through his famous paradoxes of Achilles and the tortoise, the moving arrow, and the stadium.

**Zeno’s Paradox**

In about 445 B.C. Zeno highlighted the paradoxes of time experience by posing the famous Achilles and the tortoise paradox. His arguments would lead to conclusions that contradict actual lived experience. His paradoxes had a great impact on philosophy and science. He imagines a race between the legendary Achilles and a slow-crawling tortoise. If the tortoise has a head start, Achilles will never overtake the tortoise. The argument runs thus: If Achilles is to overtake the tortoise he must at least run to where the tortoise is. However, when he arrived at that spot, the tortoise will have crawled to a new place. So, Achilles must run to the new place; but when he arrives in the new locus the tortoise will have crawled on to yet another place. Thus, good reasoning shows that fast runners never can catch up with the slow ones when the latter have a head start. Common sense would tell us that Zeno’s argument is patently false.
Zeno also employed two other such paradoxes – the paradox of the stadium and the paradox of the flying arrow, to clinch his arguments regarding time. Zeno’s arguments were later refuted by philosophers like Henri Bergson. On close examination we realize that Zeno’s mistake was derived from the “identification of this (Achilles’ movement), each of which is of a definite kind and indivisible, with the homogenous space which underlies them” (Bergson 113). For Zeno there is no such thing as a ‘zero time’ and time is infinitely divisible. Bergson argues that Zeno’s premise is wrong. Zeno begins from the premise that time is divisible like space, which is wrong.

Achilles is able to outstrip the tortoise “because each of Achilles’ steps are indivisible acts in so far as they are movements, and are different magnitudes in so far as they are space: so that addition will soon give a greater length for the space traversed by Achilles than is obtained by adding together the space traversed by the tortoise and the handicap with which it started” (113). In other words, Zeno equated space with motion (114). “Space alone can be divided and put together again in any way we like” (113).

Zeno’s contemporary Empedocles had a quasi-mystical idea of evolutionary cycles of history which embodies a vague notion of linearity and cyclicity of time which modern thinkers like Spengler found attractive.

Leucippus and Democritus, the two famous ‘Atomists’ developed the idea of the ‘void’ which is a more systematic formulation of space and time. For them time appeared infinite, independent of human observers or objects (atoms) within, in which case it becomes discontinuous. Time was not an objective entity in the universe. Lucretius, a later follower of the atomist school (1st century) viewed time as the
human observers feeling while observing objects in motion. In other words, time depended on objects and observers. So for the atomists time has no existence except as a real thing like space. Plato bodied forth his cosmology in *Timaeus*, where he attempts to deal systematically with the nature of space and time. He allied it to the circular motion of the heavens. Platonic ideas that laid stress on the dichotomy between the world of Being and the world of Becoming had a continued influence on Western thought throughout the centuries. The phenomenal world is the world of Becoming, subject to change. It is only an imperfect model of the world of unchanging forms which belong to the world of Being which is timeless. We are never able to imitate the unchanging forms to perfection.

Plato’s disciple Aristotle attempted to answer to the question of time, proposing that time was the measure of motion which was continuous. To him time and space were infinitely divisible too. Though occasionally he speaks of time as if it were motion, he opposes the Platonic view, of the circular motion of the heavens, asserting that time, though linked to motion, is independent of it.

### 1.5 b.3. The Christian World

The earliest and most clear statement about the conundrum of time experience appears in the *Confessions* of St. Augustine, the 4th century Platonist and Doctor of the Church. While he contemplates the nature of eternity and time in Book XI, Chapter 14, he muses:

For what is time? Who can easily and briefly explain this? Who can comprehend this even in thought so as to express it in a word? Yet what do we discuss more familiarly and knowingly in conversation
than time? Surely we understand it when we talk about it, and also understand it when we hear others talk about it.

What, then, is time? If no one asks me, I know; if I want to explain it to someone who does ask me, I do not know. Yet I state confidently that I know this: if nothing were passing away, there would be no past time; and if nothing were coming, there would be no future time; and if nothing existed, there would be no present time. How, then, can these two kinds of time, the past and future be? But if the present were always present, and would not pass into the past, it would no longer be time present, but eternity. Therefore if the present, so as to be time must be so constituted that it passes into the past, how can we say that it is, since the cause of its being the fact that it will cease to be? Does it not follow that we can truly say that it is time, only because it tends towards non-being? (288)

Steeped in Christian historicism, Augustine refuted Aristotle’s belief that time is circular, insisting that human experience is a one-way journey from Genesis to Judgment, regardless of any recurring patterns or cycles in nature. Augustine of course is not dealing with it as a purely philosophical issue. For him it is as much a problem of epistemology as it is a metaphysical one. Augustine was the first thinker to give the idea of time as coexistent ‘threefold present’ that is, the ‘presentness’ of the past, present and future in the perceiving mind. We encounter this idea in the durée experience narrated in the stream of consciousness novels of the modernist period under the influence of Henri Bergson.
Thomas Aquinas, the most influential philosopher and theologian of the middle ages gave support to Augustine’s notion of linearity of history, for obvious reasons. Theirs was a structure of time formulated from the Christian theological perspective.

1.5.b 4. Renaissance, Enlightenment

The Platonic-Christian notions prevailed till the Renaissance. With the coming of the age of science we notice a radical shift in the notions of time. This shift is allied to the changing social and religious values of the West – accompanied or perhaps caused by – the critical skeptical temperament of the times.

The medieval outlook changed radically in the sixteenth and seventeenth centuries. The notion of an organic, living, and spiritual universe was replaced by that of the world as a machine, and the world – machine became the dominant metaphor of the modern era. This development was brought about by revolutionary changes in physics and astronomy, culminating in the achievements of Copernicus, Galileo and Newton. (Capra, The Turning Point 38)

Copernicus proposed his theory in 1514, though it remained suppressed for about a century. But later Johannes Kepler in 1609 and Galileo Galilei in 1687 championed it. With Galileo was born the modern experimental science. “Galileo was the first to combine scientific experimentation with the use of mathematical language to formulate the laws of nature” (39). It was not until 1602 that the concept of linear time was clearly and explicitly formulated – by the English philosopher Francis Bacon. In 1687, Isaac Newton reinforced this viewpoint when he represented time mathematically by using a line rather than a circle, although he believed time to be
ultimately cyclic. The concept of linear time was promoted by Isaac Barrow, Gottfried Wilhelm Leibniz, John Locke and Immanuel Kant. In 19th century Europe, this notion became dominant in both science and philosophy, and it remains so today.

The Copernican revolution and the rise of Newtonian physics can be pointed out as landmarks of this new age. “The Copernican model got rid of Ptolemy’s celestial spheres, and with them, the idea that the universe had a natural boundary” (Hawking 5). This opened up new avenues of enquiry and debates in the field of science and philosophy, pointing towards the birth of the modern world. Aristotle’s linkage between time and change, or between ‘instants’ and ‘events’ was refuted. Though the refutation of the Aristotelian theory is often attributed to Newton, Newton was faithfully following his teacher, the English physicist Isaac Barrow who championed the new idea. Barrow held the Augustinian view that time existed independently of motion. To him it existed even before God’s creation. Isaac Newton merely supported this view and argued very specifically that time and space constitute an infinitely large container for all events, and the container exists with or without the events. He also believed that time and space were similar to material substances though they were not material.

Newton’s “Absolute, true, and mathematical time” (Clark 103) in his Principia is “of itself and from its own nature”, something that “flows equably, without relation to anything external, and by another name is called duration” (103). In the same vein he also spoke of space that could be “absolute space, in its own nature, without relation to anything external, which “remains always similar and immovable” “some movable dimension or measure of the absolute spaces” (103). Newton’s thought
provided the scientific backdrop to the Enlightenment and the industrial colonial culture that characterized the 18th and 19th centuries.

Gottfried Leibniz (1646 –1716) objected to Newton’s formulation of time and events as mutually differentiated. Time for him was not an entity existing independently of events. He was of the opinion that both Aristotle and Newton had overemphasized the relationship between time and duration, and ignored the fact of ‘order’ as a vital attribute. Time is an ordering of changes, the overall ordering of all non–simultaneous events. Therefore time depended on events, so to speak. Leibniz added that this order is also a “something” as Newton had been insisting, but it is an ideal entity. John Locke, the empiricist philosopher, also promoted the theory of linearity of time. It formed the basis of his realistic philosophy, which was to have a profound impact on European thought in the 18th century.

The birth of modern realism and naturalism in both philosophy and the arts is linked to the Newtonian science and the philosophy of empiricism and rationalism. It was an age that promoted mathematical thinking and causality. Oswald Spengler observes: “Mathematics and the principle of causality lead to a naturalistic chronology and the idea of Destiny to a historical ordering of the phenomenal world. Both orderings, each to its own account, cover the whole world. The difference is only in the eyes by which and through which this world is realized” (8).

In the 18th century, Immanuel Kant formulated time and space as forms that the mind projects upon the external things-in-themselves. He was attempting to bridge the gap between empiricism and rationalism through his idealist philosophy. This point has already been noted above. He spoke of our mind structuring our perceptions so that space always has a Euclidean geometry, and time has the structure of the
infinite mathematical line. In Kantian thought “Space and time are not things perceived, but modes of perception, ways of putting sense into sensation, space and time are organs of perception” (Durant 270). Kant’s idea that time as a form of apprehending phenomena is probably best taken as suggesting that we have no direct perception of time but only the ability to experience things and events in time. Some historians distinguish perceptual space from physical space and say that Kant was right about perceptual space. It is difficult, though, to get a clear concept of perceptual space. If physical space and perceptual space are the same thing, then Kant is claiming that we know á priori that physical space is Euclidean.

According to Kant, the ‘a priori concepts’ that provide ‘basic forms’ of judgement, were the ‘twelve categories’ which are the forms of human thought (Scruton 37). But, “despite their importance to science and to the objective view of the world” time and space are not included in the list of categories, “which he described not as concepts, but as forms of intuition” (40 – 41).

Time is the form of ‘inner sense’, that is, of all states of mind, whether or not they refer to an objective reality. There could not be a mental state that is not in time, and time is made real to us through this organization of our experience. Space is the form of ‘outer sense’– that is, of those ‘intuitions’ that we refer to an independent world and that we therefore regard as ‘appearances’ of objective things. (41)

Kant’s stress on the subjectivity of time stands in opposition to the Newtonian science. It is not surprising that Kant’s idealism was the philosophical inspiration behind the Romantic Movement which rejected rationalism and sought for transcendent values through imagination.
However, in the 19th century Europe, the idea of objective linear time continued to be dominant in science and philosophy as well as in popular imagination. The prevailing realist philosophy and the rise of materialist thought supported it. It is no wonder then that this period was the golden age of realism in fiction. From George Eliot to the late Victorians, realism provided the epistemological basis for the narrative methods. They seldom broke out of the ‘historical’ method of narration, only elaborated on it. The extreme form of realism manifested as Naturalism in the late 19th century, with the French novelists – Flaubert and the Goncourt Brothers, and Balzac leading the way.

1.5 b.5. Modernism and Postmodernism

The mechanistic view of the universe and the neat assumptions of the rationalist – empiricist philosophies came under attack in the late 19th century. “From one side came those prepared to strike at its epistemological roots, denying that the apparently sound mechanical structure was anything more than a convenient illusion” (Clark 105). This is the dawn of modernism. The shift from cosmological to phenomenological time characterises modernism. “It is just possible that the rejection of chronology in the Modernist novel might be viewed in this way as a rejection of the external in favor of internal reality, and therefore as a shift from cosmological to phenomenological time” (Currie, About Time… 97). Among the welter of influences that engendered the phenomenon called modernism, the most significant one of course, was that of science. In the early decades of the 19th century, the Euclidean geometry was dethroned from its position of centuries old prominence.

The twentieth century scientific and philosophical views on time and space are radically different from what the Newtonian propositions had provided. In fact, the
reaction against the Newtonian universe had already been in the making. In art, the signs of instinctive reaction were already visible. But it was Einstein’s publication of “On the Electrodynamics of Moving Bodies” in Annalen der Physik in 1905 that brought this movement to a climactic quake. It was in this paper that he formulated the Special Theory of Relativity which was to upset the world of classical science like nothing else had done before.

Two figures before Einstein – Gustav Kirchoff and Ernst Mach – prepared the way for the Einsteinian theory. Mach attacked Newton’s idea of pure, absolute space and absolute motion as “pure things of thought, pure mental constructs, which cannot be produced in experience” (105). Even before that, the now famous Michelson Morley experiments (1887) laid to rest forever the classical idea of the ‘ether’ medium. Before that it was assumed that light traveled through vacuum because vacuum or space contained a medium designated as ether. The conclusive dismissal of this theory was “to many nineteenth century scientists . . . equivalent to scrapping current views of light, electricity, and magnetism, and starting again” (110). Einstein was later to acknowledge that it was the Michelson and Morley experiments that laid the foundations of his thought on relativity (107).

Einstein’s formulation of the Special Theory of Relativity was closely followed on its heels by the Lithuanian mathematician Herman Minkowski’s idea of the space-time continuum. This idea soon percolated into the world of philosophy and art and began to change the way the world was perceived by the philosopher and the artist. The impact of these ideas on modernist and postmodernist art cannot be overestimated. The Einsteinian theory soon began to provide a new cultural model of time for the twentieth century artists. It is also to be noted in passing that Bergson and
Spengler were at the peak of their influence about this time, impacting the field of thought and art.

In the field of philosophy, new currents were visible. Already in the 19th century Kantian idealism had been challenged by doubts being cast about the reliability of its method of transcendental proof. The view that truths about space and time are *à priori* began to lose favour. In the second half of the 19th century, Darwinism undermined the prevailing mythology surrounding human life and destiny. Freudian psychology and developments in the field of physics shook the foundations of the belief in linear time. Albert Einstein was to take this idea into the field of systematic scientific theory. Breakthrough developments in modern physics changed the universe of human imagination. Max Planck’s Quantum theory and its consequence Quantum mechanics also had something to do with the new consciousness. Quantum field theory and Einstein’s general theory of relativity are the most fundamental theories of physics. These together provided the notion of space-time as a collection of points called “space time locations” which provided the site of physical events. Space-time has two basic characteristics. First it is *four-dimensional*; secondly it is a *continuum*. Physical time is a distinguished, one-dimensional sub-space of this continuum. The theories that emerged from the basic research formulations of Planck, Einstein, and Heisenberg flew in the face of the prevailing notions of causality and temporality and brought into question the certainty of human knowledge. In fact, the notion of the illusory nature of human perception was already suggested in modernist art, in the cubist and impressionist paintings. What art had instinctively anticipated, science proved.
Minkowski challenged the commonsense notion of linear time and geometric space. It was he who first described time as a “fourth dimension” (Clark 159). In 1908, Minkowski presented an original idea in metaphysics regarding space-time relationship. In a lecture on “Space and Time” which he delivered in Deutsche Naturforscher und Artze (1908), he declared: “From now on, space by itself and time by itself, must sink into the shadows, while only a union of the two preserves independence.” (qtd. Clark 160). This theorization followed closely on the heels of Einstein’s formulation of the Special Theory of Relativity. In fact Minkowski had been working on Einstein’s theory to give “a mathematical formalism to what had been the purely physical conception of special Relativity” (158). The notion of space-time as more fundamental than the independent notion of space and time captured the imagination of the scientist and the philosopher. Space-time continuum began to be part of scientific and philosophical jargon. Time and space were no longer to be imagined as ‘independent realities’. In other words, the perception of time and space depended on the reference frame, a notion independent of it and hence variable. Space-time is a union of the two-space and time. And it doesn’t vary. This argument leads to the conclusion that the commonsense division of events into the past, present and the future ones is also not ‘independently real’ since the only absolute is space-time.

Thus we may argue that the shift from realism to modernism is marked by the shift from the perception of time as a collection of instants in sequence to time as duration. In the industrial chronology, time is spatialised as instants measurable by the clock. But Bergson contradicted this and formulated the idea of durée as the true experience of time. “Bergson rhapsodized on the effects of pure memory which in his
view originated in the nonmaterial realm of consciousness and its durée” (Nalbantian 10).

Martin Heidegger paved the road trod on by the existentialists with the publication of *Being and Time* (1927), inaugurating the age of Phenomenology. He drew his ideas from the existentialism of Kierkegaard and Nietzsche as well as the ancients. He reformulated the most basic concepts underlying our thinking about ourselves, emphasizing the “sense of being” (dasein) over other interpretations of conscious existence, arguing that specific and concrete ideas form the bases of our perceptions and provides an ontological turn to time thought based on the dasein. For him, time holds meaning only as it is experienced in our everyday activities. Time as a mere concept is not meaningful.

Along with the above, cataclysmic events such as the Great War produced the cultural phenomenon we refer to as modernism.

1.6. Time and Art

Consciously or unconsciously, all art expresses the cultural values of the society that produces it and the sense of time forms part of that consciousness. Literature is not the least of such artistic endeavours. “Literature, as a product of the whole culture of a people, at a certain time, must necessarily reflect the cosmology of the culture of the time” (Vatsyayan 6–7).

Time, as we have already seen, is not or cannot be the direct object of perception. Rather, it is the coordinate of the process of cognition, along with the dimension of space. The scientist would in the normal case accept time as a real objective phenomenon—the temporal dimension of occurrences. It is also noteworthy
that time is expressed in terms of spatial metaphors. (The “River of time”, “Time line”, “Time’s arrow”, “cycles of time” and so on). The use of these metaphors is necessitated by the fact that time is an intangible yet very real experience and we can talk of it only in figurative language.

As modern theorists have shown, when we take into consideration the perceiving mind that experiences and processes information available to the senses, the objectivity of time becomes problematic. Whether it is the factual world or the narrated world, human beings are instinctively aware of the temporal order in which things happen and we believe in the reality of time as the medium that makes temporality possible. In fact, temporality is what brings time experience to our perception in any form of narrative. This implies that things that happen in the world are organized in a certain form, though in themselves they are not structured and this structuring contrasts with the order of real events happening ‘out there’ and temporal conditioning becomes necessary to the human mind.

The endless discussions in philosophy and science may be a concern of the experts. But in the world of popular imagination the subtle arguments of the intellectuals do not always have a direct impact. At the same time every age has a certain world picture of its own, a popular mythology so to speak, which instinctively involves such subtleties. This ‘world picture’ or ‘common mythology’ is embodied in the tales that are created out of the common man’s sense of the surrounding world. That is the world of all narratives.

When stories are told or read, we are aware of the events that unfold in time and time is what regulates the flow of events. This time is not real hence generally referred to as “fictional time”. This time is the result of fictional temporality
constituted by the act of plotting or ‘emplotment’. Plot is the first important thing in a
fictional narrative, at least by Aristotelian standards. It articulates the time structure.

Frank Kermode uses the example of the ticking of a clock for the plot. We use
the fiction of the clock saying “tick and tock” in order to “to humanize it, make it talk
our language” (Kermode 44). He further observes: “The clock’s ‘tick-tock’ I take to
be a model of what we call a plot, an organisation which humanises time by giving it
a form; and the interval between ‘tock’ and ‘tick’ represents purely successive,
disorganised time of the sort we need to humanise” (45).

Thus the structureless reality of time is arranged into a cohesive pattern or
“structured” for our purpose through the act of plotting. “To put it another way,
the interval must be purged of simple chronicity, of the emptiness of tock-tick,
humanly uninteresting successiveness. It is required to be a significant season,
\textit{kairos} poised between beginning and end” (Kermode 46). Paul Ricoeur, one of
the most prominent philosophers of the late 20th century, developed this idea in
his \textit{Time and Narrative}, giving it a deeper philosophical basis in Augustine and
Aristotle.

The “imitation of reality” in artistic narratives of any form affects us by their
emotional impact. Art is in a sense an intensification of life, and its experience is
possible through the “willing suspension of disbelief …which constitutes poetic
faith” (Coleridge191). With one part of our mind, we suspend the knowledge of the
empirical world; with another we enter into the fictional world to identify ourselves
with the depicted world for the nonce. The mediated reality has no existence in
history; its spatial and temporal dimensions are accepted within the frame of art. We
accept the denotationally invalid nature of the narrated tale and its characters and at
the same time relate to it in a meaningful way, holding still to the claim that art reflects life. The reality of art is virtual. So is the time of art (temporality). Fictional narratives shape human experience into a certain structure; the structure of which is determined by the writer’s moral, philosophical and aesthetic concerns. But such concerns are not entirely free of the world that surrounds them. Too often, consciously or unconsciously they reflect the conditions of their own existence and are to be seen as a response to the world they inhabit.

However, the virtual world and the real world are both established in time. Time being a basic coordinate of all experience, its phenomenological reality surrounds the whole process of human cognition and conditions it. It follows that the reorganization or structuring of experience in art is always a matter of structuring time and space. We can discuss the problem of time and space and their interrelatedness at different levels. The idea of pure time may be a philosophical problem. Literary narratives do not usually engage the question of time as a philosophical problem, that is, empirically or directly. However, consciously or unconsciously they embody a certain sense of time at the representational level. And yet the study of artistic narratives at a certain point in time would surely yield us models of time perception. This is especially so in the case of the novel form, the reasons for which will be made evident in due course.

Without the fictions we collectively create, time reveals nothing, the past is rendered irrelevant and history empty. If we cling to our past as master of present circumstance, we act in bad faith, denying our existential freedom to create ourselves in every moment. In denying the determinacy of our past we are free to define what we are in the
present and accept responsibility for the outcome of our futures. Our sense of history, the stories we tell about our past, relates the living present to the lived past – if these stories are not Truth but fiction, if History is an illusion, how do we make sense of the present, a present rendered unreadable by the sheer opacity of past and future? (Rimmon-Kenan 44).

For the reasons stated above, an examination of the structural constitution of fictional narratives through the ages will provide us with a deep understanding of the evolving cultural models of time in the respective ages to which they belong.

Mikhail Bakhtin, the most influential theoretician of the novel in the latter half of the twentieth century identifies the space-time continuum of the novel form as its most distinguishing aspect. He designates this idea by the term “chronotope” (literally, “time-space”). Chronotope refers “to the intrinsic connectedness of temporal and spatial relationships that are artistically expressed in literature” (Bakhtin 84). The term borrowed from Einsteinian mathematics is used “as a formally constitutive category of literature…” (84).

Commenting on the nature of time-space constitution in artistic narratives Bakhtin offers this insight:

In the literary and artistic chronotope, spatial and temporal indicators are fused into one carefully thought-out, concrete whole. Time, as it were, thickens, takes on flesh, and becomes artistically visible; likewise, space becomes charged and responsive to the movements of time, plot and history. This intersection of axes and fusion of indicators characterizes the artistic chronotope. (84)
Bakhtin finds an “intrinsic generic significance” for chronotopes (84). He goes on to claim that “it is precisely the chronotope that defines genre and generic distinctions, for in literature the primary category in the chronotope is time” (85). “The chronotope as a formally constitutive category determines to a significant degree the image of man in literature as well. The image of man is always intrinsically chronotopic” (85).

The form of the most ancient fiction suggests the idea of cyclicity rather than linearity. As Bakhtin has pointed out, the chronotope of adventure-time in which the adventures of a hero and a heroine occur but is without developmental impact upon their characters; like the space in which their adventures happen, it is effectively empty. The term romance used to describe prose tales that existed before the arrival of the 18th century novel signifies this. Time as expressed in the ancient tales is a mode of “being” (the world of forms, of changeless eternity) rather than of “becoming” (the world of phenomena, of nature of appearances, which is impermanent and ever changing). Art attempted to imitate the forms which appealed to the “universal principles”. Such representations therefore did not indicate the action of time. In other words, the classical mythopoeic imagination did not represent the historical time of realism. Eric Auerbach’s analysis of Homer’s narrative method in Odyssey “Ulysses’ Scar” in his Mimesis demonstrates this point. The prose romances of the classical world also were no different in their approach to temporality from that of Homer.

Based on their chronotopes, Bakhtin distinguishes three types of novels. The first type is the “adventure novel of ordeal” with examples in Heliodorus’s An Ethiopian Tale or Aethopica and Achilles Tatius’s Leucippe and Clitophon (86). “In
these novels we find a subtle and highly developed type of *adventure-time*, with all distinctive characteristics and nuances” (87).

The second type is “the adventure novel of everyday life” such as the *Satyricon* (111). “In this second type, what strikes us first of all is the mix of adventure-time with everyday time – a quality we sought to express in our provisional designation of the type as an “adventure-everyday-novel” (111).

“Here time is not merely technical, not a mere distribution of days, hours, moments that are reversible, transposable, unlimited internally, along a straight line; here the temporal sequence is an integrated and *irreversible whole*” (119). “The individual changes and undergoes metamorphosis completely independent of the world; the world itself remains unchanged” (119).

The third type is the biographical novel such as the *Apology* of Socrates (130) with the chronotope represented as “the life course of one seeking true knowledge” (130). Such biographies were closer to myths than to modern biographies.

By contrast, the chronotope of the chivalric romance, though it retains elements of this adventure-time, is dominated by the eruptions of the miraculous, which manifest themselves in narrative terms by the presence of “suddenly”, where “the whole world becomes miraculous, so the miraculous becomes ordinary without ceasing at the same time to be miraculous” (152). Chronotopes can become condensed in fundamental organizing metaphors like the chronotope of the road, by which basic conceptions of time and space get translated into narrative terms. Chronotopic analysis thus seeks to address literary history at a very fundamental level; it mediates between historically created and thus changing conceptions of time and space, and their realization in the underlying narratives of literary texts.
As thought patterns changed, with the passing ages, the chronotopes of narratives also changed. The rise of modern realism was a definite turning point in this regard. And with the establishment of the conventions of standard time, the thematic and structural principles of composition of fiction embodied new forms, consciously or unconsciously.

The modern novel became the handmaiden of the new time-consciousness. Ian Watt notes that novel historians have cited “‘realism’ as the defining characteristic which differentiates the work of the early eighteenth century novelists from previous fiction” (10). The rise of the novel side by side with the rise of realism as a modern philosophy is not to be seen as accidental. Descartes, Locke and Hume created an ideological ambience conducive to the birth of the novel. Their ideas created a new attitude to individual identity and epistemology which the narratives began to reflect.

Rejecting “the medieval belief in the reality of the universals, ‘realism’ had come to denote a belief in the individual apprehension of reality through the senses” (Watt 15). The new fictional narratives emphasized the process of “becoming’ as the defining characteristic of human personality. The novel depicted human character as undergoing change and transformation through time. As a derivative of the development of the empirical method of science and the development of mathematical logic, there arose the doctrine that reality could be understood and explained in mathematical terms. The narrative method of the novel fell under this influence. It sought its legitimacy by closely following the method of Enlightenment historiography which claimed to explain history in terms of cause and effect and observed it as a linear progression. It is no wonder that the titles of many novels bore the addendum “history” and purported to be actual historical or biographical records.
The sense of historical past as time receding marked by days and years appears in the new novels as part of their realism. The particulars of time and place are indicated clearly as the action progresses. The individual’s life is seen as part of the historical process. Robinson Crusoe tells us the details of his birthplace and important dates too at the beginning of his story. Moll Flanders refers to the prison “records or registers at Newgate, and in the Old Bailey” (M F 3), creating the illusion of an actual history. The letters of Pamela are dated and timed. “Fielding seems to have used an almanac, that symbol of the diffusion of an objective sense of time by the printing press” (Watt 27), and also is careful to be chronologically consistent as well as historically aware. This certainly was a new way of representing time in narrative. In the opinion of Pam Morris, “the complex handling of time in narrative . . . is one of the great achievements of realist writing, techniques subsequently developed and extended by modernist novelists” (106). This method of depiction conveys “a sense of personal identity subsisting through duration and yet being changed by the flow of time” (Watt 26). In other words, what the 20th century thinkers had seen as the ‘tyranny of time’ began to entrench itself in the new form of fiction in the 18th century.

It is also to be noted in passing that this new chronotope of the novel did not go unchallenged in its time. Laurence Sterne’s The Life and Opinions of Tristram Shandy, Gentleman (1759 –1767) was born two centuries ahead of its time. It played havoc with the notion of a well made plot and focused on character as the centre. It embodied a rejection of the realist epistemology and narrative strategies at the very beginning of the realist novel. But it was considered a freak or eccentricity at the time. In its self reflexive narration and eccentricities in plotting and temporal ordering, Tristram Shandy offered a perfect foil to the novels of Defoe, Richardson and
Fielding. Sterne’s revolt against realist temporality has set him up as an icon for the modernists and postmodernists.

The nineteenth century novel continued to develop along the lines laid down by Defoe – Richardson – Fielding trio with occasional innovations within it, without seriously violating the norms of realism. Emily Bronte’s *Wuthering Heights* (1857) provides an example of innovation in terms of temporal structure during the Victorian age. But even when she makes use of the method of inset narration and flashback, she sets the story in a plausible historical framework and her sense of historical progression remains intact. In any case her purpose was not to represent a new notion of time before her contemporaries.

The industrial civilization and the general cosmology that it projected – the Newtonian mechanical view – began to be challenged towards the closing years of the 19th century. Already “the Romantic movement, by attributing an unprecedented intensity and importance to inner states in opposition to social being, inevitably substantiated a contrast between chronological and linear time as objective and the personal experience of it as subjective”( Easthope 184). And “within this tradition Nietzsche distinguishes between ordinary linear time and the time of the eternal return, that is, a temporality constituted subjectively as the individual will strives to fill the moment of the now so completely that it wishes it would be there for ever and wants the same moment to recur an infinite number of times”(184). Developments in the field of psychology, natural sciences and an attempt to break away from the rationalist philosophy gave rise to the new mode of thinking and in a sense the whole phenomenon that we refer to as modernism.
A certain resentment or suspicion of the clock is of course not unique to the (modern) period, nor altogether new in literature. The *carpe diem* theme common in poetry for centuries, for example partly depends on such thinking. So do many of Shakespeare’s sonnets, and the celebration in *As You Like It* of the fact that ‘there is no clock in the forest’ (3. 2, 303) sums up a widespread sense of the unnaturalness – even the actual hostility to nature – of the clock as a time – measurer. (Stevenson 113)

Increasing urbanization attendant on industrialization took people away from the “more casual rhythms of the country and of agricultural labour, shaped by sunrise, sunset and season” (114). As industrial culture made rapid strides in the 19th century providing a new paradigm for human progress with wealth generation, speed efficiency and mass production, there arose the need for scientific management. “Scientific management made human nature increasingly subordinate to the machinery workers had to serve, or often virtually interchangeable with it” (115). Thus, “entirely regulating working life, the clock functioned as a crucial agent of the new rule of the machine; it also provided an appropriate emblem of the result of such increasingly stringent regulation” (115).

In the two decades following the establishment of the Greenwich standard, the world moved from the charms and idiosyncrasies of local time zones to a system that ensured, globally, that time and space were rationally divided, ordered and defined. This period of radical change in the world’s whole sense of time, the era of the clock’s final triumph in ordering life also coincides quite exactly with the formative years of most modernist authors. (119)
The result of this was that “new precisions, new powers in dividing space and
time inevitably interested the modernists, but did not necessarily seem wholly
agreeable…” (119). In the modernist era “technological change inevitably also
became conceptual and philosophic: a new pace of life created new conceptions of the
fundamental coordinates of experience, space and time” (Stevenson10).

D. H. Lawrence, who was a bitter critic of the civilization of the machine,
reacted to the linear progress idea of time, finding it a cruel and spiritually crippl
thing. He preferred the cyclic view of the pagans, rejecting the Protestant vision of
time and history which he saw as the progenitor of the industrial civilization. For him
“the pagan conception of time as moving in cycles is much freer, it allows movement
upwards and downwards, and allows for a complete change of state of mind, at any
moment”(qtd. Tanaka78).

Photography as a new method of reproducing reality had already established
realism on a new plain, being able to “create the illusion of three-dimensional space
within which things appeared to exist as our eyes in reality see them”(Bazin 11), and
precipitated a crisis in the field of visual arts. This resulted in the anti-realist
movement in the field of painting manifested as impressionism and symbolism and a
host of other styles to follow. The birth of cinematography in the beginning of the 20th
century and its establishment as the most popular medium of expression was yet
another step toward a greater realism in the arts. The photographic reproduction of
movement in time meant that cinema could reproduce time too with a seemingly
complete objectivity. This radically reoriented the modern perceptions of time and
space. Bazin notes that “the cinema is objectivity in time ... Now, for the first time,
the image of things is likewise the image of their duration, change mummified as it were” (15).

Certainly the most influential thinker of the early decades of the twentieth century was Henri Bergson, who attempted to project human intuition as deeper and superior to the intellect. His position in the history of modernism is indeed unique. His philosophical ideas can be seen as part of the modernist reaction to the tyranny of the clock. If the Enlightenment thought placed supremacy of the intellect over other aspects of human intelligence, Bergson reversed that thinking. His Matter and Memory (1896) and Creative Evolution (1907) were attempts to integrate the new ideas developed in the field of biological sciences and psychology and to formulate a new theory of human consciousness. “Bergson assumes a radical ontological opposition between objectified socialised spatiality and a subjective inward duration” (Stevenson 184). Bergson undermined the Aristotelian concept of time as ‘nothing but space’ to replace it with the primacy of the durée. He declared that “….time, conceived under the form of a homogeneous medium, is some spurious concept, due to the trespassing of the idea of space upon the field of pure consciousness” (Time and Free Will 98). Incidentally, in his Creative Evolution he uses the analogy of cinematic reproduction to signify the spatialising intellect. As he says: “We take snapshots, as it were, of the passing reality....We may therefore sum up...that the mechanism of our ordinary knowledge is of a cinematographical kind” (332). The Cinema appeared to be a narrative medium that could integrate space and time like no other.

Bergson saw the trespass of space into thinking about time further assisted by the activity of the intellect, by its disposition to define, divide and categorise.
Time could be truly understood not through the divisive intellect, but by means of intuition, able to apprehend the permeation of conscious states; the seamless flow of creative evolution and becoming. Such views of continuity and duration also create in Bergson’s work a central role for memory: in the evolving flow of conscious states, past ones do not disappear but coexist with and interpenetrate present ones. (Stevenson 104)

In *Time and Free Will* (1889) Bergson asks directly for “some bold novelist, tearing aside the cleverly woven curtain of our conventional ego able to show the infinite permeation of a thousand different impressions shows us under this appearance of logic a fundamental absurdity, under the juxtaposition of simple states an infinite permeation of a thousand different impressions which have already ceased to exist the instant they are named, we commend him for having known better than we know ourselves”(133). This is exactly what Virginia Wolf also was speaking about when she wanted the new novelist to “record the atoms as they fall upon the mind in the order in which they fall” (Modern Fiction 190). Marcel Proust’s monumental work *A la recherché du temps perdu* offered the right response. It is not accidental that “Bergson and his time-philosophy exactly corresponds to Proust, the abstract for the other’s concrete” (Lewis 89).

Side by side with Bergson, we notice how Minkowski and Einstein brought forth revolutionary ideas on time and space. Their ideas were to form some of the recurrent concerns in modern fictional narratives. It is pointed out that “relativity kept new ideas of “psychological time” in the forefront of general interest in the 1920s” (Stevenson 108) which “signified a radical shift in epistemology, the radical challenge to the validity, even the possibility, of human understanding on the universe” (109).
Apart from physics and philosophy, the new view of human personality advanced by Freudian psychology also had its impact. In Freud’s view, past and present are crucially connected, though hardly in the chronological sequence; the past not only continues to exist – though mostly buried in unconscious memories – it is largely the expanding effects of past psychic events that continue to shape and structure present personality”(109).

Bergson’s theory of time stressed the subjectivity and relativity of time within a philosophical mould, anticipating Einstein’s space-time in physics by about 16 years. Einstein’s setting of time in relation to the observer and his motion in space and Bergson’s stress on subjectivity are seen as identical. Both their ideas amounted to the rejection of absolute universal time. Einstein’s theory meant that “each observer would have his own measure of time as recorded by a clock that he carried: clocks carried by different observers would not necessarily agree. Thus time became a more personal concept, relative to the observer who measured it” (Hawking 151).

Science appeared to support the philosopher’s idea. Einstein appeared to be establishing the principle of personal time as a law of physics.

Together the two thinkers provided the template for the modernist experiments with time and temporality in literature and arts. Wyndham Lewis notes that “the philosophy of the space-timeist is identical with the old, and as many people had hoped, exploded bergsonian (sic) philosophy of psychological time. . . .” (Lewis 86). He sees modernism as exemplified in a work like Ulysses the result of a “vast orthodoxy (which) has been in process of maturing in the world of science and philosophy. The material had already collected into a considerable patrimony by the time Bergson was ready to give it a philosophical form. The darwinian (sic) theory
and all the background of nineteenth-century mechanistic belief has now assumed a final form” (87). Lewis’s statement may have been at cross purposes with the intention of these thinkers, because they can best be seen as rejecting the mechanical view. Moreover art had begun to react to the mechanistic outlook of the industrial age even before the percolation of Einsteinian and Bergsonian ideas into the realms of general thought. As Stevenson notes: “The popular impact of Bergson and Einstein may have been owed not only to their genius in generating and persuading people of totally new ideas, but to their formulation within scientific or philosophic discourse of concepts already colouring popular thought, or at least congenial to it” (112).

These new responses of science and philosophy towards the clock and the calendar manifested itself in different ways.

Before the modernist era, there was seldom any conscious attempt to incorporate scientific ideas into artistic endeavour. So much of the modern avant gardist writing resulted from the artists’ attempt to mediate between the world of science and philosophy and the world of contemporary literature. Their fictional works consciously offer new paradigms of cosmology generated by the diffusion of these ideas. The modernist novelists played the leading role in assimilating abstract forms of knowledge and working them into their narratives. This resulted in the rise of experimentalist fiction with radically reconstituted chronotopes.

We have only to review the assimilation of scientific theories of space and time in the nineteenth and early twentieth century literature to see how influential science has been on the representational chronotopes of the English novel. Clearly science does not operate in a closed regime, but affects representational and practical chronotopes through which we perceive the
world and our place in it. Scientific theory and its conceptual chronotopes not only feed into material changes through practical chronotopes of technology and culture, but also change our perception of the shape of the world, and its place and ours in the cosmos. All this has marked effect on how we imagine and represent space and time in representational chronotopes. (Smethurst 101)

One result of this was that there occurred a division between high brow (mostly experimental) and low brow (popular) fiction. Avant garde novels are ‘difficult’ on account of the reasons mentioned above. Science in the modern century appears to drift away from lived human experience or even contradict it. As a consequence, the artists’ task is rendered difficult or forbidding. How can a comprehensible tale be told, based on Unified Field theory or the Big Bang?

One of the earliest responses to the changed notions of time came through time traveling. Theoretical arguments are there to claim that time traveling is possible both metaphysically and logically. But as we know in the empirical world, time traveling is not permitted by the laws of nature. In imagination it is quite possible. There is a large body of writing that exists to demonstrate this. Mark Twain’s famous satire *A Connecticut Yankee in King Arthur’s Court* (1889) presents an early case of time traveling. Twain transports his mechanic hero Hank Morgan to King Arthur’s Camelot of the legendary past, not by means of a time machine, but by means of a physically induced fantasy. The transposition of epochs and of the body happens when Hank receives a blow in the head during a factory brawl! This motif of the blow puts the question of Hank’s time traveling into doubt. Twain would not have bothered, as long as it served the basic purpose of burlesquing the Romantic idealism
of Europe. But he anticipates the science fiction of the 20th century which came into vogue with H.G.Wells.

A decade before Einstein’s formulation of the Relativity theory, Wells came up with the idea of duration as “a fourth dimension”, and time traveling in The Time Machine (1895). This immensely popular novel brought the idea of time traveling into popular imagination. Wells’s pseudoscientific adventure took his readers to an imagined dystopia of a far distant future (the year A.D 802,701). In the opening chapters, he grounds his argument in the discussions between the Time Traveller and his friends in Victorian gentleman’s parlour. The Time Traveller explains to his guests:

Clearly . . . . any real body must have extension in four directions: it must have Length, Breadth, Thickness and —, Duration. But through a natural infirmity of the flesh, . . . . We incline to overlook this fact. There are really four dimensions, three which we call the three planes of Space, and a fourth, Time. There is, however, a tendency to draw an unreal distinction between the former three dimensions and the latter, because it happens that our consciousness moves intermittently in one direction also the latter from the beginning to the end of our lives . . . . Really this is what is meant by the Fourth Dimension, though some people who talk about the Fourth Dimension do not know they mean it. It is only another way of looking at Time. There is no difference between Time and any of the three dimensions of Space except that our consciousness moves along it. (8)
Wells’s vision of the future however, is bleak. The Time Machine presents an apocalyptic “vision of the end of time, as a tentacled leviathan at the shore of a blood-red sea” and “a terrible dread of lying helpless in that remote and awful twilight (which) took us much closer to desolation than most of his sci-fi descendants would be willing to boldly go” (Morrison 29).

Both Twain and Wells handled their subjects in the conventional realistic manner, though their purposes are divergent. Twain was satirizing the romantic tradition of chivalry. Wells, the more scientifically oriented of the two was exploring the challenging possibilities of science. He was able to provide an apparently persuasive argument for the possibility of time traveling supported by the vivid descriptions of the hero’s experiences in the future world.

Within the realist tradition, serious European novelists also reacted to the varying notions of time and space though they did not experiment with the structure. Direct discussions and symbolizations of temporal experience appear in Thomas Mann’s The Magic Mountain (1924). Mann’s hero Hans Castorp’s visit to his invalid cousin Joachim in the Davos sanatorium in Berghof, exposes him to a different world of time from the one he is familiar with in the valley. It is a place where “they make pretty free with a human being’s idea of time,… three weeks are just like a day …”(7). As Settembrini, one of the eccentric inmates tells him, his visit is like the descent of “Odysseus in the kingdom of the shades” (57).

Castorp’s journey through the Mountains towards his destination becomes an occasion for contemplation on space and time.

Space, rolling and revolving between him and his native heath, possessed and wielded the powers we generally ascribe to time. From
hour to hour it worked changes in him, like to those wrought by time, yet in a way even more striking. Space like time, engenders forgetfulness; but it does so by setting us bodily free from our surroundings and giving us back our primitive unattached state….time we say is Lethe…(4)

Mann’s work can be seen as a dramatization of the philosophical concerns expressed by Spengler, Einstein and Bergson within a realist narrative mode.

Did the modernist novel with its attempt to visualize time, abolish space from the novel? The immediate answer would be no. It is simply that it evolved a new chronotope, one in which space moved from the outside to the inside. The stream of consciousness novels were the most dominant narrative form developed by the modernists. It is in this genre that we discover the modernist chronotope which involves a reconception of space and time.

To restate the case: reconception of space means that it assumes “character” and becomes “subjective”. It does not serve as a painted curtain or settings for the drama of life presented. Instead it becomes subjective, impressionistic and even symbolic. Space becomes meaningful only in terms of the actor or perceiver who interacts with it or inhabits it.

The reason for this is that “modern writers often resist “materialism,” believing that a materialist stress on objects and environments rules life out” (Matz 70). Virginia Woolf’s description of Wells, Bennet and Galsworthy as “materialists”, “concerned not with the spirit but with the body” (Modern Fiction 185), points to where the modernists’ interest lay. Modernist fiction presents “impressions, essences, things in flux”, makes “subjective consciousness become central” reducing narration
to “the spare essentials of thought and language”. Here space loses the “fixity and solidity that had constrained fiction to the material world…would dissolve into the welter of impressions” (Matz 70). Such dissolution is necessary “so that real life could return to the world of the novel” (70). In the process, the plot underwent a radical change. It brought radical changes in the structure of novelistic narratives.

In their attempt to represent the inner reality, and to replace clock time with the experiential time, the narrative became fragmented. The highlighting of time meant the disorientation of the old temporalities. In other words, the effect of this on the structure of the novel is to “spatialise time” and “temporalise space”.

… The modern novel, as we have seen, was largely a matter of moving inward in that movement, it met more profoundly with time than with space. Indeed it might be possible to say that this new fiction left space behind, as strange as it may sound. As we will see, this departure, and this relative lack of engagement with public space, may have been one of the things future novelists would want to change. (Matz 70–71)

The implications of this change were momentous for both the writer and the critic. William Harmon notes that “the novels of Proust, Mann, Joyce, and Faulkner, with their subtle manipulations of temporal and spatial dimensions, made it clear that space-time problems are themselves fit themes for literature. And these creative investigations were accompanied by a resurgence of critical interest in the aesthetics of time (131).

This interest in the aesthetics of time resulted in spatialised narratives. Spatialisation is in a sense an attempt to make time “visible” like in surrealist and cubist paintings of Dali and Picasso. Whereas the realist novels attempted to hide the
clock, by weaving seamlessly mechanical structures of fiction, the modernist novels disrupt them by cutting up the plots and mocking the clock by twisting its hands and making the artificiality of public time visible. To put it differently we can argue that art was moving towards abstraction and subjectivity as the world was losing its cultivated certainties of belief and conventions. It was according to many thinkers, the culminations of tendencies that had been brought into being much earlier. Eric Auerbach observes:

As recently as the nineteenth century, and even at the beginning of the twentieth, so much clearly formulable and recognized community of thought and feeling remained in those countries that a writer engaged in representing reality had reliable criteria at hand by which to organize it. At least, within the range of contemporary movements, he could discern certain trends; he could delimit opposing attitudes and ways of life with a certain degree of clarity. To be sure this had long since begun to grow increasingly difficult…. and the subsequent increasing predilection for ruthlessly subjectivistic perspectives is another symptom. (551–52)

He also has this to say about how the artists attempted to cope with this in their art:

At the time of the First World War and after – in a Europe unsure of itself, overflowing with unsettled ideologies and ways of life, and pregnant with disaster – certain writers distinguished by instinct and insight find a method which dissolves reality into multiple and
multivalent reflections of consciousness. That this method should have
been developed at this time is not hard to understand. (552)

1.7.a. Postmodernity and Time

By general agreement the age of Postmodernity (if it could be called an age at
all) is marked by end of World War II. Though thinkers like Toynbee thought of the
Postmodern age as having started with the end of the World War I, it is in the 1980s
that the term entrenched itself in cultural discussions. This happened with Lyotard’s
famous statement which defined “postmodernism as incredulity towards
metanarratives” (xxiv). The various controversies surrounding this concept are yet
unsettled. The question of whether postmodernism is an extension of modernism or a
rejection of it is a widely debated one. On the one side postmodernism seemed to
carry the subjectivity of the moderns to the extremes, resulting in a celebration of
uncertainty and relativism. Smethurst looks at modernism and postmodernism as
deeply related. He says: “Rather than a decisive break with modernism,
postmodernism is a re–engagement and a reworking of all that might be considered
modern, and at the same time, it is engagement with the material conditions of
postmodernity” (2).

Our purpose here is to make a distinction between the novels of the early 20th
century and those of the second half when the nouveau roman appeared. They were
characterised by a rejection of certain aspects of high modernism which naturally
includes the structural principles. “Postmodernism” according to Smethurst is “a
significant and far-reaching shift in the indicators of space and time, affecting areas of
life as far apart as cosmology and ecology, architecture and archaeology, mysticism
and history, cyberspace and cinema” (1).
Arguably, the treatment of time and temporality that the modernist writers initiated reached its natural culmination in the postmodernists. The basic impulse of this may be said to have come from Joyce and Proust, but they were carried to new levels by Jorge Luis Borges, Alain Robbe-Grillet, Julio Cortazar, Djuna Barnes, Lawrence Durrell, Martin Amis and a host of novelists of different languages. An example of the postmodernist attitude to time is characterized by Kurt Vonnegut’s Billy Pilgrim who gets “unstuck in time” or is “a spastic in time, has no control over where he is going next, and … he never knows what part of his life he is going to have to act in the next” (Slaughterhouse-Five 26), because the story moves back and forth in time without any comprehensible logic. In such novels the story attains a complete spatialisation so that the narrator or the hero (like Billy Pilgrim) can enter into the story from any point, relive any moment in his life and past present and future are abolished, and freely travel in time. As explained to him by the Tralfamadorians “all moments, past, present, and future, always have existed, always will exist… can look at all the different moments just the way we can look at a stretch of the Rocky Mountains…” (29). Time is a fourth dimension set in opposition to the notions of durée or linearity, which in other words, is to say that the postmodern writer completely spatializes time. The modernists, while focusing on subjective time still found a reference scale in public time. An examination of the structure of the postmodern novel reveals the effect that the writer is trying to achieve; that is the sense of simultaneity for which historicity could be discarded.

The method of the spatialisation of time gets curiouser and curiouser as we explore the postmodernist writing further. In his ‘The Garden of Forking Paths’, Jorge Luis Borges presents the “universe conceived by T’sui Pen” the mysterious ancient
writer who wrote the ‘The Garden of Forking Paths’. For T’sui Pen time is “Unlike Newton and Schopenhauer, … did not believe in a uniform absolute time: he believed in an infinite series of times, a growing dizzying web of divergent, convergent, and parallel times”(127). Time is an unspeakable mystery hence the dead author does not mention it except symbolise it in metaphors and circumlocutions.

The Postmodernist writer writing under the influence of Lyotard and Derrida “has changed the way the past is re-presented, the contemporary apprehended, and it has changed fundamentally perceptions of space and place” (Smethurst 1). When we argue that Postmodernism is a response to modernity, there is a difference in that the time-spaces of modernism are rather more transparently linked with the artistic, cultural and material projects of modernity. The postmodern shift is less driven by projects and material conditions, with the one major exception of globalization through which the time–spaces of postmodernity certainly follow on from modernity. But in other respects, the postmodern is affected more by a lack of development, loss of direction, and ambivalent approaches towards the past and the future (Smethurst 2).

Yet another distinction that we can make between these two epochs is that even in high modernism at its most solipsistic, thinking and artistic representation reflect material changes in a real world. And this real world can be detached from the world of art and representation that in turn seeks to reflect or act upon that world with the intention, sometimes of changing it. Postmodernism on the other hand is haunted by the scepter of self-consciousness and the idea that representations of the world more likely form the world (or rather worlds) rather than take their form from it. (3)
What modernism attempted was “to register the passing moment and find the form to render transience of the present” (98). Postmodernism on the other side displays an acute consciousness “of a gap between experience and knowledge: a gap that means knowledge always comes too late to explain the present moment, because it was always formed out of those older experiences”(98). The result of this was that there was a “spatial turn in the postmodern, a shift from a historical imagination to a geographical one, and a reassertion of the dialects of space after a modernist downgrading of space into the service of time” (97). The cultural conditions leading to this is suggested by Marshall McLuhan who sees the present condition of the West as undergoing an “implosion” He explains:

After a thousand years of explosion, by means of fragmentary and mechanical technologies, the Western world is imploding. During the mechanical ages we had extended our bodies in space. Today after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as the planet is concerned. (19)

McLuhan’s reference to the post industrial society is echoed by many other contemporary thinkers.

1.7.b. On Postmodernist Fiction

Ursula Heise argues that the post World War II developments in transportation and communication have affected the structure of literary time. Time is compressed by the conquest of distance. Computer technology has given currency to what she describes as the “postmodernist predilection for spatial metaphors. . . .” that most strongly impresses one with the sense that postmodernist culture extends in space
rather than in time” (1–2). She also notes that the narrative organization of postmodern novels reconceives temporality. . . and how these formal strategies form part of a restructuration of time goes far beyond literature and affects a range of cultural and social practices (2–3). Fragmentation and multiplicity become the order of the day in both character and plot (7). Cristopher Nash explains how a number of 20th century writers worked with

the selection of narrative situations in which time would on psychological grounds appear to stand still. Not only are the durations of histories reduced (from the conventionally attractive 24-hour span of Ulysses to 1 hour, to 2 minutes, to a second). The narrative is contextualised in terms of some object borrowed from another, visual medium (a photograph, a painting), together with the notional preoccupation with the time-freezing aspects of the visual media. (93)

The language of fiction itself was changed to suit the purpose.

Discourse will adopt grammatical and syntactic strategies by which to crush out, to expel the linear implications of linear construction – by the cobbling together of clauses without conjunctions, the replacement of indicative predicates with their participal and infinitive counterparts, the reduction of punctuation, the conflation of data within seemingly ‘endless’ paragraphs. (93)

Fiction was attempting to adapt itself to the new thinking, giving up the conventional narrative strategies.

In its reach for the at-once static and global effect, fiction – sometimes with fear and trembling, sometimes with a kind of ecstatic abandon – tentatively
approaches the extinction of the apprehension of causality on which the Realist text depends for its coherence. Once again (wave versus particle) the indicated signs are that you can’t have both the event and a rational, organized savvy of its relationship to other events. (93 – 94)

The dismissal of the premises of realism is a basic feature of postmodernism. Jean-François Lyotard asserts that modernism and postmodernism occur in the realization that Enlightenment rationalism and scientific positivism are not grounded in objective truth and reality. Instead, they are merely “language games,” like narrative itself, that create “the effects of reality,” that, in a postmodern age, become “the fantasies of realism” (74).

Realistic fiction, objective history and positivist science are, according to Lyotard’s argument, misled in their claims to absolute knowledge their attempts to configure the world as an eminently understandable and coherent system. They are also ideologically charged systems of thought that posit an immanent and essentialized world where none exists.

1.8. Time by the Tale: the Poetics of Time

We have already noted that the twentieth century, which is the most time-conscious century –, is marked by a myriad of time philosophies which found expression in the fictional narratives. There was also greater attention to form both by the artist and the critic. These were grounded in philosophic formulations which recalled Zeno and Augustine. The Bergsonian stress on experiential time did indeed echo the aporia posed by Augustine, though not directly. In the latter half of the twentieth century, Paul Ricoeur dominated the philosophical analysis of time, developing his narratological approach as an attempt to solve the enigma of time.
Ricoeur’s theory brings together St. Augustine and Aristotle in an attempt to resolve the issue of the aporias of time. According to Ricoeur Augustine’s “threefold present” and Aristotle’s “threefold mimesis” correspond to each other. The philosophical premise for a narratological approach to time and temporality in fictional narratives can start off from Ricoeur’s thought. His hypothesis is that “temporality cannot be spoken of in the direct discourse of phenomenology, but rather requires the mediation of the direct discourse of narration” (3:241). In other words time awareness can be realised only through the act of narrative construction.

Ricoeur’s resolution to the aporias of time starts with his persistent argument “that speculation on time is an inconclusive rumination to which narrative activity alone can respond” (1: 6). He does not suggest that it “solves the aporias through substitution”. It does so “in a poetical sense and not a theoretical sense of the word” (1: 6). Narrative comes alive through the three stage process of “emplotment” (1:6).

Ricoeur begins from where Augustine left off. Augustine was attempting to reckon with the philosophical conundrum of real world time, stated in the context of his thinking on God and eternity. His attempt is to explicate the philosophical issues behind our empirical experience of time. On the one hand there is the cognitive phenomenon of time as real because human beings experience the coming and going of things, but on the other (subjectively) we split time into three separate ontological categories – past, present and future.

Augustine rejected the Aristotelian theory of time as the measure of motion and worked with Plotinus’ ideas. Ricoeur observes that “the Augustinian analysis of time offers a highly interrogative and even aporetical character which none of the
ancient theorists of time, from Plato to Plotinus, had carried to such a degree of acuteness” (1:5).

Augustine deals with the two basic enigmas of time in Book II of *The Confessions*. He raises a series of questions, one leading to the other. The first enigma is that time is a “being that lacks being” – that is time with the past, present and future. He asks the question of how it is possible for us to conceive of time as a reality “since the future is not yet, the past is no longer, and the present does not remain?” (1:7). The solution is arrived at in the idea of the “threefold present” (1:16). The second problem is “the enigma of the extension of a thing that has no extension” which he solves with “the thesis of the distension of the mind (*distentio animi*)” (1:16). Time was an “extension of the mind itself” and “the extension of time is a distension of the soul” (1:16). Ricoeur concludes that “the notion of *distentio animi* will serve, precisely, as a substitute for this cosmological basis for the span of time” (1:14–15) and goes on to argue that “what remains, then is to conceive of the threefold present as distension and distension as the distension of the threefold present” (1:16).

Augustine demonstrates “the dialectic of expectation, memory, and attention, each considered no longer in isolation but in interaction with one another. It is thus no longer a question of either impression–images or anticipatory images but of an action that shortens expectation and extends memory” (1:20).

Ricoeur notes further:

The soul “distends” itself as it “engages” itself – this is the supreme enigma.

But it is precisely as an enigma that the resolution of the aporia of measurement is valuable. Augustine’s inestimable discovery is, by reducing
the extension of time to the distension of the soul, to have tied this distension to the slippage that never ceases to find its way into the heart of the threefold present – between the present of the future, the present of the past, and the present of the present. In this way he sees discordance emerge again and again out of the very concordance of the intentions of expectation, attention, and memory.

It is also this enigma of the speculation on time that the poetic act of emplotment replies. But Aristotle’s *Poetics* does not resolve the enigma of the speculative level. It does not really resolve it at all. It puts it to work – poetically – by producing an inverted figure of discordance and concordance. (1:21 – 22).

Ricoeur also poses the problem of measurement which starts from Augustine’s reflection on the simultaneous presence in the mind of past things (memory), the present things (attention) and of future things (expectation).

He further notes that

the most exemplary attempts to express the lived experience of time in its immediacy result in the multiplication of aporias, as the instrument of analysis becomes ever more precise. It is these aporias that the poetics of narrative deals with as so many knots to be untied. In its semantic form, our working hypothesis thus amounts to taking narrative as the guardian of time, insofar as there can be no thought about time without narrated time. (3:241)

This is why narratological analysis becomes handy in understanding the cultural models of time objectified in novelistic narratives. Therefore our intention is
to analyse the novels of William Faulkner and Lawrence Durrell whose works are of a representative nature.

Of course, modernist experimentation in narrative offered a forceful challenge to traditional concepts of time, character, and causation (among other things), which redefined the idea of plot in fiction. The quotidian life of a Leopold Bloom or a Clarissa Dalloway with its minute detailing of life from within the mind did not fit the idea of verisimilitude or the so called “represented action” envisaged by the Neo-Aristotelian critics. It needed a new generation of critics to refine previous definitions and develop new tools in an attempt to account for the more radical play with fictional structures produced by the high modernists and their successors – the postmodernists. Structuralist narratology developed in this context.