Introduction to logic

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Lecture - 4
Nature and Scope of Deductive and Inductive Arguments

In the last lecture, we saw distinction between deductive and inductive arguments. One of the fundamental most important distinction that we found easiest that in the case of deductive arguments; the conclusion necessarily follows from the premises and it is truth preserving. And there is no absolutely there is no new information in the conclusion which is not stated in the premises and nothing is that is not opening argument. On the other hand induction argument conclusion and whatever stated in the conclusion goes beyond what is taken in the premises. And then they are all open ended arguments.

So, now, the next question that arises is that where do we come across deductive, and inductive arguments in general before that you know whatever like to say easiest that these are the 2 types of argument that you come across in logic that is deductive. And inductive kind of arguments some of the next question that arises is where do we come across these deductive arguments. How do you identify that this particular arguments is a deductive arguments etcetera.

So, in this lecture what I will do is that now will talk about where do we come across this deductive arguments and inductive arguments its some examples, and then if have time when then will going to the details of validity of a deductive argument or invalidity of a deductive argument and then negates of inductive arguments we can only talk about the strength of the arguments. So, we can say that given inductive argument is a weak argument or a strong kind of argument the begin with will come to the deductive arguments which we usually come across these kinds of arguments in the field of mathematics.

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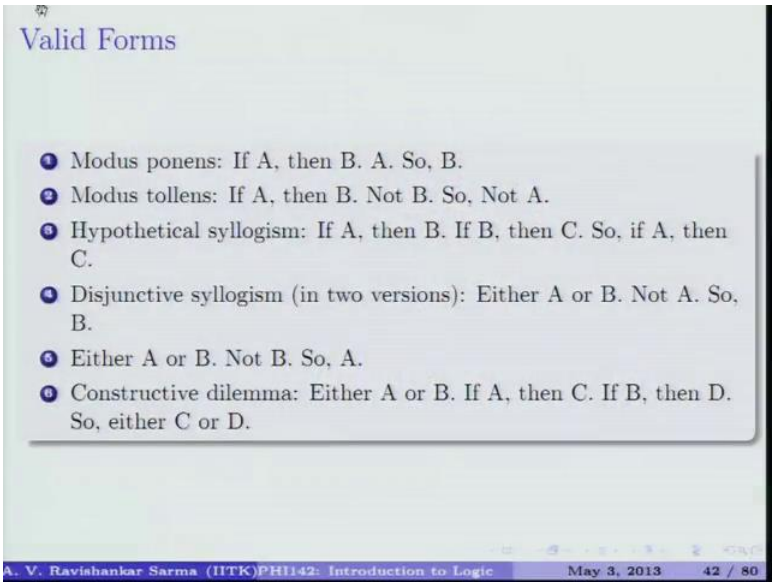

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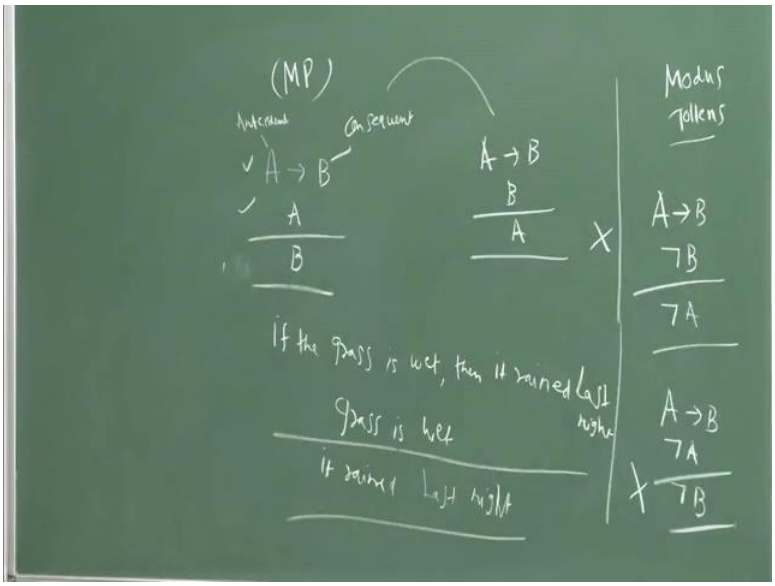

Because, mathematics seeks some kind of certainty, so especially when you to come across some kind of valid forms. So, what would mean by a valid forms. So, the 1st commonly found kind of valid form in the logic any logic courses these that is called as modus ponens. So, according to modus ponens it is like that this is if a implies b is case; that means, this is then antecedent this a condition of statement of the which a is consider to be in antecedent and b is called as consequent of suppose if a then b and then a is a case and b follows from these 2.

So, this is consider to be a valid form. So, how do you know that valid form and all it is a different question which will answer it little bit later. So, in logic there are some kinds of valid forms and all. So, this since it as exhibit some kind of pattern which is come under the category of valid forms and the argument is also corresponding arguments is also valid argument. So, if you say that it grass is wet then usually say that then it rained last night and grass is indeed wet then you say that it rained last it rained last night. So, the better way of putting this argument is that if you trains in the grass is wet.

Any train then the grass is wet and all unfortunately I have been at pit it in a reverse way why does not matter much and all, but this also purpose if the grass is weight then trained last night the grass is night. So, it rained last night it is in this form a implies b and then a then b. So, it is not used in kind of valid form then it will become like this a implies b and then b then suppose if you b for a this is an invalid kind of kind of argument because it has invalid form and all.

So, forget about am already talking about validity invalidity etcetera and all I did not talk much about what a mean by validity etcetera and all, but my intention is that where do you come across deducted arguments under this whenever you have valid forms and all and you say that it is a deductive kind of argument why it is a deductive argument.

If these premises are let us say this is premise 1 premise 2 and this is a conclusion if the premises are accepted to be true and the conclusion cannot be falls and all you cannot come of their single instance where we 2 or true and this is falls and all. So, this as to be ruled out and all you cannot cook up any counter example in which your premises are true and the conclusion is falls.

So, the conclusion follows necessarily from the premises that satisfy the case of deductive argument and then there is no new information in the conclusion. So, whatever stated in the premises is already in the conclusion that is a 2nd thing which serving or purpose of deductive arguments and the 3rd thing is these that it is not in open ended argument. So, is no new information in the conclusion which is not stated in the premises and then these 2 are absolutely true and then conclusion also.

As to be true and all by 2 things this will you will get it free of cost see have to subscribe this 1 also the conclusion also necessarily follows from the premises. So, usually when we come across commonly valid forms and all she come across in logic course all these

arguments are there come under the category of deductive argument and other commonly the another argument which is commonly come across in this is called as modus ponens and the argument which you will come across is modus pollens. So, this says that if a implies b is the case implies b in the case then you denied the consequent this is a antecedent and. So, this is a consequent and you denied the antecedent also.

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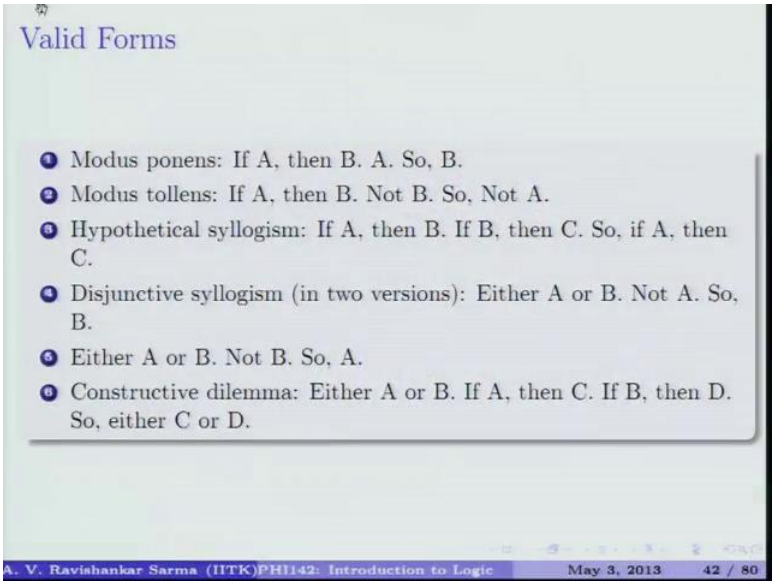

So, 1 mistakenly you can write this modus ponens in this suppose a implies b is the case and you denied the anticipant and you denied the consequent this is an invalid kind of argument when a talk about validity or invalidity of deductive argument is I will come back to this particular kind of example. So, what I am trying to say this is moment is that when ever across some kind of valid forms etcetera like this then we can say that some kind of deductive argument present in that particular kind of argument. So, the 1st one, if modus ponens which I expended there and the second one is modus ponens is are all deductive arguments why these are deducting arguments this serves are ah 4 criteria that which have discussed area are you can ask 4 questions and based or answer you can judge whether they are deductive.

And inductive kind of arguments in the last lecture I spoke about these 4 questions. So, whenever you come across hypothetical syllogism like if a then b if b than c than if a than c it also comes under. So, valid form and all obviously, it also under the category deductive arguments these then to syllogism a or b and then not a and obviously, it has to

be b 1 excludes another 1 and a is not the case; obviously, what is left out is beyond that is what is disjunctive syllogism is clearly a deductive argument is the premises are true to the conclusion cannot be falls you cannot come off with a single counter example in which a or b id true not a true, but yet b is falls. So, it is in that sense the conclusion is necessarily follows from the premises.

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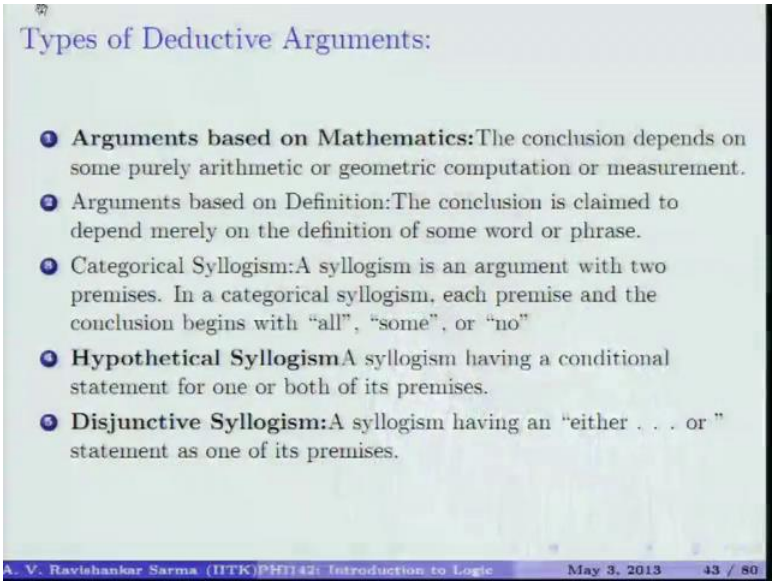

So, this argument is also a deductive kind of argument in the same way valid forms that you come across like a or b and not b. So, a and all these another instant of disjunctive syllogism and there are some other complex kinds of argument which exhibits some specific valid forms and all. So, they come under the category of ah constructive dilemma it is like this that if either a or b if a then c b then d then so either c or d. So, this all the valid form with under the category deductive kind of arguments and all because the conclusion necessarily follows from the premises and all. So, they are absolutely true if the premises are true and the conclusion is also necessarily true and all. So, then these are the different types of deductive arguments which you come across ah in literately course are leading by mathematics test are may be reading some other some books and all. So, basically arguments based on mathematics because in a mathematical.

Ah facts are certain and all repressing and all in mathematics it is not say that 2 plus 2 is equal to 4 is true with some 90 percent true extra and all this is no degree of truth involved in these type of prepositions and all. So, arguments based on mathematics the

conclusion depends upon some purely arithmetic and geometric computation or measurement these kinds of thing come under the category of deductive arguments arguments based on definition that is a conclusion claimed to depend merely on some definition are some word and phrase and all for example, if you say ram is bachelor that implies that ram is unmarried and all. So, un variedness is already there in the world bachelor now there nothing no new information that you are stating in the conclusion, but you might ask what is. So, great about this deductive argument is already no new information their not opened arguments here not able to strength and weak and the argument are once you accept the conclusion are to be true.

It has to be true forever in the despite that case that you and all the new premises etcetera and all what. So, great about this deductive arguments and all and a task, but the some of the important features of characteristics of deductive arguments which as his own advantages they need comes to mathematical reasonable, we already spoke about disjunctive syllogism when a talk about Aristotle logic, we going about the details of what you mean by syllogism what you mean by categorical syllogism what are the rules for know in the validity of syllogism etcetera will talk about when we especially discussed about Aristotle theory of syllogism.

So, but a this moment when you come across categorical syllogisms like in a syllogism arguments in a to a premises with specially form in such a way that all the prepositions in the premises beginning with all some or know etcetera is the phrases with which all the prepositions begin an. So, you begin with 2 such kind of preposition and then the conclusion is going to be another kind of categorical preposition and all if it is. So, form then it is called as a categorical syllogism and all categorical syllogism is a some kind of argument in which involves categorical p\repositions. So, these are also some of the arguments which come under the category of deductive arguments again and this criteria same and all conclusion necessarily follows from the premises truth preserving.

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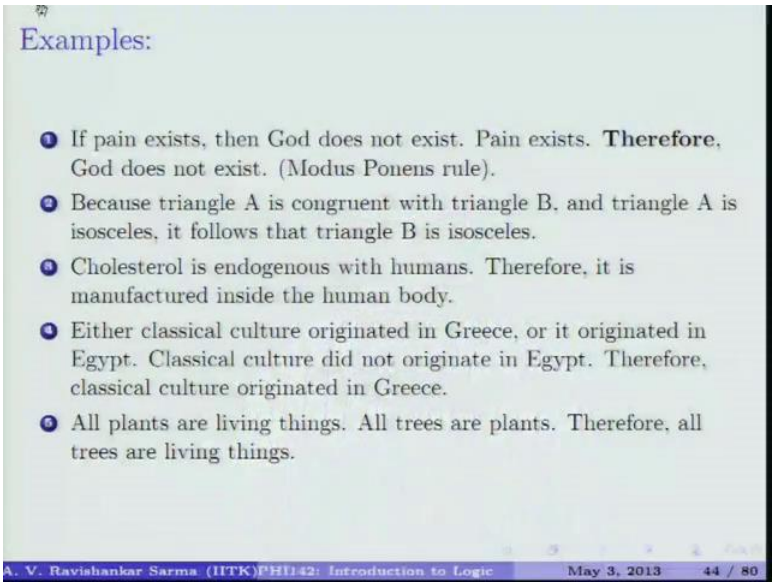

Absolutely conclusion necessarily follows from the premises and not open ended arguments etcetera and all. So, when it is come to hypothetical syllogism which we talk about earlier disjunctive syllogism all these things come under the category of deductive arguments here some of the examples example if you pain pain exists god doesnot exists pain exists. So, therefore, god does not exists and all it is like modus ponens rule firstone is interpreted as a implies not b actually does not exists not b god exists means b god does not exists not b and all a implies not b and next 1 is a. So, that is why it as to be not b and all.

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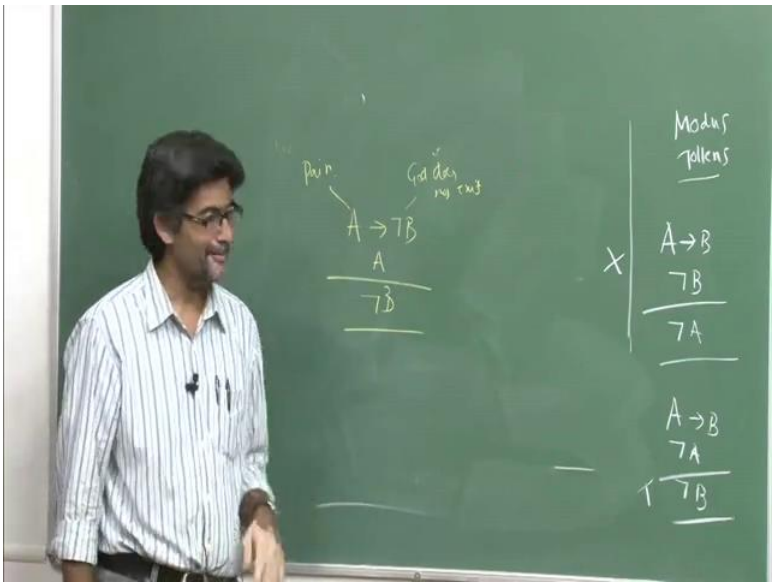

So, the 1st example is like this first one is interpretate as a implies not b and then if the case and then not B in the case. So, b stands for god does not exists does not exists and a stands for pain etcetera a pain is there after all then suppose if you say that god does not existence a pain is; obviously, there suffering is thing which remains with use. So, the obviously; that means, god does not existence. So, this is valid kind of argument.

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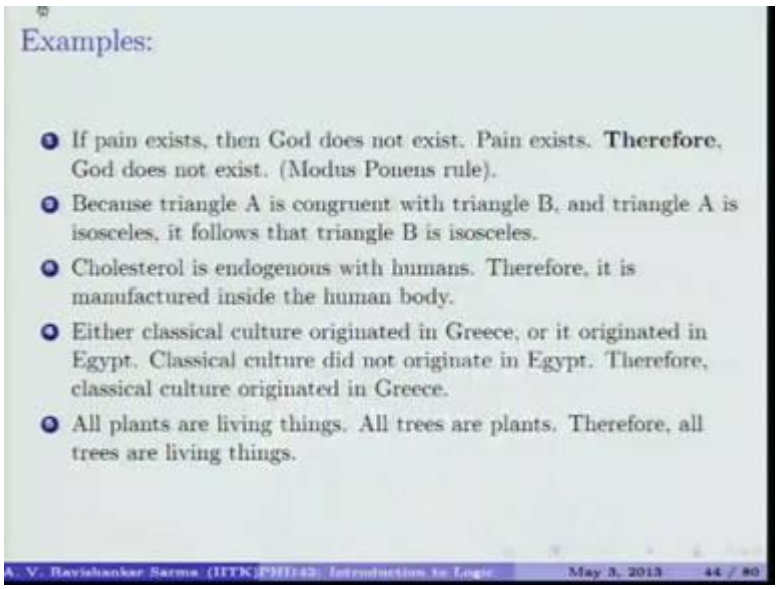

Invite argue that it is not a sound argument in a sense that one of the stabiles a implies not b or a one of these things we will falls in that sense we can show that it is a unsound

argument which will talk about little bit later the 2nd example which come under the category of directive arguments is this because that triangle a co gradient with that triangle b and that triangle a is isosceles it follows that triangle b is also isosceles. So, its based on the definition are it is (( )) as the inference follows the based on definition and all arguments based on definition etcetera the 1 which an already spoke about jan is a bachelor implies that jan is unmarried person. So, there is nothing no no information present in the conclusion which is not stated into the premises and all bachelor is made express it ah whatever is impress in the premises is made.

Express it in the conclusion the same way to same the cholesterol is endogenous with humans therefore, it is manufactured inside the human body its as saying anything new accept that is whatever is impressed in the premises explicit and all in the case of 4th example say either the classical culture originated in greece or it is originated in egypt the 2 possibilities that we have a or b and say that classical culture did not originated in egypt it also accepted to be suppose if you are assume to be 100 percent true then the know way is which you can avoid these conclusion that the classical culture is originated in Greece and all it has to be 100 percent true based on the premises are again 100 percent true and all if you say that all plants are living things is this an example of syllogism because the statements are beginning with categorical prepositions or categorical syllogisms all plants are living things all trees are plants.

Therefore all trees are living things and all see we have to note that we all command the category of derivative arguments all deductive arguments are not valid may be invalid alsoare valid arguments are be unsound also. So, will talk about those examples little bit later. So, now, coming back to inductive reasoning. So, come across inductive reasoning here basically in science we do come across inductive reasoning when the scientist when to formulate some kind of last statement what he does is (( )) observed all the things like let us say metal 1 is upon 18 metal 2 is upon 18 and after doing observation and all with various metals and the various circumstances and the various situation etcetera and all then will come up with generalization which we cause it has inductive generalization which serves as which is eliminated to the status of allow.

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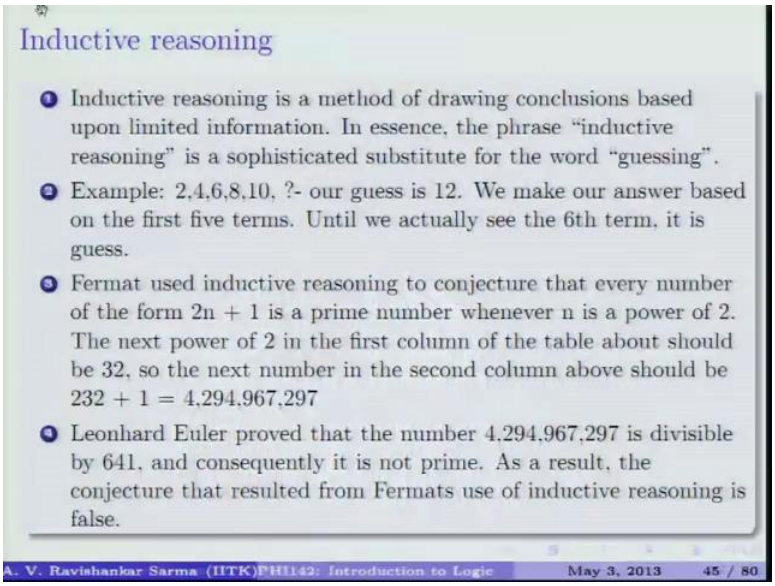

That is moving from particular tools general and all in a in a certain sense. So, he repeated observed as thousands of exploits etcetera and all and he formulated its last statement that all metals expands upon heating because of free electrons etcetera and all. So, inductive reasoning is a. So, in which is find it in natural sciences especially when the scientist is trying to draw some kind of inferences is based on some kind of reappeared observations usually we requires we scientist requires in that 2 reasoning for a formality last statements and all we need last statement because in there are several we need required last statements gradually there eliminated to some kind of formal kind of theory and all inductive method is a method of drawing conclusion based upon limited information we not have to have complete information and all, but it you can ah draw some kind of inference and all.

Specially essence the phrase inductive reasoning is sophisticated substitute for a words guessing and all guessing predicting etcetera they all come under the category of inductive kind of reasoning and all. So, usually in completive example in come across this particular kind of thing 2 4 6 8 10 and guess what is what comes next and all and we ask this particular kind of question then we automatically know that some kind of pattern which is the sequence is following an immediately we will predict that next number that will going to the following sequence is 12 length. So, mean that you know 12 is going to the next penal metal used in a different sense and all for me know it might the 14 also, but usually know common sensically you can say that if you given 2 4 6 8 10 and all the

followed certain sequence an all based on that information.

You can say that 12 is going to the next number is follows, but it might be the case that it may be 14 it may be 17 metal some other thing in my mind which I want to replace it all with 12 are we can write 6 plus 6 something like that to make our answer based on the 1st 5 terms and all repeated observation until we actually see the 6 terms it is kind of guess. So, this kind of conjuction reputation etcetera there all is already used by format the greater mathematician he use inductive reasoning especially in formulating some king of conjunction and all mathematical conjunction is a 1 case not yet proved kind of theorem and all. So, there are many conjunction which will find ah mathematics gold box conjunction is 1 kind of conjunction even till to date not it reserves deserves it proved something is proved every theorem has to be proved to be true and also this not be any theorem which not proved not proved extra and all theorem has to be proved and all it as to be true 1st it has to be proved also. So, format used inductive reasoning is especially to conjunction that every prime number every number of the form to the power of n plus 1 ia prime number whenever any power of 2.

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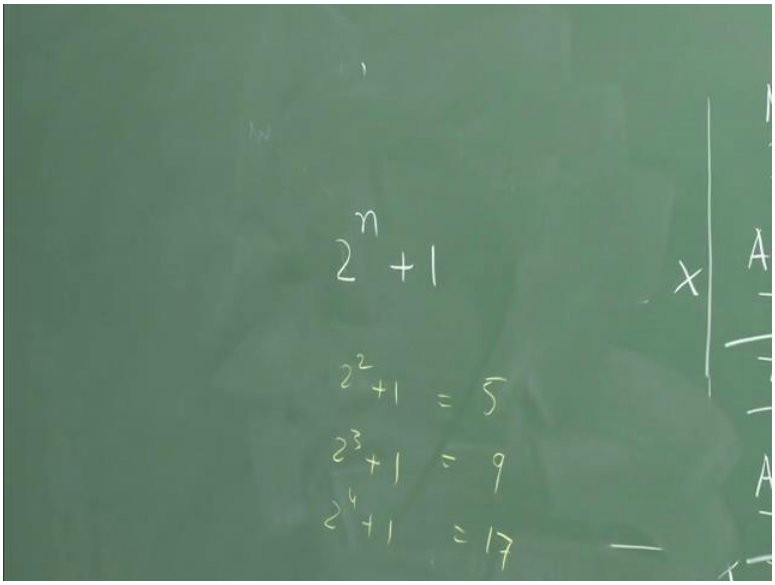

He says that conjunction that. So, why talking about this particular kind of thing easiest that argument based on prediction guesses conjunctions etcetera and their all come under the category of ah inductive kind of arguments and all formats has used this kind of inductive reasoning in mathematically different way now suppose if you say that 2 the

power of n plus 1 for example.

If you have 2 square plus 1 then that is going to 5 is a prime number 2 to the power of 3 plus 1 this is 9 and 2 to the power of 4 plus 1 etcetera is a 16 plus 1 17 etcetera and all. So, we formulated the conjunction that every number of form 2 to the power of n plus 1 is a prime number whenever n is a power of 2 1 the next power of 2 in the 1st column of table is not there here should be 30 5 and all 30 2 that is a 2 tau the power of 5 2 to power of 5 is 30 2 plus 1 is 30 3 and all. So, like that you go and all and all etcetera and then suppose if you say 2 to the power of 30 2 plus 1 and all that happens to a big number 4 2 9 4 9 6 7 2 9 7 it is there in the slide.

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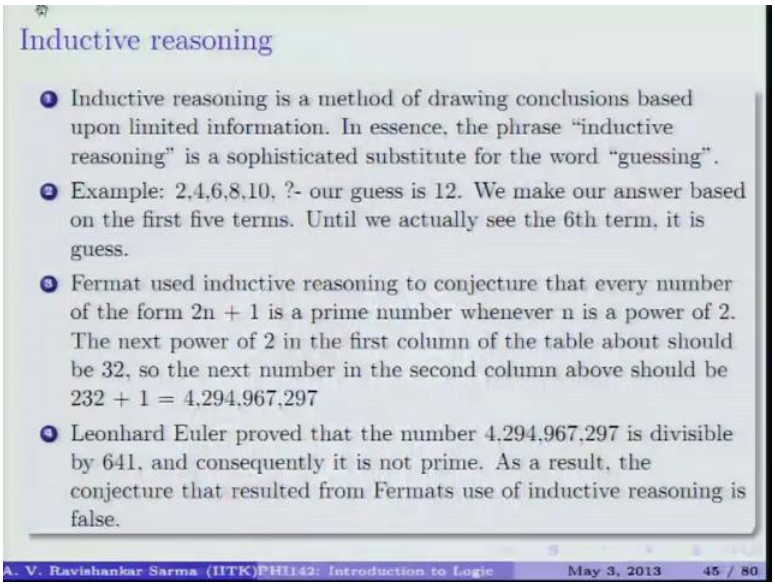

And all 2 y to the power of 30 2 plus 1 is going to be this particular kind of number and all. So, what is that format is trying to do s formulated this conjunction that any number of this format 2 to the power n plus 1 has to be prime number and all especially when n is a power of 2 and all. So, 2 to the power of 4 plus 1 is the prime number 2 to the power 5 plus 1 that is 30 3 that is also prime number like that you go on and on 2 to the power of 30 2 plus 1 we can predict that that is also prime number and all based on repeated observations. So, he has used it in this particular kind of used in, but this conjunctive whether it is proved or not its not sure about this. So, Euler is also used a single kind of thing eu Nature and Scope of Deductive and Inductive arguments number especially for 4 2 9 4 9 6 7 2 9 7 unfortunately this number is not a prime number unfortunately this

number is not a prime number.

The prime number is a 1 which is divisible by itself are by 1 and all. So, Euler themes to this conclusion that this number contemporary of format and all he came he showed that 4 2 9 4 9 6 7 2 9 7 and the big number which is stated here is unfortunately it is devisable by some number 6 40 and all. So, what is the case is that in consequently we proved it is not a prime number and all because it is divided by 6 40 and all the prime number is a 1 which is divided by 6 40 1 and all prime number is a 1 which is divided by itself are at least are 1 and all, but it is divided by 6 40 and all and you sure that it prime number and all as a result the conjunction that a resulted from a formats use of inductive reasoning its under to be falls and all.

So, we can use this particular kind if conjunction and all conjunction we proved falls then the we can proved we proved as falls also. So, what is the thing which we Length from this particular kind of these is Fermat is also use some kind of inductive reasoning in guessing the thing and all 2 to the power n plus n is the prime number he guess that based on that you know that we calculated that 2 to the power of 30 2 plus 1 is the prime number, but Euler has proved that this is not prime number etcetera and all; that means, proved that the guess is wrong. So, which repeated observations. So, till 2 to the power of 5 4 plus 1 2 to the power of 5 plus 1 or that feelings says that is true in that feelings says that that is prime number and all, but at you know it may not be conclusion is not guaranteed by whatever is there Euler around the conclusion probably follows from the premises, but it may convert to be the case conclusion may be falls and all. So, all the guesses based on prediction etcetera the conclusion goes beyond what is stated in the premises and all.

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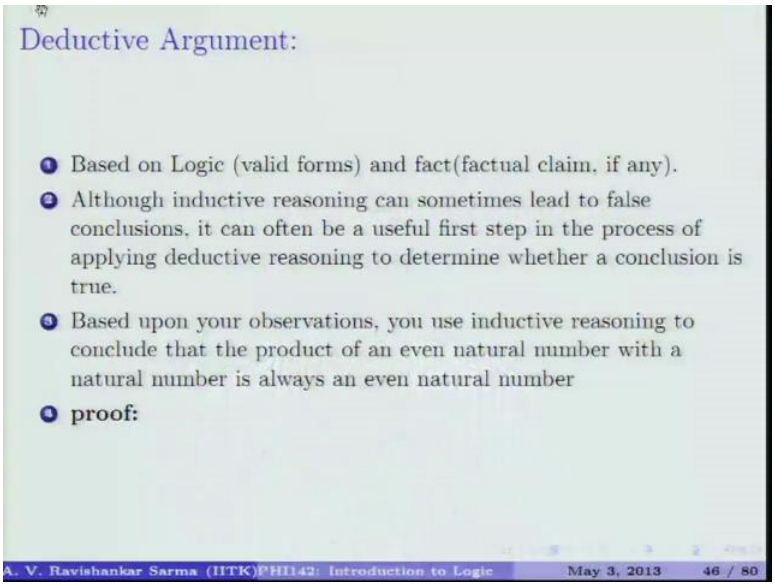

So, other kinds of directive again we come back to the directive arguments and all directive arguments are based on some kind of valid forms of actual claims if it is were any good and all. So, although in detective reasoning we can sometimes lead to conclusion the 1 which we have seen or guess work may be falls and all we can often useful 1st step to the process of applying deductive reasoning to determine where are the conclusion is true true. So, based on the observation to use in the reasoning the conclude that the product of the even natural of an even natural number with natural is always an even natural number and all. So, we use both reduction induction simultaneously and all based on our convenience and all allow we know that in the case of reasoning the conclusion may to be falls probably falls, but it stay for a starting point you can use this inductive.

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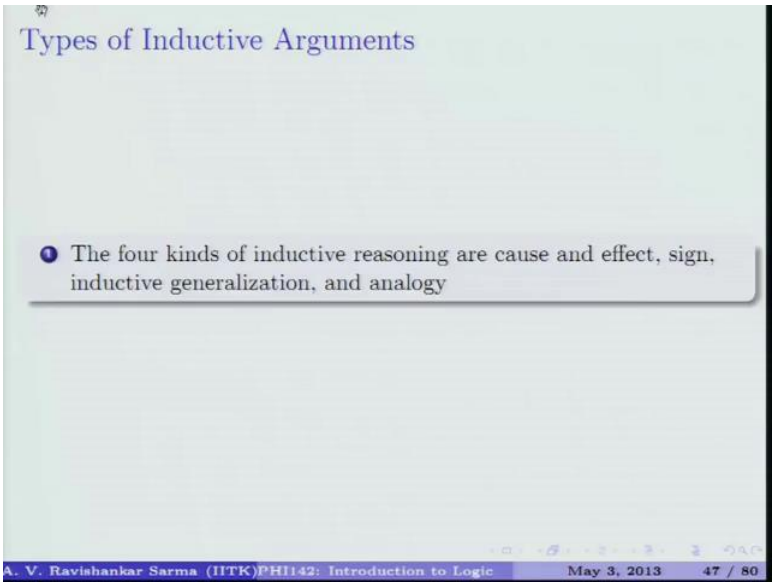

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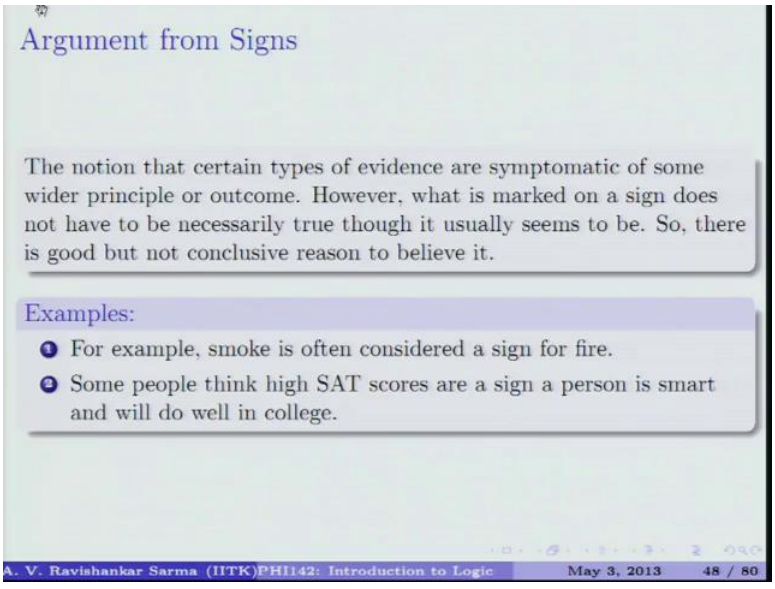

Reasoning and all the prove certain all thing and all what are the different types of inductive arguments is you come across usually come across in generally the 2 ah different kind of inductive arguments 4 different kinds of inductive arguments which we frequently see natural sciences are naturally day to day discos. So, they are arguments from cost affects arguments based on science in directive generalization and analysis. So, let me explain this thing in a while ah in greater boated. So, this all quiet obvious to as an most of the examples are quiet familiar to us is using day to day examples and all, so but we are trying to putting this particular kind of category which comes under the category

of inductive arguments again for judging this whether it is inductive or deductive arguments we need to relay on the 4 questions and all is it a open that argument is a truth preserving.

Some kind of variable strength present in this particular kind of thing etcetera in the argument event etcetera whether the conclusion necessarily follows from the premises all these question to ask to judge whether this argument is indict inductive argument or deductive argument. So, arguments based on science is like this it is a notion that certain types of evidence are symptomatic some wider principle are outcome; however, what is marked down a sign does not have to be necessarily true now it is usually seems to be the case and all. So, that not a good conclusion region to believe that the particular kind of thing which is stated science is going to be true and all let us take an example. So, that we can explain this (vocalized noise) better than for example, smoke is also consider to be sign for fire at all, but it allowed to be the case that there may be some other reasons for.

Can be shown as sign for fire and all electrical short circuits etcetera and all there also fire my break out. So, that we need the smoke etcetera and all sometimes may not be need smoke for the fire and all some people thing that high scores on in the state exam are sign of a person who is smart in of course, we will do in the college and all the same way the person who crack j e a etcetera and all usually say that a bright student and all we convert the state we join in a I t mite fire in all the courses and I t also may not be indicated will definitely can be taken into consideration, but again depending upon his background as well as depending upon how will performs in the ah exams in I t k whether or not going to succeed and all and depends and also just mere great score in the state examination does not make a smart and we cannot guess that we will do well ah the other argument which come under the category of inductive argument easiest that argument based on other authoritarian so.

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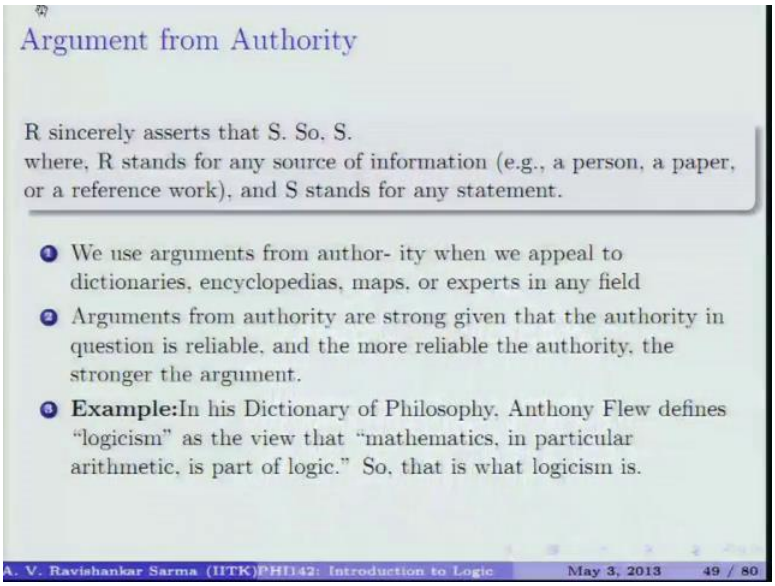

Somebody is having some kind of authority state like some kind of authority you know, but anyone who is some kind experts in particular kind of thing and all see usually we say that we are some kind of authority for example, if the deputy announce is that there is no classes tomorrow then we believe that particular kind of all somebody some other kind of ah person who is working were else idebredia some 1 to announce that there is no class tomorrow then we suspect that particular kind of thing because is there not based on authority again the question come to question is what source of authority in all difficult question to answer base.

We make use of common sense to judge that. So, princes have some kind of authority and some kind of feels usually we say that a politician usually you know expected some kind of authority and the politics etcetera and all, but suppose all of certain is starts prescribing some kind of drugs etcetera drugs is the sense that e tells water that in a use is particular kind of medicine etcetera and all people will be suspicious about his claims and all a politician is expected to have expertise in some area and all not in the medicine etcetera and all.

So, now, argument of authority course likes this or sincerely assets something is a case s is the case and all. So, then that is why that is s is the cases eastern explain that something is the case and all. So, that is why it is a thing and all were all stands for source of information for example, a person a paper reference work etcetera.

S stands for any public any kind of statement if r sincerely something assets something in a case that is why it is the. So, s is the statement; that means, it is true or falls it can be a taken true or falls. So, we use arguments some authority when we appeal to usually dictionaries encyclopedias maps experts in particular kind of field and all. So, basically these are consider to be having some kind of we say that ah some kind of authority is there in that particular kind of subject matter. So, we real on in cycle operas maps etcetera and the google maps whatever it is for judging the authority that particular kind thing of argument some authority as strong given that authority is question that reliable and more reliable the authority most hanger the argument would be an inductive argument can be.

Ah most strong especially in sense that it is having reliable kind of other; that means, argument based on authority will be having 1 kind of strength and all in this dictionary of philosophy for example, anthony flew defines logicism as a view that mathematics in particular earth mastics is a part of logic. So, that is what logicism is because in referring to dictionary of philosophy are and encyclopedias etcetera it is to be consider some kind of authority invest or other kind of things then based on that you know judge that we probably which the standard definition of logicism and all suppose all of some politician tells us that this is a definition and all in we very well suspect or particular kind of thing and all. So, how to be know that this particular kind of argument is having reliable authority or not.

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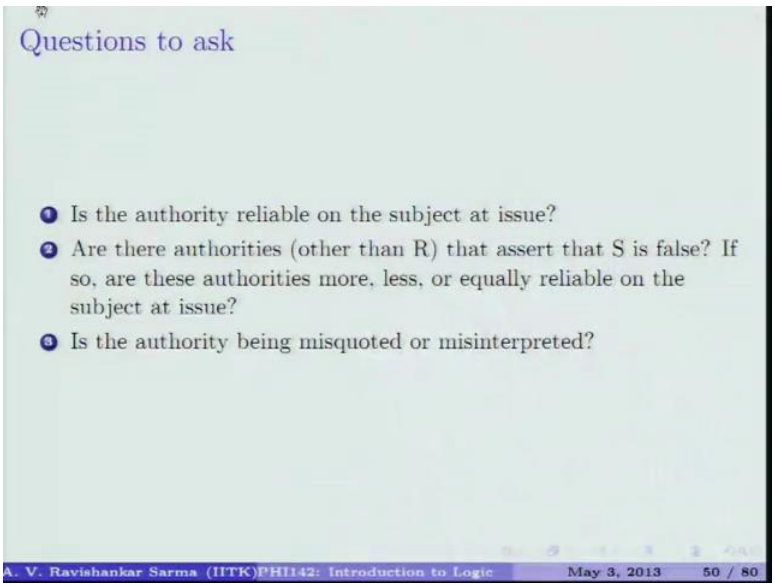

Suppose if it is not is not based on reliable authority in all and then since to be some kind of mistake in the argumentation when we talk about fallacies we will talk about the particular kinds of mistake in the argumentation which come under category of fallacies that fallacies is called as fall fallacy in week induction based on unqualified kind of authority of. So, there are the 5 question which we need to ask is the authority reliable on the subject at issue are not. So, why since talk about physics an all it make some since an all for example, usually common sense is that for example, all of certain some president of some country talks about prescript of drugs etcetera and all and we very well in some kind of doubt in all are the all of certain try to talks about prescription of an all and will such fallacies of that particular of think. So, are there authorities that assert that s is false which he question we need to ask whether he want to garage weather it is having reliable authority are not. So, the answer is if. So, are authorities more less equally reliable on the subject at issue are not is 1 which he need to ask is the authority being misquoted or misinterpreted etcetera if it is misinterpreted are misquoted and it is contracted to be the fallacies of unqualified authority in all.

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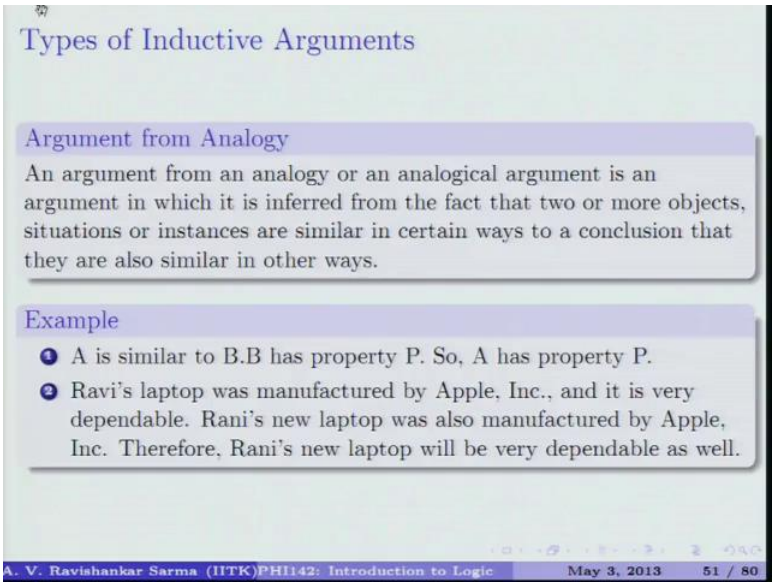

When the talk about fallacies I will talk I will do into the retails of is particular kind of think again when it is the other kinds of arguments which comes under the category of in that argument are argument from analogy analogy in the 1 which we commonly use in day to day diseurs and we trying to compare to similar kind of objects etcetera in argument form analogy or an analogical argument which we common see in sciences

also natural sciences comparing to similar kind of metals and then suppose if you have 1 metals is having some kind of property.

Usually we know the metal also behaves in the some way like the other metal and then he will say that 2nd metal also having similar kind of property and all and argument of analogy are analogical argument is in argument in which it is inferred from the fact that 2 or more objects situations or instance is are similar in certain way to a conclusion that they are also similar in other ways also. So, let us say a and b are there and then they are similar in to respect an all then you will say that the 3rd 1 the other kind of property that you come a across may be you know you will be and the impression that this the metal be also having a similar kind of property and all. So, this is like this and example is like this they have this kind of pattern all a is similar to b and b has some kind of property p and all.

so; obviously, we will say that since a and b are similar that each other and you probably we will say that is also having that particular kind of property b p because a and b are similar and all they show same kind of thinks in several difference ways it is an example which tells us a greater detail ravis laptop was manufactured by apple inertia a cooperation etcetera and it is very dependable an all that is the property at it else stable operating system excreta desktop all this and now you will comparing another a statement as is ranis laptop are also manufactured by apple; that means, this 2 are similar in this since that the manufacture by apple industry . So, therefore, based on that think you will inforde that d is also having the property p p is like this ranis new laptop will also be dependable as well. So, again this argument we are going beyond what is stated in the premises. So, that is it is in open ended argument if you had more information to it then it will strengthen or weaken this particular kind of argument is in that sense it is a open ended argument. So, there are few other arguments.

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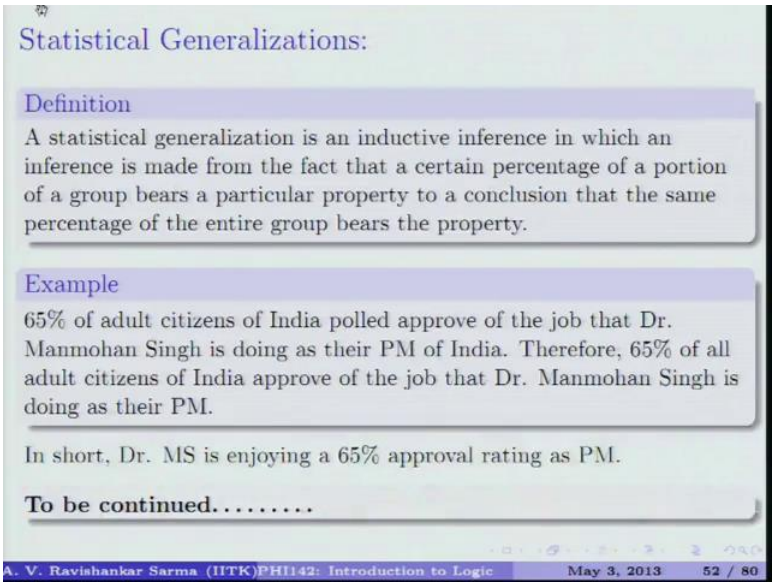

So, will I come to the end of this lecture there are some kind of arguments which we commonly come across they have statistical generalization what is the statistical generalization a statistical generalization is an inductive inference in which an inference is made from the fact that certain percentage or portion of a group bears some kind of property to conclusion that the same percentage of the entire group bears the bears some particular kind of property an all. So, again with an example this gets clear an all what it says is certain percentage or portion of a group bears some kind of property p an all let us say 30 40 percentage of a that particular kind of portion of a group has this.

Particular kind of property then with that you generalization say that a same percentage of entire group also bears this particular kind of property within example complete example it is abstract idea will get a simpler we say that usually in this example 60 5 percent of the other citizens in India approve of the job that Manmohan Singh is doing what Manmohan Singh is doing has the prime minister of India an all there for 65 percent 65 percent of all adult citizens of India approve of the job that Manmohan Singh is doing has a prime minister is honest.

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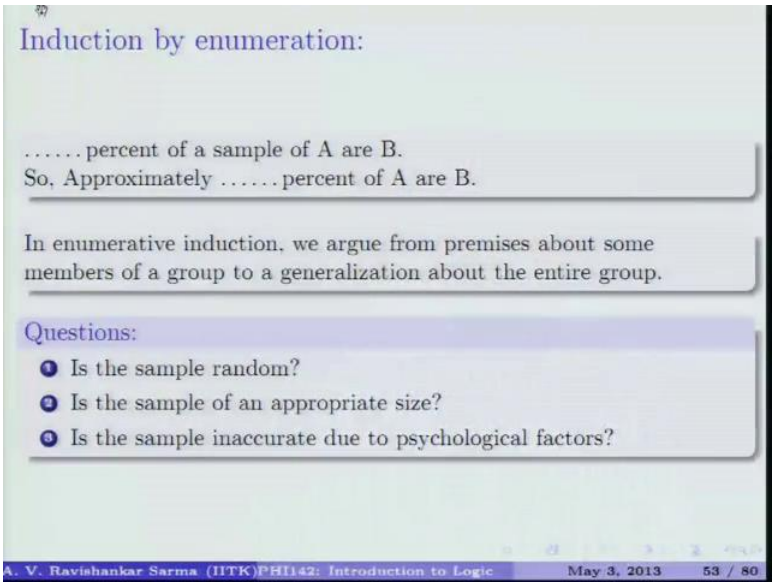

And all this things in a they are also proving this particular kind of thing insured what is case here is this that Manmohan Singh enjoying 65 percent of the approval rating has the Prime minister of India an all. So, then are some other examples which come under the category of a inductive arguments they are arguments inductive arguments why a enumeration an all suppose if some. So, percentage of a sample a of a or b. So, we say that approximately some percentage of a or b s an all. So, what we do in the case of in enumerative induction is this that we argue from the premises about some members of a group to generalization about the entire group an all an some questions we need to ask for a judging a whether it is argument based on enumeration inductive argument based induction based on enumeration is the sample size random is a sample is of appropriate size sufficient size it is size is there are not which we need to question is the sample is in accurate inaccurate due to psychological.

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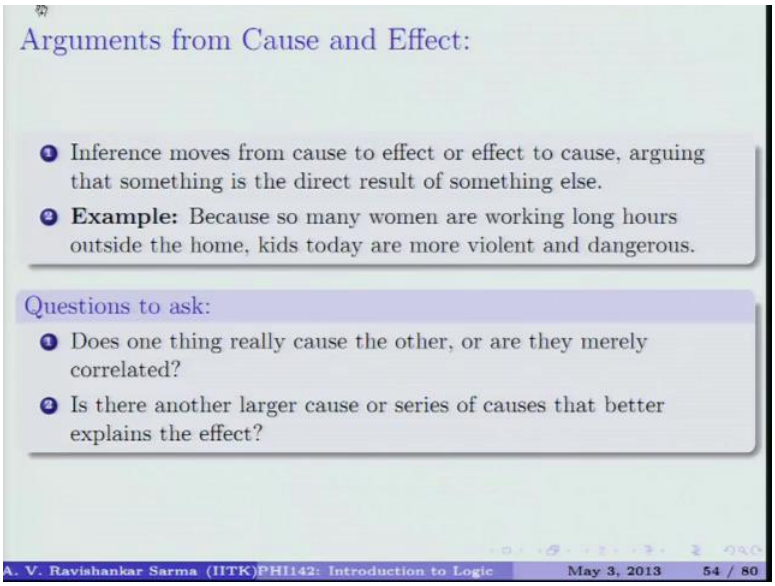

Factors they have some of the question which we need to ask the final argument that you come across. In day to day disuse are may be even in the natural sciences is 1 of the most important inductive argument that is the argument from cause effect. So, this is an inference is a some kind of mental process in which move from. So, particular premises. So, other kind of statement which is called as conclusion an all inference moves from cause to effect or some kind you moves effect to cause in all some to fir etc or maybe you observed some kind fir and then in for some of the other things an all arguing that something is the direct result of something else example because. So, many women are working long hour outside the home kids today more 1 violent and dangerous. So, since women are working coming late some office an all this nobody take care of the kids etc may be the conclusion follows that you know kids today are more valiant dangers in all.

It appears 1 is causing the other in all, but again whether it is a good argument are not ultimately thus logic what we tried to come of this these that whetted it is a good argument or bad argument an all how did good or bad argument; that means, argument based on cause effect here some the question that you will be asking all. So, does 1 thing really cause other 1 or not or it is due to some is a correlation it is confused us correlation etc an all the 1 which need ask also are there merely correlated an all is any other larger cause or series of cause that better explain the effect that is correlation an all.

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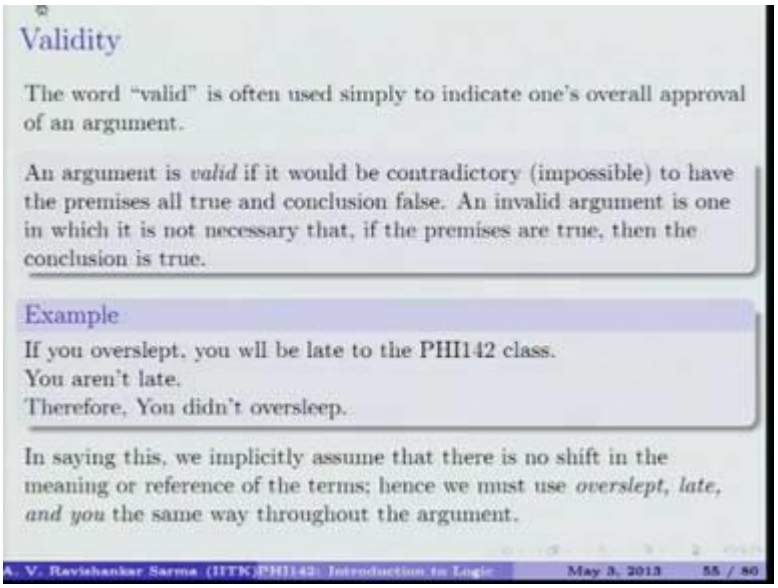

If you answer is yes then you can thus argument can be improved farther. So, this we know will close this lecture the what we spoke about is that we are talked about various instants we come across deductive and inductive argument deductive argument usually come across argument based on mathematics argument based on definition etcetera then were as inductive argument is usually argument based on science argument based on authority argument usually based on cause effect there all come under category of inductive argument an all how did we gorge that these are inductive and dedu ctive argument again or 4 basic question that we asked our self is it true preserving if the argument truth preserving or in the argument whether the necessarily follows from the premises or this argument is any new information present in the argument these of the some question we asked based on that we is a given argument is deductive or inductive an all.

In the next lecture I will be talking about special important property of logic that is validity validity tells that suppose you given 2 statement in all how it follows when least some other kind of statement that we calling it as a conclusion how the premises are living to the conclusion the link between premises in the conclusion how there leading to the conclusion is know by the concept of validity in all.

So, once we talk about validity then we talk about soundness deductive argument an all in the case inductive and deductive inductive argument we can only talk about strength

of the inductive argument; that means, we can only say that the given inductive argument is strong and weak an all. If it is strong then we can ask our self whether it is cogent argument or un cogent argument based on premises are probably true etc an all. So, when the next class, talk about the validity of deductive argument.