

Aspects of Western Philosophy
Dr. Sreekumar Nellickappilly
Department of Humanities and Social Sciences
Indian Institution of Technology, Madras

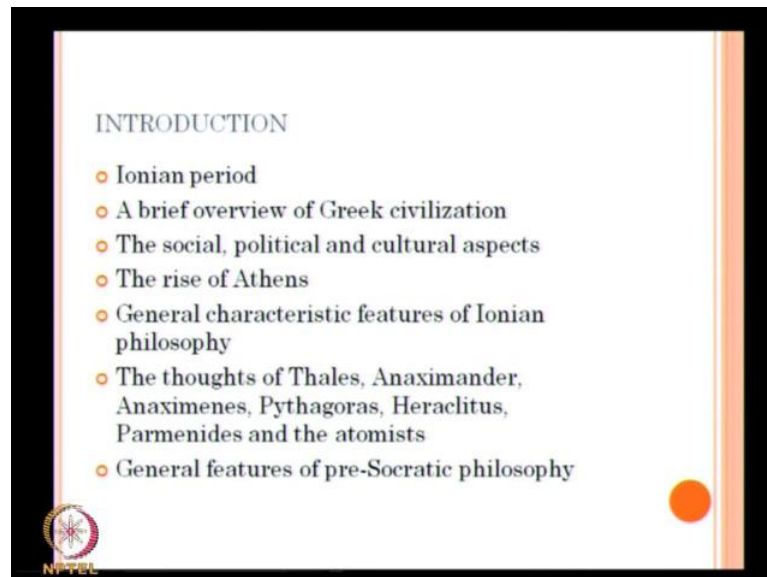
Module – 01

Lecture – 01

Greek Philosophy: Ionians, Pythagoras, Parmenides, Heraclitus and Democritus

Welcome viewers; this is a course on Western Philosophy. The title of the course is Aspects of Western Philosophy, and this is the first module and the first lecture.

(Refer Slide Time: 00:24)

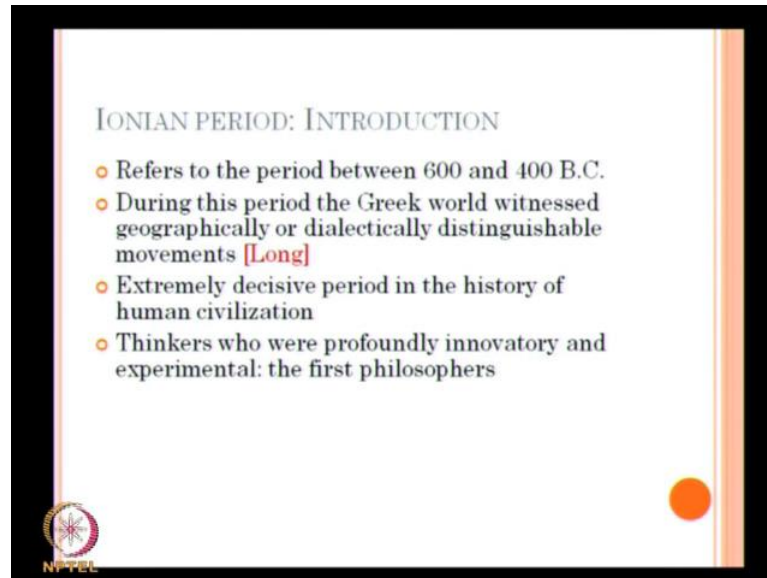


The topics which we are going to discuss are; first of all we see the Ionian period then we will go on discussing or having a very brief overview of Greek civilization. This is very essential to understand the nature, the general features and characteristic features of Greek philosophy; then we will have the social, political and cultural aspects that determined the nature of Greek civilization and Greek philosophy.

Then we will see further the rise of Athens because Athens is very important because it is most of the philosophical thought that is originated in early Greek world as originated in Athens one of the city states. Again we will wind up our discussions with the general characteristic features of Ionian philosophy, and we will also have a brief look into the a specific philosophical use of some thinkers not all of them, this is not an exhaustive account of the Ionian or Pre-Socratic philosophy, but a very brief overview of some

selected thinkers like Thales, and Anaximander and Anaximenes, Pythagoras, Heraclitus Parmenides and also the atomists. And this will be followed with the kind of summary of the Pre-Socratic philosophy that is what we are planning to cover in this lecture.

(Refer Slide Time: 01:55)



So, we will start with an introduction to the Ionian period in Greek philosophy, which is the very important period in the entire history of western philosophy. And this is the period, which we refer to the period between 600 and 400 B.C by Ionian period. And during this period the Greek world witnessed geographically or dialectically distinguishable movements, very crucial period in the history of Greece, in the history of human thought and in the history of western philosophy. That is why it is an extremely decisive period in the history of human civilization as well, thinkers who were profoundly innovatory and experimental whom the now refers to as the first philosopher of westerns philosophy; westerns history.

(Refer Slide Time: 02:52)



Before we proceed further, let us have a very brief look at the map of Greece. So, we can see the city states here, we can see here a Crete Athens, Thebes, here is Olympia and this are all the what we refer to as the Greek world. Here will see the Aegean Sea, and what is so important to note is the emergences of city states? Because we can find that the entire Greek civilization is concentrated on this city states or the emergences of philosophy is also associated with the emergences of various city states in the Greek world.

So, there are different cultures. So, that is one thing which is very important to be noted that when we call Greek philosophy, we are talking about the philosophical thinking, the thoughts that originated in various Greek cities. And Greece as such did not exhibit a very homogeneous culture of civilization as such. There are different cultures that existed in different city states, the environments and socio political structures were also different in this different city states. So, these differences also contributed to the richness and the diversity of Greek philosophy as we understand it today.

(Refer Slide Time: 04:15)

The slide is titled "GREEK CIVILIZATION: A BRIEF OVERVIEW" and is attributed to "AS DESCRIBED BY BERTRAND RUSSELL IN THE HISTORY OF WESTERN PHILOSOPHY". It features a red box with a quote and a bulleted list of historical facts. The NPTEL logo is in the bottom left corner.

GREEK CIVILIZATION: A BRIEF OVERVIEW
AS DESCRIBED BY BERTRAND RUSSELL IN
THE HISTORY OF WESTERN PHILOSOPHY

IN all history, nothing is so surprising or so difficult to account for as the sudden rise of civilization in Greece.

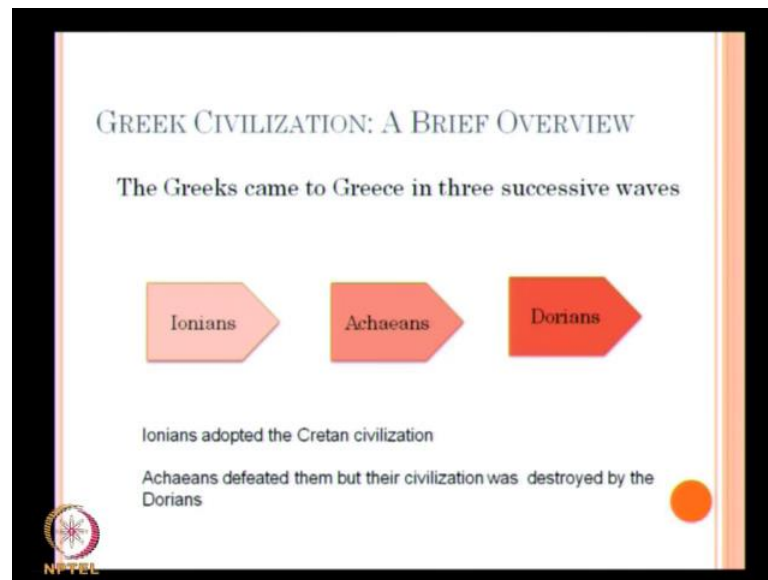
- From around 2500 B.C., to 1400 B.C. the Minoan culture existed in the island of Crete and it spread, about 1600 B.C., to the mainland of Greece
- Minoan culture was dominated in commerce and was artistically advanced
- About 900 B.C., Mycenaeans, who spoke Greek conquered them

NPTEL

So, before we look into the details of Greek philosophy, let us have a very brief overview of Greek civilization. And this is particularly accounted by Bertrand Russell in his a history of western philosophy. So, this account realized on Bertrand Russell's account in his book, "History of western philosophy". This is what Russell's says at the very outset, in all history nothing is so surprising or so difficult to account for as the sudden rise of civilization in Greece. So, there are lot of issues connected, that are lot of arguments, lot of viewpoints about the emergence of Greek civilization, I am not entering into those details here.

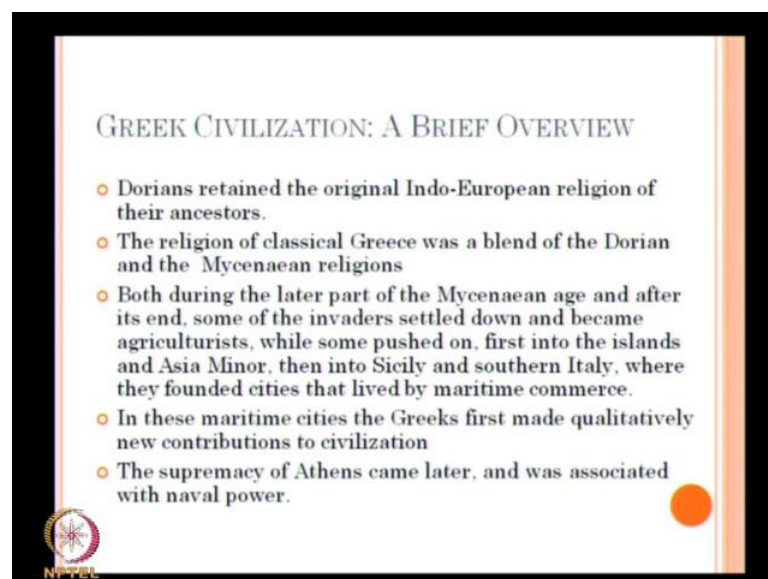
I will straight away come to the point from around 2500 B.C to 1400 B.C, the Minoan culture existed in the island of Crete and it spread, about 1600 B.C to the mainland of Greece. This is the beginning we can understand this as the begging, and the Minoan culture was dominated in commerce and was artistically advanced. Again about 900 B.C, the Mycenaeans who spoke Greek conquered them.

(Refer Slide Time: 05:36)



And when you come to Greek civilization again the Greeks came to Greece in 3 successive waves, this is the according to Bertrand Russell. First the Ionians; then came Achaeans, and finally, the Dorians, and these are not there are lot of conflicts involved in this successive arrival of Greeks. The Ionians adopted the Cretan civilization, the Achaeans defeated them, but their civilization was destroyed by the Dorians. So, it is a story of conflict as well.

(Refer Slide Time: 06:13)

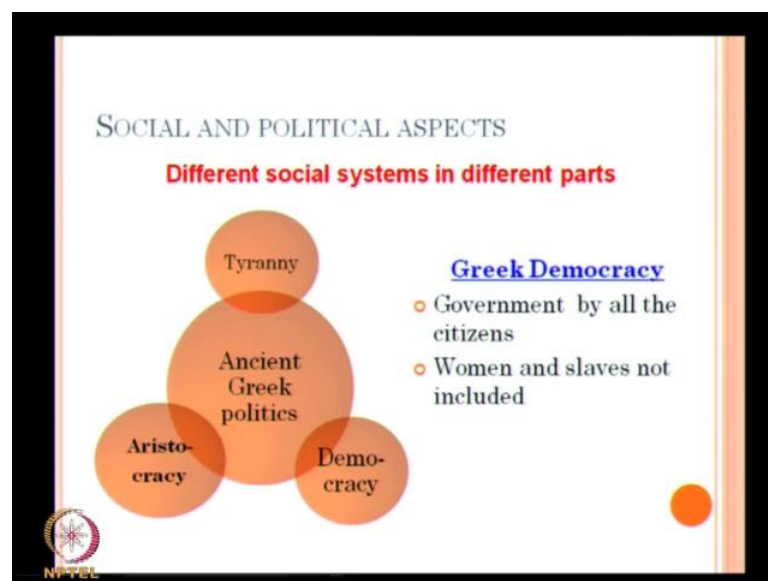


Again Dorians retained the original Indo-European religion of their ancestors. So, when we talk about Greek civilization, the first thing that comes to your mind probably is the wonderful religion these people developed, which is depicted and narrated in the works of Homer (Refer Time: 06:33). So, Dorians have retained the original Indo-European religion of their ancestors, and that was spread all over Greece during this period.

The religion of classical Greece was a blend of Dorian and the Mycenaean religion. Both during the later part of the Mycenaean age and after it is over, some of the invaders settled down and became agriculturists, while some pushed on, first into the islands of the Asia Minor, then into Sicily and southern Italy, where they founded cities that lived by maritime commerce. Again in these maritime cities the Greeks first made qualitatively new contributions to civilization.

So, here onwards we have to be a little more attentive that real contributions to human civilization start with this sitting down of Greek people. The supremacy of Athens came a little later, and was associated with naval power. I will explain it in more detail while we proceed. And now we listen to the social and political aspects, that shaped Greek civilization or Greek culture and philosophical outlook.

(Refer Slide Time: 07:41)

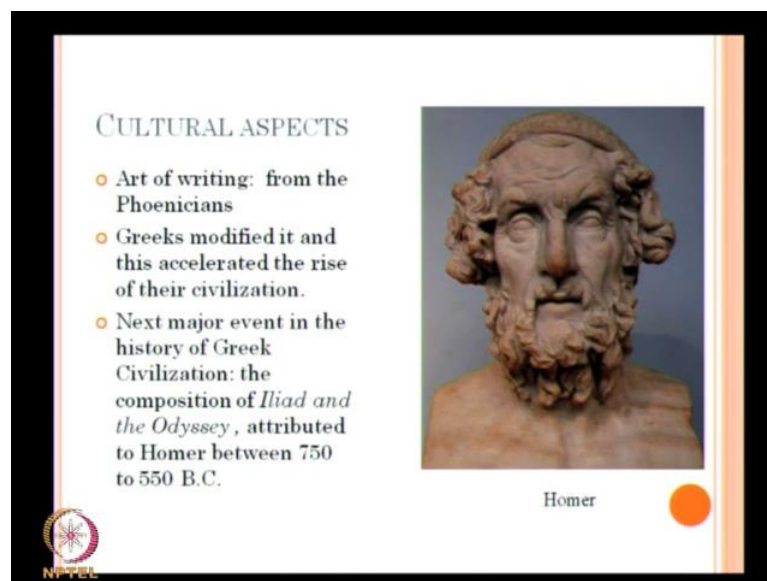


So, here when we talk about the ancient Greek politics, there are three major approaches, or rather three major trends that are prevalent. First of all there is the tyranny period the

tyranny, then comes the aristocracy, and then comes democracy. So, all these 3 existed at the same period in different cities and we can see that there is a kind of conflict between the supporters of aristocracy and support of democracy, later which will find this is culminated in the death of Socrates as well. We will discuss all these issues in the subsequent lectures.

And here one interesting aspect is that when we talk about Greek democracy, it is the unique consumption of democracy, not in the sense we understand the term democracy today in the modern world. So, but still it was a garment by all the citizens, but they have a consumption of citizen which was unique, it was not an all inclusive notion that it never included every human being in the society, of course they left out women and slaves, they were not included into the category of citizen in the Greek democratic culture.

(Refer Slide Time: 09:11)



The slide is titled "CULTURAL ASPECTS" in a serif font. It contains three bullet points, each preceded by an orange circle. The text of the bullet points is as follows:

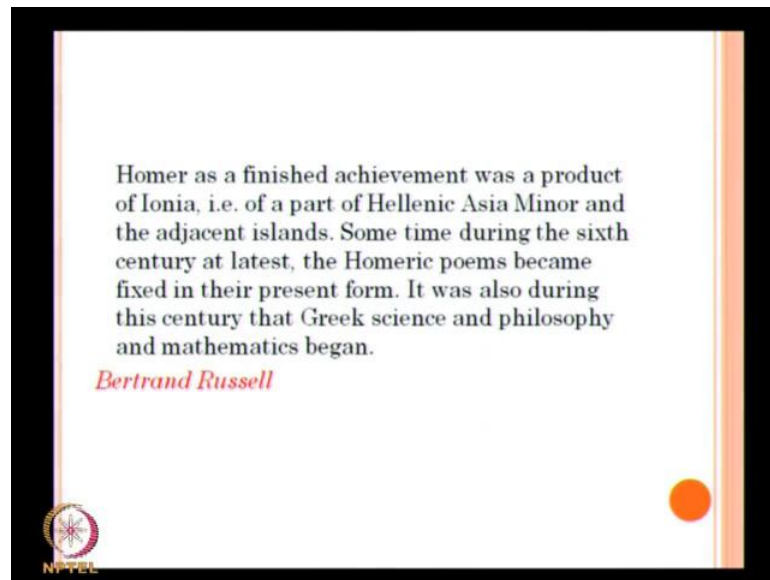
- Art of writing: from the Phoenicians
- Greeks modified it and this accelerated the rise of their civilization.
- Next major event in the history of Greek Civilization: the composition of *Iliad* and *the Odyssey*, attributed to Homer between 750 to 550 B.C.

To the right of the text is a photograph of a classical marble bust of the poet Homer, showing him with a full, curly beard and hair. Below the bust, the name "Homer" is written in a small, plain font. In the bottom left corner of the slide, there is a small circular logo with a red and white design, and the word "NPTEL" is written below it. A solid orange circle is located in the bottom right corner of the slide.

So, this is poetry of Homer, and when we refer to cultural aspect of course, Homer is one person which comes to our mind so frequently and so suddenly. And here we have to refer to the art of writing and this was the Greeks of got this from the Phoenicians, Greeks modified it and this accelerated the rise of their civilization, that is another interesting thing about Greek civilization and also about Europeans civilization in general that they have got have lot from others, from other civilization, from the Asian. But they have made it have appropriate it further developed it.

Similarly the art of writing was also sort of developed further and this is resulted in the dramatic rise of Greek civilization. And next major event in the history of Greek civilization is the composition of Iliad and the Odyssey by Homer, which already mention during 750 to 550 B.C.

(Refer Slide Time: 10:16)



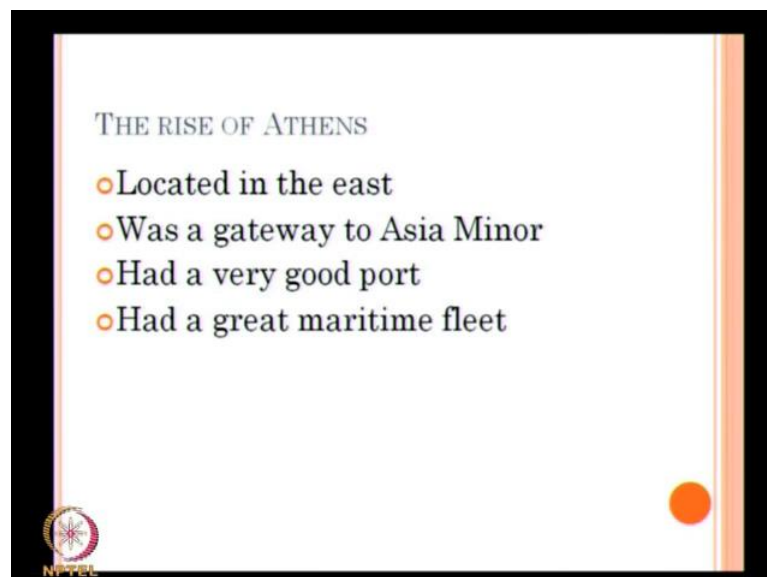
So, here is the paragraph, here is a quotation from Bertrand Russell, Homer as a finished achievement was a product of Ionia, that is a part of Hellenic Asia minor and the adjacent islands. Sometime during the sixth century at latest, the Homeric poems became fixed in their present form. It is also during this century that Greek science and philosophy and mathematics began.

(Refer Slide Time: 10:40)



So, let us have a kind of summary. The three main civilization of Greece law: the Trojan in troy, the Cretan or Minoan in Crete and the Mycenaean in the Greek mainland.

(Refer Slide Time: 10:55)

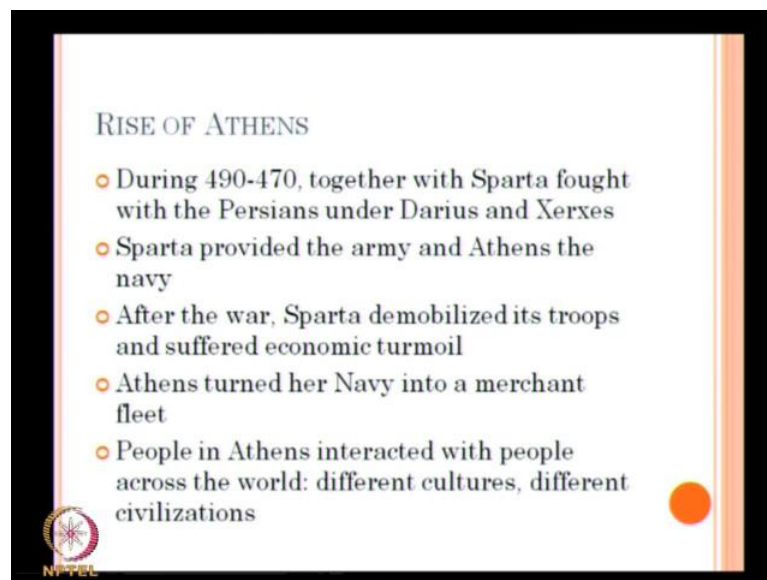


And the one thing to be noted here, when we since this is course and philosophy, the most working aspects or the important and the relevant thing to be noted is the rise of Athens as a superpower; super power not in the modern sense, not in the military sense of atoms, but in the intellectual sense in the term. So, there is several reasons for that

geographical, cultural, historical, political and several other reasons for this. The first one is that is located in east, was a gateway to Asia Minor.

So, since it performed gate fail, lot of exchanges went all, lot of interaction with other culture other civilization happened, this is contributed to the research and diversity of Athenian people. Had a very good port that is another reason, because since it very good port commerce to place in a major way had a great maritime fleet.

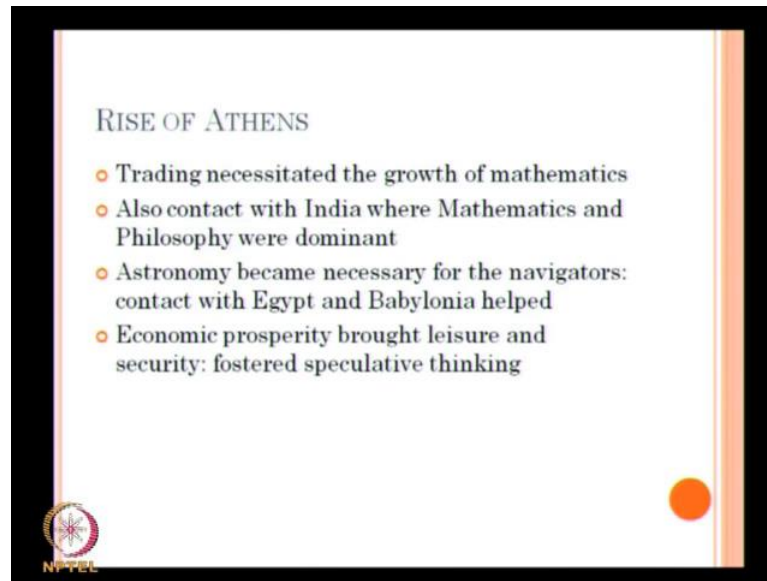
(Refer Slide Time: 11:58)



And again during 490 to 470 B.C, together with Sparta, Athenian fought with the Persians under Darius and Xerxes. So, this is another very important aspect, political aspect because there is fight, there is conflict; there is war with Persians who are Asian. So, Asia and Europe started fighting with each other during this period and this war Athenians was supported by Sparta as well. Sparta provided the army and Athens the navy and Europeans fought against the Asian and finally defeated them.

After the war, now suddenly that is reality to face, after the war what happened Sparta demobilized it is troops and suffered economic turmoil, because the troops that send back home demobilized and what will this people do? But for Athens turned it is navy, because Athens contributed to naval power. So, it could immediately transformed turn it is navy into merchant feed, which is for the contributed to development of commerce, economic vibrant economic activities. People in Athens interacted with people across the world different cultures different civilizations.

(Refer Slide Time: 13:23)

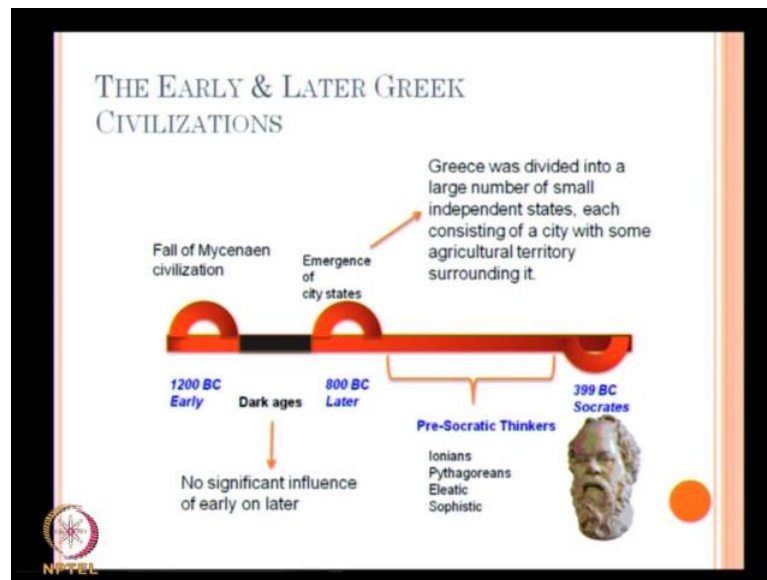


And again trading necessitated the growth of mathematics. So, gradually this process this vibrant economic process has also (Refer Time: 13:34) growth of sciences, various sciences, first of all mathematics, because trading necessitated the growth of mathematics also contact with India, where mathematics and philosophy were dominant. They had trading relation with India since ages, the Greeks and the Romans had trading relationship with India. During that period India was great civilization; where mathematics was developed, astronomy was developed and also philosophy was dominate.

So, naturally the Greeks were also they also make into contact with this individual developments in other civilization and other cultures. Astronomy became necessary for the navigators, because they have to sort of go to the sea, go to the Ossian and to find there directions they need to master in astronomy and this they could do because of their contact with Egypt's and Babylonian civilization, where astronomy was developed.

And economic prosperity the next step, Economic prosperity naturally got leisure and security: which are essential for speculative philosophical thinking. So, naturally there is lot of leisure time available for the rich people in Athens, to think about the completed about the first realities to highly metaphysical questions, raise the first metaphysical most in the inventory questions of human reality.

(Refer Slide Time: 15:01)

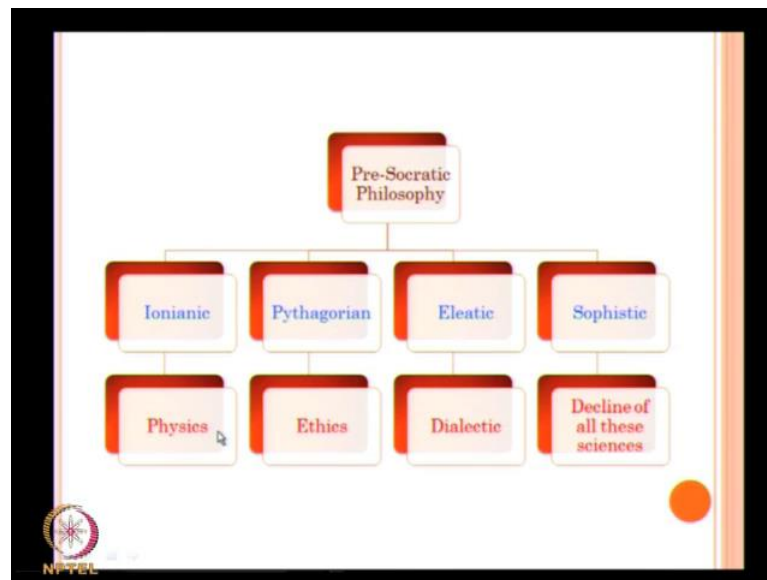


Now we see the brief summary of this development that we have discussed now. So, the early and later Greek civilization: the early period is to 1200 B.C, where the fall of Mycenaean civilization is what we refer to as the early period. Then comes 800 B.C which is called the later civilization, where the emergence of city states took place. In between you have the dark ages; we do not know much about this period, what happened this period, the intellectual or other kinds of developments that took place during this period is not really known to us.

And also you know no significant influence of early on later, because of this dark ages which comes in between, there is no significant influence of the early on the later. And when we talk about emergence of city states I have already mentioned it, Greece was divided into a large number of small independent states, each consisting of a city with some agricultural territory surrounding it. So, this is what gives your picture of Greek city states.

And finally, we have the greatest philosopher of Greek civilization, agreed for greatest philosopher of Greek civilization Socrates 399 B.C and we are particularly concerned about the Pre-Socratic thinkers here, this is the Pre-Socratic thinkers with whom we are dealing with in this lecture, Ionians Pythagoreans, Eleatic philosopher and the Sophistic. Sophistic of course, we not be discussing in this lecture.

(Refer Slide Time: 16:43)



So, this is again a brief overview of philosophy, you have Ionianic, Pythagorean, Eleatic and sophistic. And here Ionian thinkers have developed they were good in physics, physics in the not in the typical scientific of the term, we identify it has the development of physics here because these philosopher were naturalist; they were concerned about the natural world which is sensible. When we come to Pythagoreans, Pythagoreans was reputed for his developing of philosophy based on mathematic numbers and also religion.

So, ethics was given at most importance in Pythagoras philosophy. So, ethics, then when it is comes to Eleatic will find the dialectic development. So, physics ethics and dialectic and when it comes to the sophistic, which is almost Socratic period, we find it decline of all these sciences. So, there you can find that the reason real meat for emergence of philosophy a new fashion which will see the subsequent lecture.

(Refer Slide Time: 18:04)

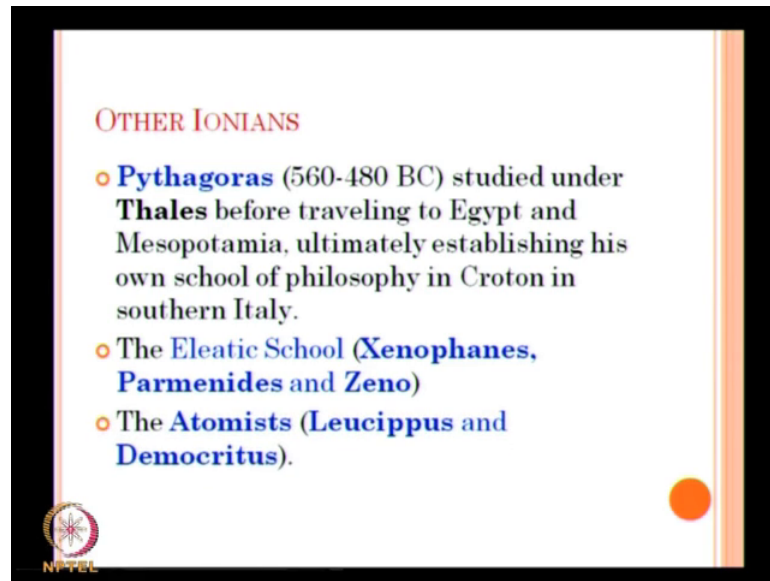
<u>Earlier Ionians</u>	<u>Later Ionians</u>
<ul style="list-style-type: none">◦ Thales, Anaximander, and Anaximenes◦ The first physiologists or students of nature [Aristotle]◦ The problem of the origin and laws of the physical universe◦ The world has originated from a primitive substance	<ul style="list-style-type: none">◦ Heraclitus, Empedocles, and Anaxagoras◦ The problem of the origin and nature of the universe◦ Distinguished the primitive world forming force from the primitive matter of which the world was made◦ Force is distinct from matter

Now, when we talk about have a very brief overview of this, when we talk about the early Ionians, we refer to Thales and Anaximander and Anaximenes, the first I will sort in actually calls them the first physiologists or student of nature, the reason will be explain later. At the problem of the origin and laws of the physical universe, this was the major concerned of this early Ionians. The origin and laws of the physical universe, the fundamentals substance we explain it slightly later.

The world has originated from a primitive substance that is the primary assumption there is the substance, out of which everything this universe the diversity, the divers objects, everything in universe as come out of, that is the primary assumptions of this early Ionian philosophy. And when we come to the later period, later Ionians are again very profound thinkers like Heraclitus Empedocles, and Anaxagoras and like. And the problem of the origin and the nature of the universe still passed even for them that are very important; though they have advanced the thinking, the line of thinking, and the approaches of the early Ionian further into different domains still the problem of the fundamental substance processed in that philosophy as well.

Distinguished the primitive world forming force from the primitive matter of which the world was made. That is another advance method in that thought. Force is distinct from matter, there is distinction then make the between force and matter, which is very important from the scientific prospective as well as a philosophical prospective.

(Refer Slide Time: 19:46)



We will see the other Ionians now. So, we have the most prominent of thinker here is Pythagoras, 560 to 480 B.C, who are studied under the Thales before traveling to Egypt and Mesopotamia, ultimately establishing his own school of philosophy in Croton in southern Italy. One of the very important thinkers in human intellectual history Pythagoras and every school children, every student, every fifth standard student would be able to tell us who Pythagoras the famous Pythagoras theorem. But of course, Pythagoras was not just a mathematician, he was the philosopher and also have developed, is developed unique region I am not going to the details of that here.

The Eleatic school again of Xenophanes, and Parmenides and Zeno; we will be discussing paramagnets little bit in details here in this lecture. Again the atomists like Leucippus and Democritus, this are the other Ionians.

(Refer Slide Time: 20:59)

IONIANS:
GENERAL CHARACTERISTIC FEATURES

The Milesian school is important, not for what it achieved, but for what it attempted. *Russell*

- Pre-Socratic philosophy arose from the inclination of natural science to enquire about the essence of the natural phenomena [Zeller]
- A philosophy of nature
- Locate the essence of all things in a corporate substratum
- Everything in the **Universe** was made from a material substance.

NPTEL

Now before we examine some of the important thinkers as I mention earlier, I will focusing on the contributions of some of this people not every one of them, but before that we will have a very brief general characteristic features, and understanding of the general characteristic features of this Ionian philosophers. This is by Bertrand Russell, the Milesian school is important, not for what it achieved, but for what it attempted; not for what it achieved, but for what it attempted. So, this is the Bertrand Russell's comment about this people, these original thinkers.

And the let see what Zeller has to say about it Pre-Socratic philosophy arose from the inclination of natural science to enquire about the essence and of the natural phenomena. This is one of the fundamental features of philosophical enquire. One branch of philosopher at least traditional essential philosophy they were always interested concept of essence. Look out for the essence because the world which we leave is chaotic, the world which we leave as tremendous diversity different objects, lot of different qualities different objects, but underlines all this differences, underlines all this diversity, there is something which is essential.

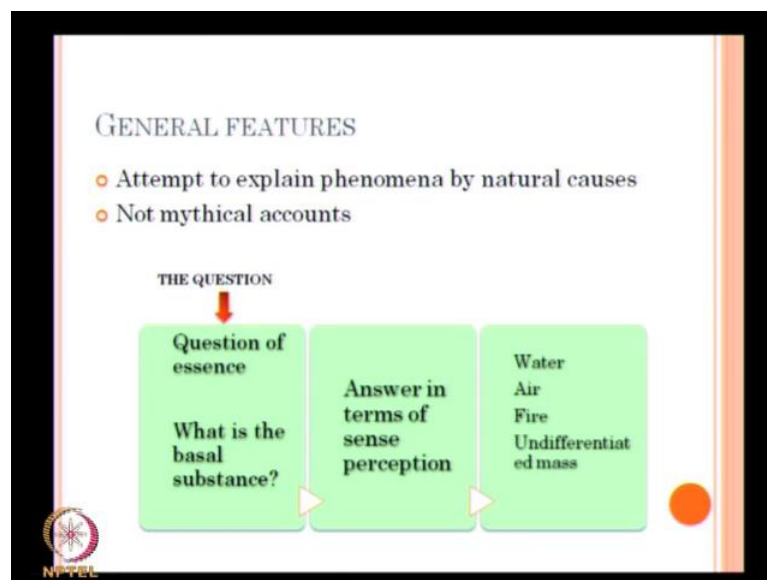
So, there is the search for the essence, which is one of the features of philosophical enquire even in 20th philosophy we can find it, people like Hussar, Hussars philosophical project itself atmen result the great mathematician, logician phenomenologist, whose philosophical project itself is to arrive it something called pre

supposition less philosophy. Phenomenology itself is kind of attempt to see essences the thinks in themselves.

So, we can see that you know this is one of the most important philosophy excises attempts by thinkers. To see the essence of natural phenomena here and we can characterized as a philosophy of nature. So, that is another way to see this, the important contribution of this early Greek philosopher, as a philosophy of nature. Locate the essence of all things in a corporate substratum, that is another attempt because see one thing which differentiate this thinkers from people like as a already mention Hussar or any other contemporary or 20th century philosopher is that, though all of them are interested to locate essences, these Pre-Socratic thinkers or this Ionians, they were not just in interested essences, but they were also under the impression that this essence itself would be something material in nature.

So, in one sense they have materialistic, they were scientific, they were reductionist all this are contributes that can be given to this original early thinkers. Again everything in the universe was made from a material substance. So, that is the condition.

(Refer Slide Time: 24:30)

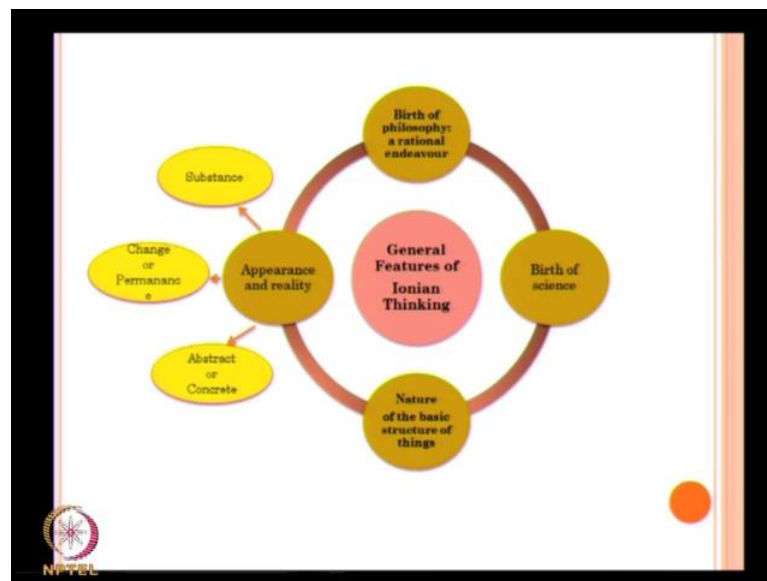


So, that is something very important because there is an attempt to explain everything, all phenomena by natural causes which is the scientific approach to thinks, which is not mythological, which is not religions, which is not theological, which is not based on faith, but based on reason, this is something which the birth of rationale Endeavour's

begin. Here as a mention is not mythical accounts, the question here is the question of essence and the question of the basal substance, what is the basal substance out of which everything is come out and here normally for such questions, that could be religious explanation theological explanation, but here there is an attempt to answer in terms of sense perception, whatever experience sense experience tells us.

So, that is why it is scientific, and this philosopher have deference substances, their identified different philosopher are identified different substance, different material substance as a primary object, the primary essential substance, fundamental substance out of which everything is come out, for one philosopher Thales it is water, another it is air, another one it is fire, another one is differentiated mask. Whatever it is instead of all such difference, they all focus on something which is material; it is a cause the material cause of everything. So the notions of cause affect relationship, which is so central to scientific intervals.

(Refer Slide Time: 26:10)



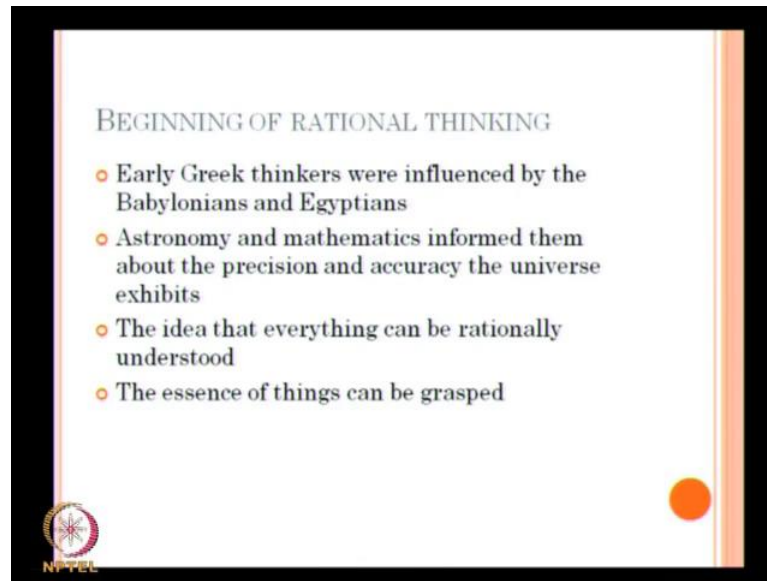
And here will see the general features of Ionian thinking, first of all here there is something called the birth of philosophy as a rational Endeavour. As a mentioned we can see the birth of philosophy as a rational Endeavour at this point, because as already mentioned there is a look out for reasons, rational explanation for everything. Again is the birth of science as well, because identifying the cause the material cause of something, which is scientific approach.

The nature of the basic structure of things, that is the again another very important aspect. Then again the question philosophical question as being introduced, one of the most important philosophy discuss in the history of philosophy, the question of appearance in reality. The philosopher had assistant to believe what is directly given to session organs? What appears is not real, that is a basic skepticism about what appears? What is directly given to us? And there is look out for something which is not given to us, something which is underline the given, something which is responsible for the appearance that is real; Appearance reality which is the central problem in philosophy, almost in every civilization.

So, you can see that here there is the question of substance. What is that substance? What is immediately given to us or what we experiences the world of diversity? But the there should be an underline substance. So, appearance and reality, when it comes to another one change or permanent, everything in object seems to be changing; everything in this world every objectives motion, the entire universe under motion, but whether motion itself is real or not. So, that is the question some philosopher as due that motion is real, or motion Ionians real, change Ionian real. According to some it is Parmenides.

Again, abstract or concrete the world as we experience is very concrete worth, but is there anything which is underline that something which abstract, something which cannot be seen that is the question. So, all such philosophical question was introduced by the early Greek thinkers themselves.

(Refer Slide Time: 28:36)



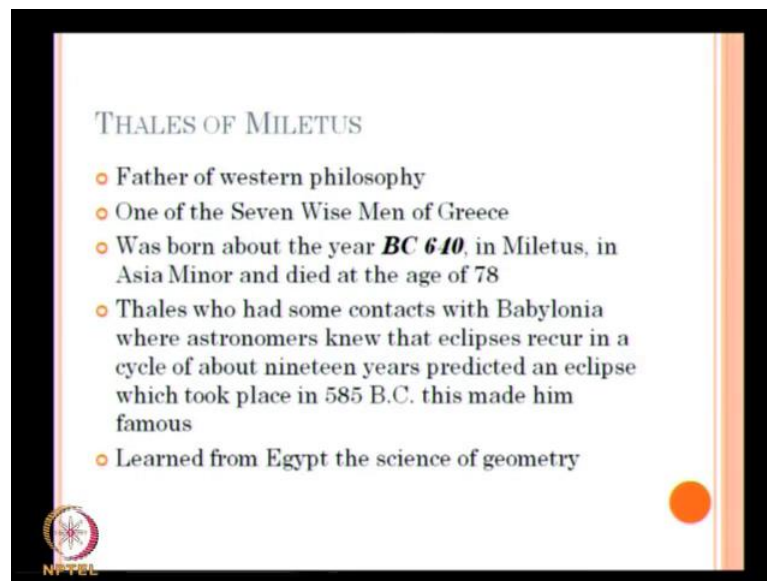
When you talk about the being of rational thinking, early Greek thinkers were influenced by as already mentioned Babylonians and Egyptians, Astronomy and mathematics informed them about the precision and accuracy the universe exhibit is. See it is let us except that the world around us is in the motion, there is flux; there is change, but whether is changes are bitterly? Whether this changes is blind or does it exhibit? Does it follow some sort of law, some sort of a principle?

So, this is the search for such principle is scientific search, we have we can see this classical example of the discovery of gravitation principle by Isaac Newton, The principle of gravity is allow which every object in the universe follows. So, that take place this universe is not arbitrary free, is not by is not chance to happened, but there are certain those there are certain principle.

So, identifying those principles and locating those principles, or finding a kind of resemblance those principles, and the principle that enables man to identifying them, that is reason, rationality there is some sort of connection between this two, this was makes science in philosophy unique rational enterprise. So, all this thinks we can see in the contributions of these early thinkers, the idea that everything can be rationally understood. So, there are thinks which we can defiantly approach any phenomena in this world from the theological prospector. Why certain thinks happened? Because God, God as decided it happened.

So, there is no found further questioning of the issue then, we say that everything is decided by God, but rationally approach cannot be satisfied with such a reference to faith. So, you need a causal explanation model, which is so central to scientific intervals later. The essence of things can be grasped, something which human being capable of understanding with the help of certain faculties in our mind that is the rational ability.

(Refer Slide Time: 31:08)

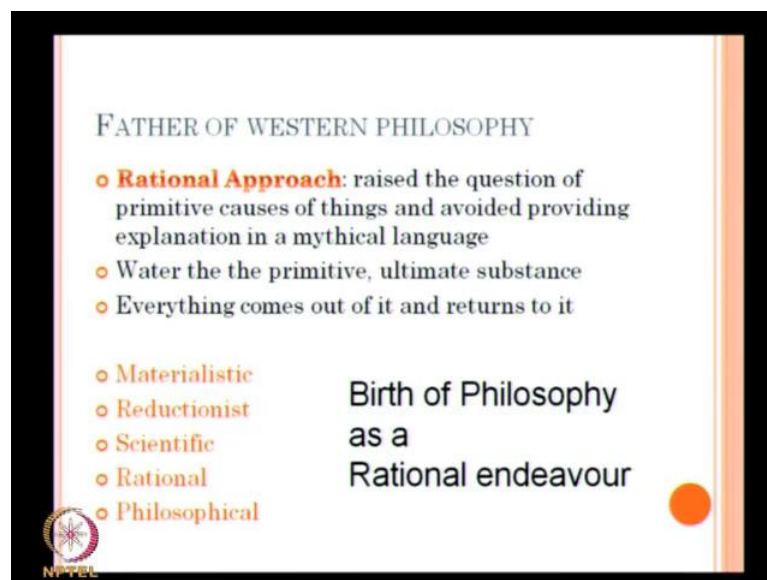


Now, already given a very brief outlook, a kind of feel about what are some of the important characteristic features of Pre-Socratic thinking. Now let us see some of the very important thinkers. As mentioned here, this is not an attempt elaborately discuss the individual contribution of each and every philosopher in Pre-Socratic age. See one thing we have to keep in mind is that there is no direct accounts of this Pre-Socratic thinkers, they have not written anything, till Socratic no one has written anything, we have information about their philosophy by second recourses, primarily by several other writers, one important information, we receive from Aristotle himself who refers to many of this contribution many of this thinkers in his writers. So, there is certain limitation then when we approach their philosophical contribution, but at same time historians' philosophy have arrived at reasonable good accounts of these thinking the philosophical contribution of these early thinkers.

So, let us start with Thales of Miletus, and he held's as the celebrated father of western philosophy Thales. And he was one of the seven wise men of Greece, he was born about

the year B.C 640, in Miletus, in Asia minor and died at the age of 78 these are some of the sensitive information about it is life which we have, there is no unanimity about the this views, but raffle this are the thinks which we understand about him. Thales who had some contacts with Babylonia, where astronomers knew that is eclipses recur in cycle about 19 years predicted an eclipse, which took place in 585 B.C, this made him famous. So, he was primarily known as recognized as an astronomer, then later on this philosophical thinking also developed. He was as a mentioned earlier he was held as one of the 7 wise men of Asian Greece and the learned from Egypt the science of geometry as well.

(Refer Slide Time: 33:39)



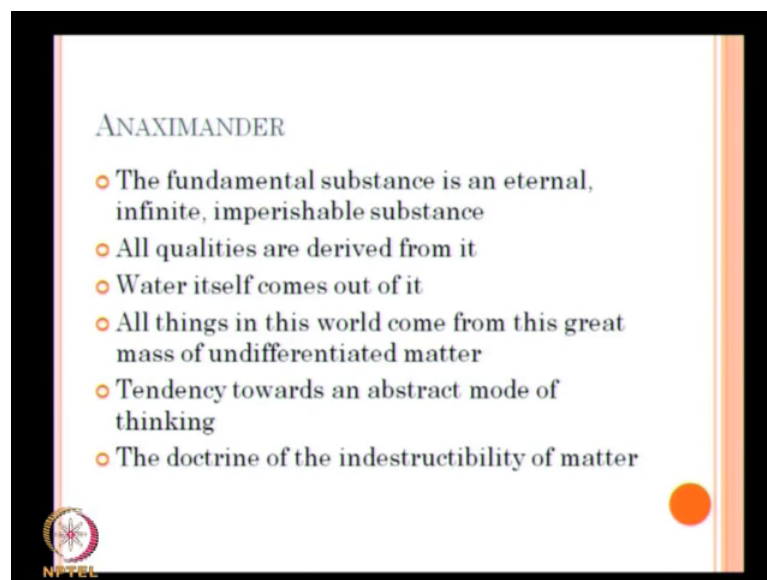
He there are lot of issues when we call Thales as the father of western philosophy, but of course, it is reasonable because the whole rational approach to problems, begin with Thales we can assuming that though there could be have been other thinkers before Thales, at least Thales is the first major name that occurs referred by many later philosopher including Aristotle. So, rational approach raised the question of primitive causes of things and avoided providing explanation in a mythical language.

So, this is the most important contribution of Thales; primitive causes of thinks and explanation not mythical language, but in the rational manner. So, when the question is about the fundamental substance, Thales answer is interesting he says that water is the most primitive ultimate substance that is the fundamental substance. Everything comes

out of water and returns to water, this is the theorem. And there are interesting details about it, but one of the important aspects to be noted here are number one it is the materialistic approach.

So, in that way is very important, whether it is water or air whatever it has it is the materialistic approach it is reductionist, reductionist in the sense is reducing everything to one single principle, it is scientific because it is look for causes fundamental causes, then it is rational it does not depend on mythological or theological explanation and after on it is philosophical. So, these are some of the very important features to be noted then we tried to understand Thales contribution. So, in this sense we say that the Birth of Philosophy as a Rational Endeavour took place with Thales.

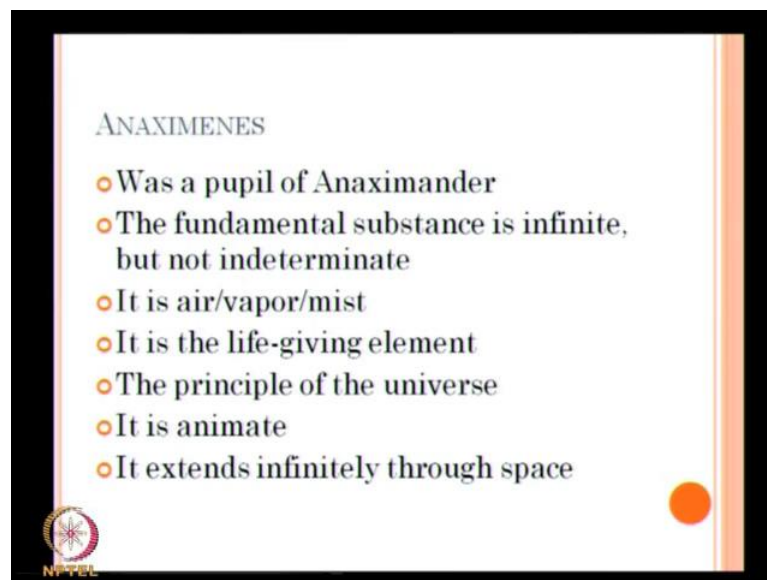
(Refer Slide Time: 35:48)



Now, the next important philosopher who we are going to discuss is Anaximander, who again agreed a lot with his predecessor Thales, but the fundamental substance for him is not one of the material substances like water, but it must be an eternal infinite imperishable substance. It need not be any particular substance, but it should be an eternal infinite imperishable substance, all qualities are derived from this substance for him, and again water itself as a material substance which we can observe comes out of such a primary substance according to an Anaximander. And he says all things in this world come from this great mass of undifferentiated matter.

So, what is the substance for him? It is a great mass of undifferentiated matter, we cannot be differentiated, we cannot determine what it is, it is determined, it is imperishable, it is infinite and it is internal. Tendency towards an abstract mode of thought, this is something which is so striking about an Anaximander. Thales was referring to substance which is material, which is concrete. But here we can see there is a tendency towards a more abstract mode of thinking, which is very important for philosophical conversation because philosophy in a very important sense deals with abstract entities. The doctrine of the indestructibility of matter is again content in an Anaximander view; matter is indestructible, which is the scientific principle which is also contained in Anaximander's view.

(Refer Slide Time: 37:30)





Now another philosopher who is the pupil of Anaximander is Anaximenes; here we can see how he goes back, the fundamental substance is infinite, but it is not indeterminate this is what Anaximenes. It is air or vapor or mist. It is air, for Anaximenes the fundamental substance is air because there is reason for that, because air is the life-giving element, both in organisms as well as in the universe, the principle of the universe, without air nothing happens in this universe.

So, he considered air as the most primitive substance and it is animate as well. It extends infinitely through space, something that extends infinitely in the infinite space is nothing but air, the air must be the fundamental substance.

(Refer Slide Time: 38:28)

PYTHAGORAS

- Focus on the abstract form and relations
- The measure, order, proportion and uniform recurrence can be expressed in numbers
- Numbers are the true realities
- Study of astronomy was promoted




And now we come to one of the most important and interesting thinkers of entire human history Pythagoras; I already give a very brief introduction about him, where the focus is on abstract form and relations. The (Refer Time: 38:47) entities like air or water cannot be the realities, but this entire universe which is perceived, which is sends through our sense organs cannot be ultimate reality, then what is it? Pythagoras founds that everything in this world can be explained it in terms of numbers, abstract numbers. Everything concrete in this world can be explained explicated and describe in terms of abstract numbers.


So, numbers are more fundamental and real than concrete objects and entities in this world. The measure, order, proportion and uniform recurrence in this world, in this universe can be expressed in numbers and numbers are the only true realities and this conception, this pre occupation numbers has ultimately furthered the study of astronomy and various other disciplines associated with that.

(Refer Slide Time: 39:52)

HERACLITUS



- Whether change or permanence is real?
- Change constitutes the very life of the universe
- Permanence is an illusion

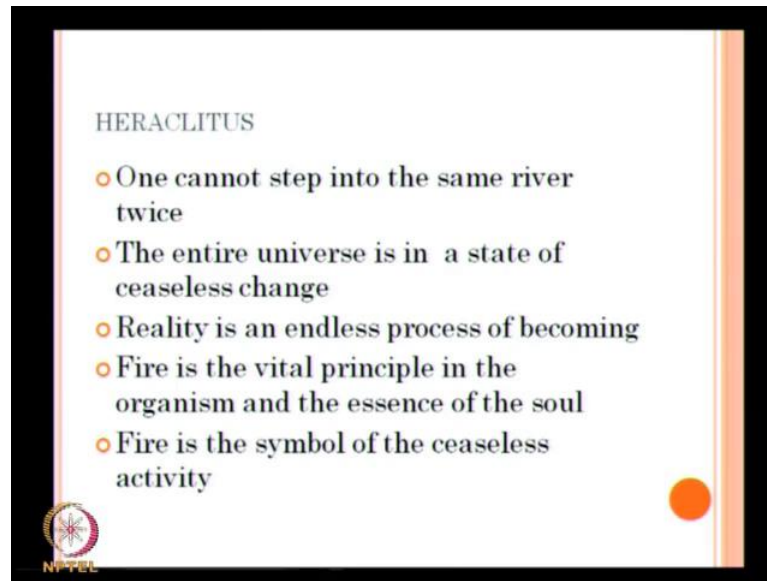


So, now you come to another important thinkers Heraclitus. So, this is one important think one interesting features about Greek philosophy. Every generation you will find innovative thinkers, and original thinker, who comes up with something very substantially different from predacious. So, this is something which we can understand as a tradition of critical discourse.

A traditional of critical discourse where there is continuity from Thales to and Anaximander, there is continuity but at the same time Anaximander does not repeat what Thales is said, it not just repeating what it is predecessor it is contributing substantial by critically evaluating the contribution of your predecessor. So, this is what later on people particularly call proper interestingly calls as the terms as the tradition of critical discourse, which existed in the west, each generation and new thinks.

So, Heraclitus another very important thinker will find a question at different question, though he written some of the important original issue he now raise to different question, whether change or permanence is real? Because we see thinks changing in this world, but whether change of permanence is real? Because you own the one hand there is the condition that everything comes out of a primary substance. So, everything in this world is nothing but transformation of this primary substance.

(Refer Slide Time: 41:47)

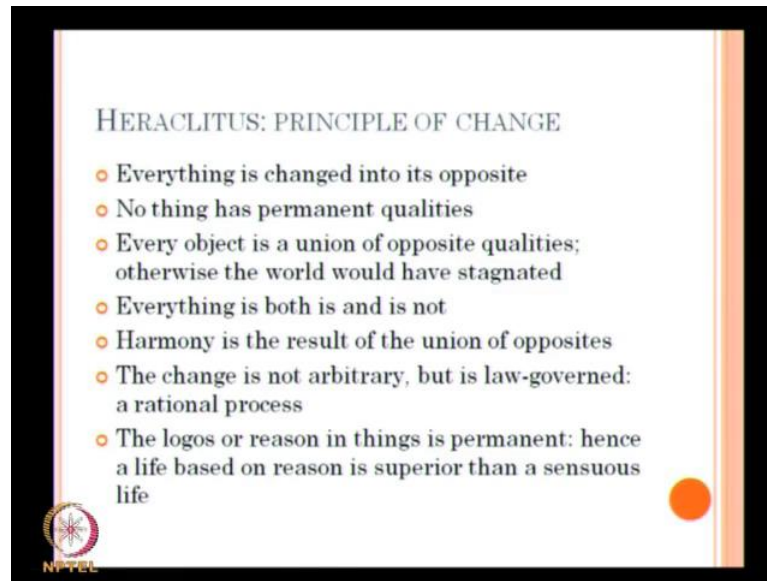


So, primary substance as such the (Refer Time: 41:30) then what about changes? So, this is the question and change constitutes the very life of the universe, this is contention. He says that it is change not permanence, whatever permanence we observed as illusion; it is change Ionian real permanence is an illusion.

And he says that one cannot step into the same river twice, the famous Heraclitus statement, which in India we could see the Buddha also have stated something where similar to this. One cannot step into the same river twice, because both oneself who try into step down into the river as well as the river will would have under gone change by the time because everything is movement. The entire universe is in state of ceaseless change, ceaseless flux, and reality is an endless process of becoming, there is no being as such which is ecstatic, which is instant, but everything is an endless process of becoming process change, fire is the vital principle in the organism and the essence of the soul.

Now, he comes back he written the question of the original substance which is predicts have raised and comes with an answer fire is most primary fundamental substance and it is the vital principle of the organism and also the universe. Fire is the symbol of the ceaseless activity for him.

(Refer Slide Time: 43:00)

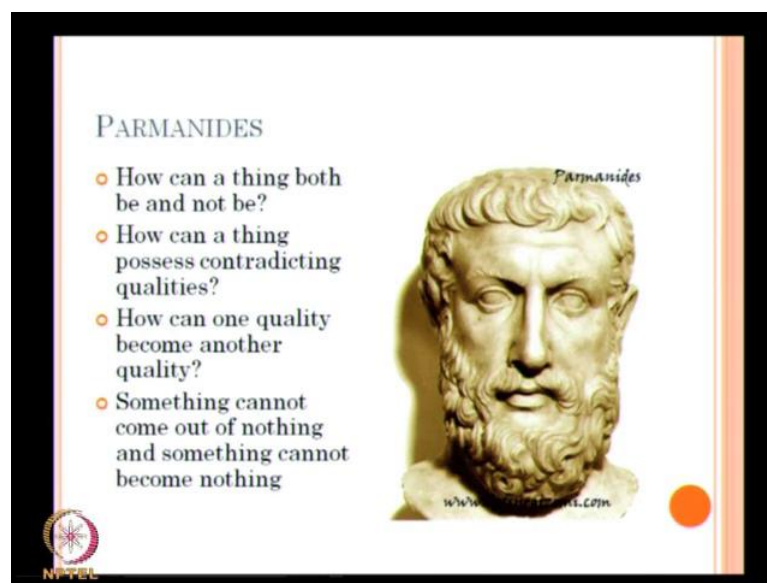


And one thing which is interesting about Heraclitus that has already mentioned here and substantially new thinks, new inventory ideas to his thoughts of a predacious. Everything is change into it is opposites. So, this is the dialectical aspects is introduced, everything changes to it is opposites, this something which will find in modern western philosophy as well. No thing has permanent qualities; every object is a union of opposite qualities otherwise the world would have stagnated; this is the very interesting very innovatory assumption that there is change in this universe, the changes possible because every object is a union of opposite conductor qualities, otherwise the world stagnated and died off, but the world is vibrant that is because there is every objective in this world is a union of opposite qualities.

Everything is both is and is not. harmony is the result of the union of opposites, he says that harmony whatever harmony is universe exhibits is nothing, but a result of union of opposites the change is not arbitrary, but is law governed it is a rational process, this is another very significant contribution by Heraclitus. The changes which we perceive which we expression is not a blind arbitrary change the universe is not rule by chance, but it is law governed. I already mentioned it earlier there is a consumption law governed activity and what is process it must be a law governed process it must be rational process human mind is capable of finding out the law reason enables as to do that.

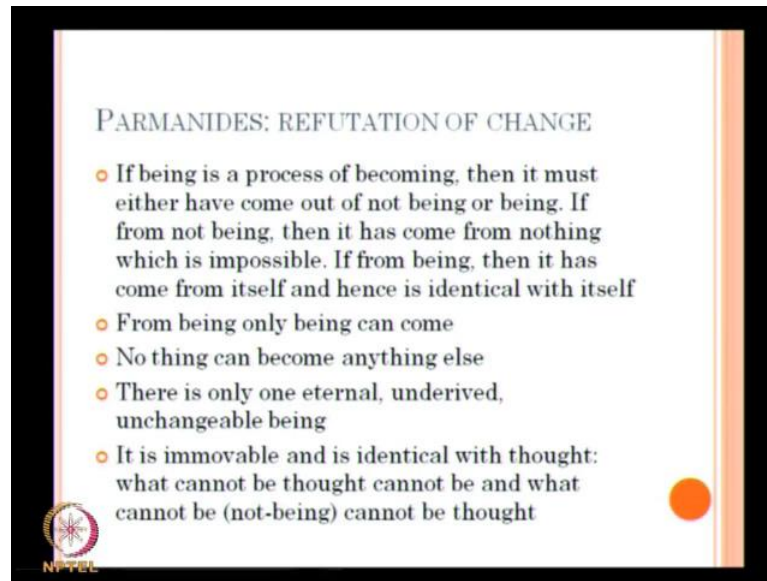
So, philosophy becomes much more matured in Heraclitus. The logos or reason in things is permanent, there is something is permanent what is it? The logos or reason in things hence a life based on reason is superior than a sensuous life. So, you can see the ethical view as well here how do you leave how should one leave in this world one should not base one life or emotion or sensual life it should be based on reason. Now another important thinker who comes with an entirely different prospective view is Parmenides, how can a thing both be and not be? This is a question to Heraclitus in one sense Heraclitus advocated change.

(Refer Slide Time: 45:34)



Here Parmenides raises some very significant objection to this Heraclitus conception. How can a thing both be not be? How can a thing possess contradicting qualities? How can one quality become another quality? Something cannot come out of nothing and something cannot become nothing. These are all contradiction Parmenides remises an object cannot possess contradictory qualities.

(Refer Slide Time: 46:26)



PARMANIDES: REFUTATION OF CHANGE

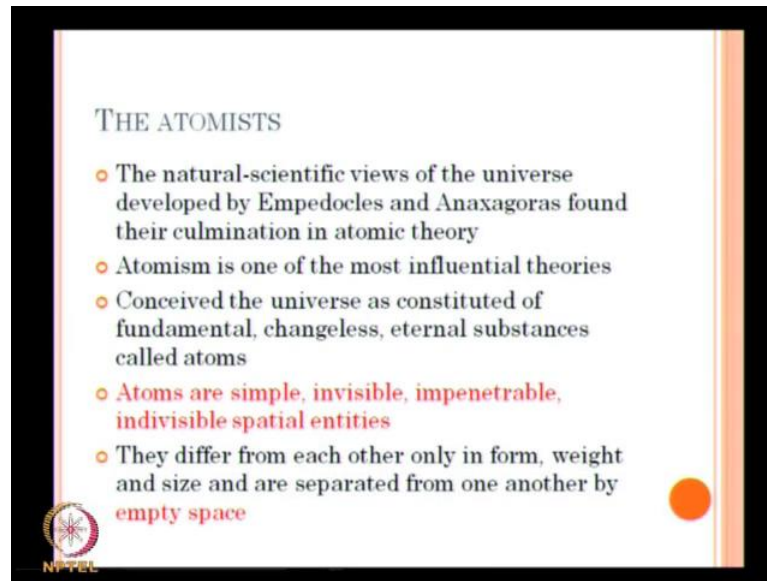
- If being is a process of becoming, then it must either have come out of not being or being. If from not being, then it has come from nothing which is impossible. If from being, then it has come from itself and hence is identical with itself
- From being only being can come
- No thing can become anything else
- There is only one eternal, underived, unchangeable being
- It is immovable and is identical with thought: what cannot be thought cannot be and what cannot be (not-being) cannot be thought

NPTEL

So, he refused change, the conception of the philosophy change advocated by Heraclitus and followers are vehemently oppose by Parmenides saying that, this the interesting argument, if being is a process of becoming this is what Heraclitus said, then it must either have come out of not being or being. If from not being, then it has come from nothing which is impossible. Something cannot come out of nothing that is the contradiction that is impossible.

Then it should come from something. If from being then it has comes from itself and hence is identical with itself, which means that there is no change. So, change is refuted philosophically and theoretically, from being only been can come out. No think or nothing can become anything else. There is only one eternal underived, unchangeable being. So, the concept of being which is become very important in later philosophy later western philosophy introduced by Parmenides here, is not find that in 20th century, many philosopher including some of the thinkers like Heidegger, Gadamer all this people were tremendously influence by Parmenides. Heidegger even has written a book, title Parmenides. Because is also preoccupied with the concept of being, the question being which is introduced by Parmenides. It is immovable and is identical with thought: what cannot be thought cannot be and what cannot be, not being cannot be thought this is the interesting statement by Parmenides.

(Refer Slide Time: 47:54)



THE ATOMISTS

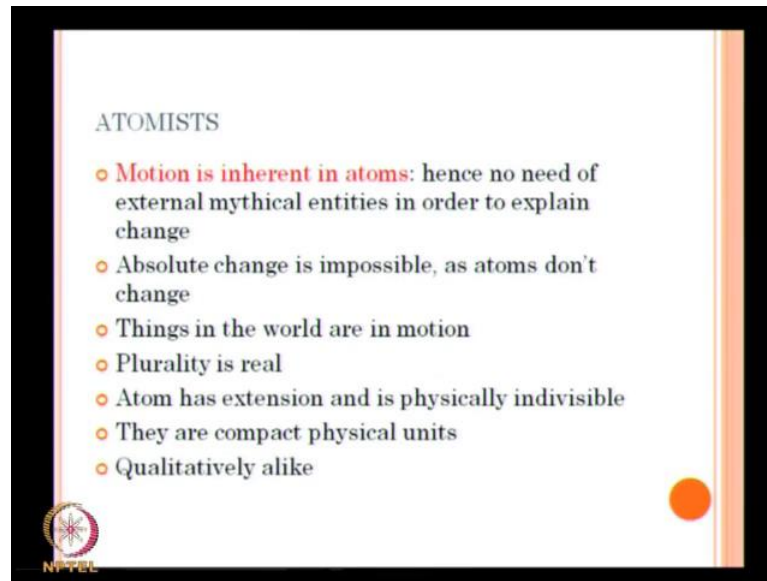
- The natural-scientific views of the universe developed by Empedocles and Anaxagoras found their culmination in atomic theory
- Atomism is one of the most influential theories
- Conceived the universe as constituted of fundamental, changeless, eternal substances called atoms
- Atoms are simple, invisible, impenetrable, indivisible spatial entities
- They differ from each other only in form, weight and size and are separated from one another by empty space

NPTEL

Now, we come to another important group of thinkers the atomists. The natural-scientific views of the universe developed by Empedocles and Anaxagoras found their culmination in atomic theory. I am not going into explain here because of positive of time, the contribution of thinkers like Empedocles and Anaxagoras, but in a since we can say that there thinking, there philosophical perspectives culminated in atomism, what is termed as atomism, atomic theory.

Atomism is one of the most influential theories in western intellectual history, even today very interestingly significant; conceived the universe as constituted of fundamental, changeless, eternal substances called atoms. Atoms are simple, indivisible, impenetrable, spatial entities. So, they are in that simple, they cannot be separated into two entities, they differ from each other only in form weight and size are and are separated from one another by empty space. In atomism also will find the materialistic reductionism of their predacious.

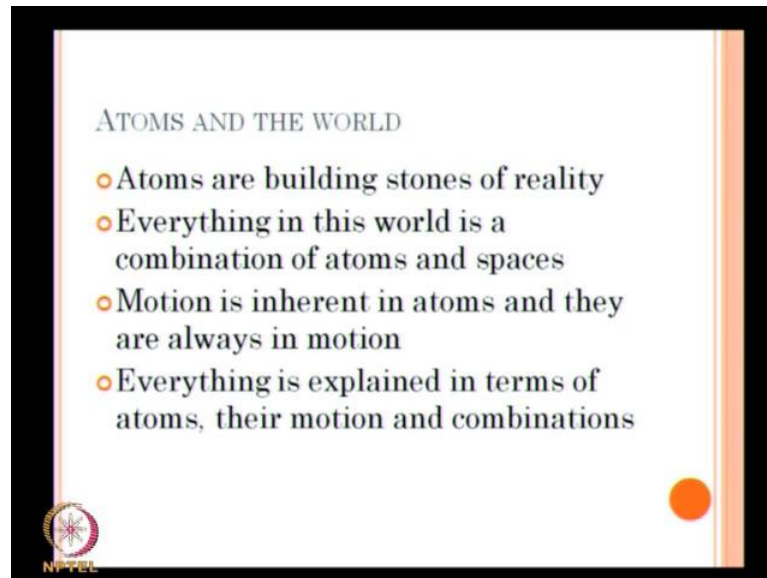
(Refer Slide Time: 49:10)



So, but question is how do a call for motion? Because we change, we find or we experience to change, we experience to motion. Here the atomists says that motion is inherited atoms, they do not comes from outside. So, there is no external agency require to for the atoms to move, that is inherent. Hence no need from external mythical entity in order to explain change and absolute change is impossible as atom do not changed. So, that is another thing, though the universe exhibit is motion, there is motion there is change in the universe, there is absolute change because atoms themselves, the primary constitute of universe would not change.

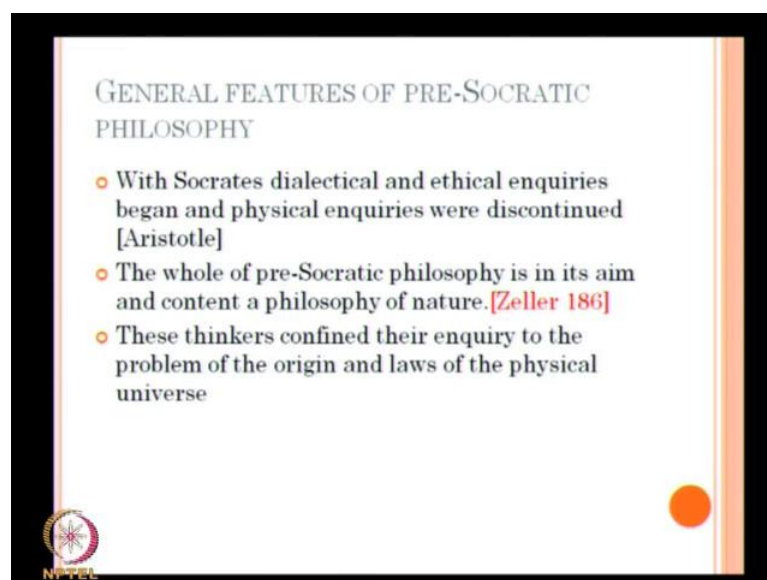
Things in the world are in motion, and plurality is real, these are some of the contention of atomist. Atom has extension and is physically indivisible. They are compact physical units, they are not mathematical entities, they are not metaphysical entities, they have physical units and there qualitatively alike, but has I mentioned earlier there deferred from each other in terms of size, weight and so on so that.

(Refer Slide Time: 50:24)



Atoms and the world they say that, they are building stones of reality. Everything in this world, every object in this world is made up of atoms; everything in this world is a combination of atoms and spaces. Motion is inherent as already mentioned in atoms and there always in motion, everything is explained in terms of atoms their motion and combinations.

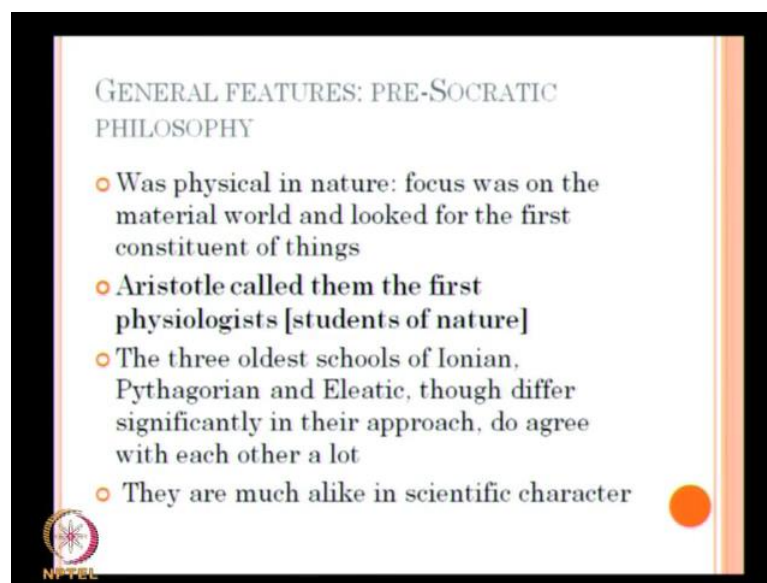
(Refer Slide Time: 50:58)



So, you can see that the scientific attempt to explain the world is substantial by the atomist with the theory of atomism, which is very interesting.

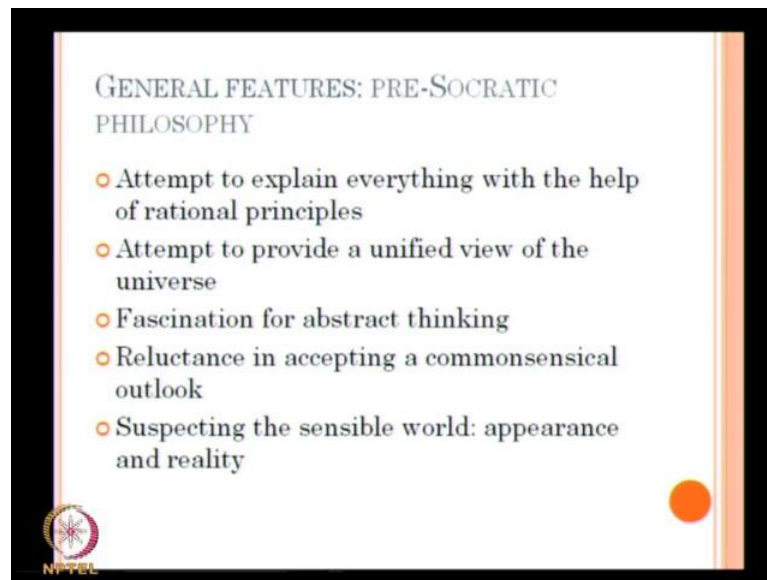
Now, we wind up this lecture on Pre-Socratic philosophy, very important face in the history of western philosophy with brief summary. The general features ones again Pre-Socratic philosophy with Socrates dialectical and ethical enquiries began, and physical enquires were discontinued, this is what Aristotle says. It is Socrates who as introduced in a new era in philosophy, the whole of Pre-Socratic philosophy according to Zeller is in it is aim and content a philosophy of nature. These thinkers, the Pre-Socratic thinkers who we have already examined, confined their enquiry to the problem of the origin and laws of the physical universe.

(Refer Slide Time: 51:49)



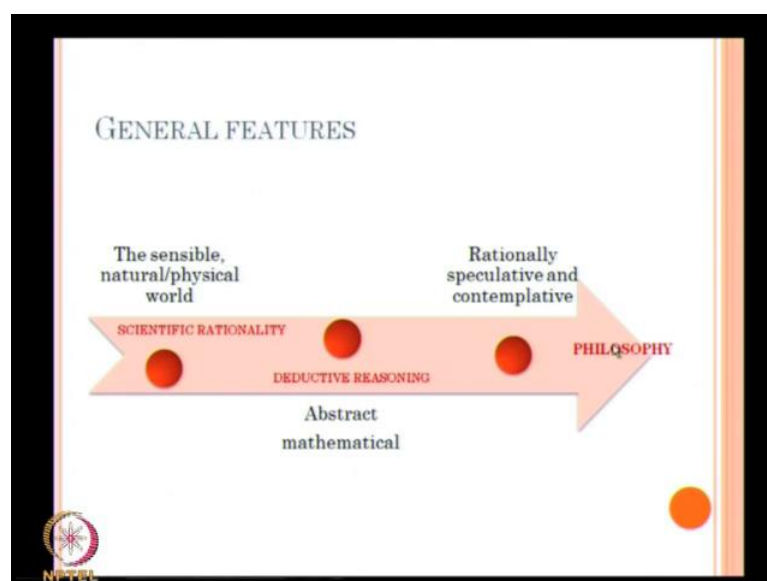
And they was physical in nature, focus was on the material world, and looked for the first constituent of things. These are the things which we have already examined and Aristotle I already mentioned earlier, called them the first physiologists or students of nature then. And now we have seen that there are older earlier Ionian and later Ionians. The three oldest schools of Ionian Pythagorean and Eleatic schools, though differs significantly in their approach, do agree with each other a lot. Because some of fundamental questions are the same though each generation add 2 dimension to the philosophical approach, they are much alike in scientific character approach they are much alike in scientific character.

(Refer Slide Time: 52:34)



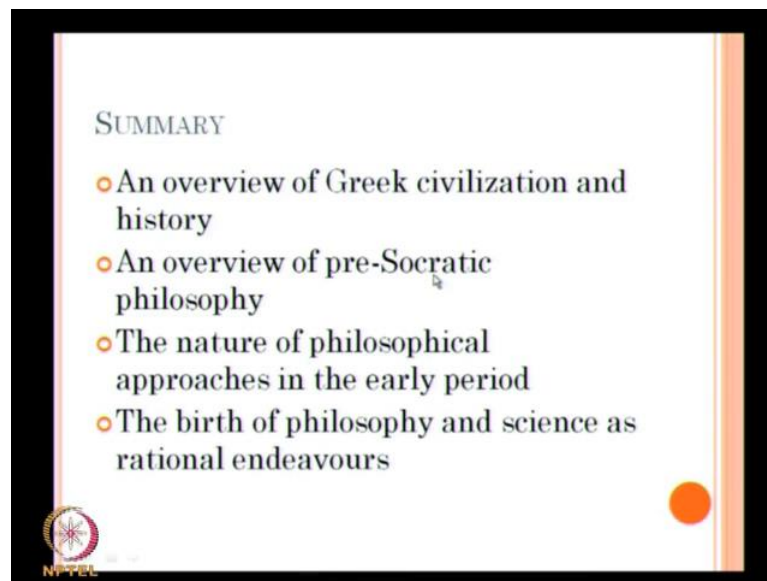
Again there is attempt to explain everything with the help of rational principles, I have already mentioned. Attempt to provide a unified view of the universe this again a scientific philosophical approach. Fascination for abstract thinking, we could see that from Anaximander law words it is beings, and then reluctance accepting a commonsensical outlook which is so characteristic of philosophical enquire. Philosophy one since is denial commonsense, in that sense we can see that the introduction approach in this early Greek period, suspecting the sensible world so that introducing the problem of appearance and reality which shows central philosophical enquiry.

(Refer Slide Time: 53:18)



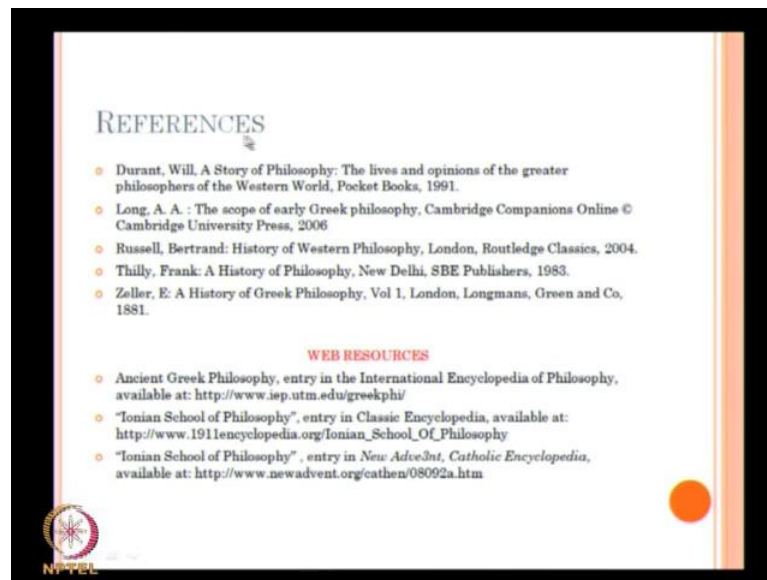
So, this are in nutshell this is what is happened. The sensible natural philosophical world is problematizes in the initial period here and when we come further, we can see the abstract mathematical issues becoming central like, people like Pythagoras where so seminal contribution here, and together this give birth to what we can call as a rationally speculative and contemplative world. So, this is scientific rationality, this is deductive reasoning. The initial period as contributed scientific rationality and later on deductive reasoning by mathematical abstraction which together let to the birth of philosophy.

(Refer Slide Time: 54:07)



Let us now wind up our discussion, and have a look at summary of topics which we discussed, we had an overview of Greek civilization and history an overview of Pre-Socratic philosophy, the nature of philosophical approach in the early period is examine, the birth of philosophy and science as rational endeavors is also examine in this lecture. In the following lectures will have a more interesting discussions about the initial philosophical issues discuss by early Greek thinkers, particularly Sophist, Socratics and other Greek philosopher.

(Refer Slide Time: 54:44)



So, this are the references used from preparing this lecture. We will wind up this lecture.

Thank you.