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Lecture #3
Name of Lecturer: DR. CHARLES DeKONINCK
Title of Lecture: SCIENCE AND THE HUMANITIES TODAY
Date: August 16, 1962

As we said the other day, there are common conceptions about which we do have error. Our very first conceptions, there is no error about them. If we erred about all our so-called common conceptions we could not possibly achieve any knowledge whatsoever thereafter; we'd remain in a state of total uncertainty even to the point where we would not know what uncertainty is. Because to know what uncertainty is, we must know what certainty is. Uncertainty being a negative term.

Now these then are things that we know first through induction. Take our initial vague conception of man. We have such a conception, since we ask what is a man. If we did not already know what a man is after knowing -- of course, there is always the word, but the word stands for something. Now that we consider what the word stands for, we can ask about this -- what is it? We -- if we did not have such knowledge, the question would be utterly meaningless. Now this knowledge is admittedly vague, though quite certain. But this is not the same as to be able to explain, to unfold, exactly, distinctly what it is to be a man. If asked to convey exact knowledge, we will first make a division; observing that man is in fact an animal. And animal is something more known. In fact we know man as an animal before we know him as a man. That is, we know what it is he has in common with other things before we know what sets him apart from other things. But yet knowing man, we know that it ought to be something more than mere animal. And so we see the division.

Now the first thing that we observe about man is that he has developed certain skills. He makes tools; he talks; and in both there is skill. And in either of these orders, there is a kind of infinity, which we readily observe. He is born the most helpless of animals, or, as the anthropologist would say or the zoologist rather, he is the most unspecialized of animals. He is born naked; he is born the most helpless; he has to be fed in a special way; he needs shelter; nature does not provide him with clothing nor with shelter, and he is helpless for a very long time. Nature then leaves him quite incomplete.

Now the complement that he needs -- the <u>complementa</u> -- will be those of art; those of crafts. I'm taking art now not in the sense of fine arts, but rather in a sense of craft. Making clothing, making shoes, building shelter or designing weapons. These needs of clothing and shelter and protection against the rest of nature, and presumably most of all against the other man, these needs must be satisfied by deliberate attempts and work. This we observe. There are ends involved; he needs to be clothed against the weather and needs shelter, again against the weather although there is a more profound need for shelter than that against the weather. He needs shelter to set him somehow apart from nature. But we won't go into this now. So we see that end calls for means.

Man in providing for his needs ~~and~~ or satisfying his needs rather, goes from one thing to another through something intermediary. And this he does deliberately. For instance, there is wood around. There is a wood around with trees. He needs shelter. He must be protected. The wood must become lumber if he is to have shelter.

Notice the intermediary term here. And he makes his own shelter. Goes from the shelter that he needs to the shelter that is through certain means, materials and operations and achieves that end. This is what we call a discourse of something that is characteristic of man - and which we will call reason.

Now notice that the evolution of shelter goes in all directions. He does not just build this particular type of shelter, but all kinds -- the same animal, man, builds all kinds of shelters, and the shelters he built a long time ago are quite different from the ones that he builds now. So that here a kind of infinity is exhibited. His ability to provide an infinite variety of shelter and adapting himself to climate and so on.

Now this discursiveness is seen as characteristic of this particular animal; this particular kind of animal. And now having animal on the one hand -- and you could ask me -- what do you mean by animal? I would define animal as I said the other day -- as a body endowed with sensations as distinguished from a plant or from other things. Now this particular kind of body endowed with sensations also has discourse. It is a discursive animal. What we also call a rational animal. Now we make -- we have just made a division. I announced it and I made it. We put together animal and rational. This is a composition which our mind performs. And now we have a more distinct knowledge of what man is. It is still relatively vague but it's more distinct than the initial knowledge.

Notice that I have insisted on giving rather practical examples. Man as a craftsman. The homo faber. Why? Because he is more readily verifiable. The homo sapiens -- or the craft

which becomes the fine arts is surely -- surely exhibits a greater perfection of man, but it is the less manifest one to start off with. And as a matter of fact, it is so I believe, there is some foundation for this priority of the sheer maker to satisfy those needs which man must satisfy if he is to live even as an animal. He must have clothing and he must have shelter and he must have more than milk and bananas.

So we now have more distinct knowledge. But of what do we have more distinct knowledge? Of what we already fairly vaguely knew; namely man as this confused whole that we first apprehend. If not -- I mean if the knowledge, the distinct knowledge that we have when we say "rational animal" -- if this distinct knowledge were not distinct knowledge of something first vaguely known, what would it be knowledge of?

If we did not -- if this distinct knowledge did not depend upon the vague knowledge, how could we know what it is that we are defining. It is not our definition that posits the definitum in this case. This definition depends upon what we were to define. Now here I must open a little point because there are definitions which posit the definitum. In mathematics you have many of these. That is, you lay down a definition and then that is the thing that you're talking about. We'll come back to this in a moment. But as far as the things of nature are concerned, we are utterly dependent upon this initial vague knowledge. And the distinct knowledge we acquire depends upon the vague knowledge, and the vague knowledge of what we vaguely know will remain the matter of what we come to know more distinctly. That is, the value of the distinct knowledge will depend upon the value of the initial vague confused knowledge.

Notice now that our distinct knowledge is less certain than the vague knowledge. You know well that we might easily err in making our division in view of the definition. We might choose the wrong division. We might apply it to something which is purely incidental, which does not really set man apart from other animals. There can be error in the division. There can be error in the composition, in the forming of a definition, in the framing of the definition. There can be error there. Although this knowledge is more distinct. This is extremely important and the rest of what we have to say will hinge upon this.

For instance, a definition is debatable. But the vague knowledge we have of man is so vague that about the knowledge that we have in this vague apprehension there can be no debate. If there is a debate we have to step outside, that is, attempt to go further toward more distinct knowledge.

For instance, when we say that man is a rational animal and we give as examples the works of his craft, one might always say "Well, what about birds? They make their shelter. They makes their nests." And so many animals make their own shelter. So what's the difference? You could bring in all kinds of objections and these objections I'm sure will go on until doomsday, but some people will settle on rational animal as typical of man. But notice, I insist upon the debatable characters of the first distinct knowledge that we have especially in the order of nature, that is knowledge bearing upon natural things. All debatable. You can't expect more.

Now, there is a margin for error between the <u>definitum</u> undefined, and the definition of this <u>definitum</u>, both in the order of division and of composition. Now, I've talked to you about the scholastics

of the late Middle Ages, and the scholastics who carried on even throughout the Renaissance, and as an example of absolutely basic error made by the late scholastics, I will pick out a prince of scholastics; a man of true genius, but who went completely off, namely, Cardinal ~~Capidan (?) .....~~ Cajetan O.P. And here is -- here was his chief error. ~~Capidan~~ Cajetan taught that our first ~~apprehension~~ grasps of the nature of sensible things were not only true but also exact, just as, he says, ~~that~~ we do not err ~~except .....~~ in the order of proper sensibles. When I see red, I'm sure I see red; whether there be redness there or not makes no difference. I'm absolutely certain and there's no doubt about it. A color-blind person -- you see how all these things are debatable in some measure, but we find now that color blind persons who do not distinguish say red from green -- well there is something in their eyesight to account for this lack of distinction in their seeing. Well anyhow, for instance, I feel a difference in the temperature of this table or this desk and my hand. I see many colors here. I can eat -- I won't start distinguishing the individuals here because that would bring me into the order of common sensibles about which we all ..... that is, as soon as we apply to the quantitative aspect of things, of physical things, I'm not speaking of pure mathematical quantity now, but physical things, we err very easily. Here is a classical example of a normal optical illusion. I'll divide this line at ju... middle. All right. Here we are. Which of th... the longer. If you say that this is the longe... is wrong. You must err. There is an optical i... sion. Nevertheless, we say, well this line is lo... verification it isn't. It's exactly the same as ... much for ... things,

the sun looks like a large dinner plate, and so on. We err for the most part. But in the order of proper sensibles, that is, in the perfection of color with our eyes -- I'm not speaking of angles of refractions -- to know angles of refractions produced by light passing through a prism you need no eyes. A blind man can know about colors in this respect. And the same for, say, a -- temperature. To you this desk will feel warm -- to me it feels cold. We can argue about this and settle it with a thermometer of course. But the thermometer is only a quantitative pointery. That's all it can provide. We're just chock full of all the materials you need to err as much as possible. See the de Anima ..... -- man is the most erroneous of all animals.

Now ~~Capreolan~~ Cajetan thought that in the order of simple apprehension we have the same kind of infallibility. What he did not distinguish is the initial apprehensions, and ~~in~~ the passage within the first operation of the mind, within it, from confused to distinct knowledge, and here is the margin for error, and that is why our mind needs direction; needs artificial direction in order to pass from confused to distinct knowledge. In other words, there is a special branch of logic governing the dividing process performed by our minds in view of definition and a treatise about it -- laying down rules for composing the terms that we have divided or distinguished in view of the definition. This -- the first operation of the mind stands in need of direction. It would not if we could identify certitude with exactness as ~~.....~~ Descartes did and this you will see in a moment that Descartes is a true child of the worst type of scholasticism. And when I say the worst type, you mustn't think that ~~Capreolan~~ Cajetan was the worst type of scholastic. We owe him too much for that, but nevertheless he did err concerning these simple things,

as he did about analogy as well. For the very same reason. But this would take us too far if I try to apply -- to point this out apropos of analogy as well.

Now, what did Descartes do in this regard? He thought that things which to us, and I think which to all men, except to scholastics in the late period — he felt that things which we first apprehend, because we apprehend them with great certitude, are also exactly known, and the examples in Descartes are e.g. body, motion, place and time. Now of course we are certain that there are bodies. Fine. I'm one to begin with. We are certain that there is motion. Here is some. We are quite certain that there is place. Here I am. My hereness is not the place, but what I occupy here. I begin here and I end down there, varying as I switch around. Anyhow, this is my place; the place that no one else occupies but I. Of course, I'm certain of this -- here I am. And then there is time. The measure of motion. Or let's not say the measure of motion. That's going too far. There is time. We use the word time significantly. Even without attempting to define it. We're so certain of all these things. ~~There is accliva (?) about this. .....~~ But, now that we have identified -- suppose I say, by motion I mean something like this. Or, by motion I mean Socrates is reddening. He's blushing. He's changing. That's a kind of motion. Or this tree is growing. Remember it ten years ago? Look what's happened to it now. That's another kind of motion. All right. We agree on this. But now just what is motion, now that we have agreed upon the name. Now that we have a nominal definition of motion, what is the thing that we call motion? What is it? Then we're in face of obscurity. For motion, although well known, is one of the most obscure things when we seek to have distinct knowledge of it.

When we seek a definition of it. Now here is something with Descartes. Here we are faced with an entirely new phenomenon. Whereas all the Greek philosophers without any exception whatsoever thought that motion was the most obscure thing in our experience, to the point where some denied it altogether, because it is so obscure -- how could this be real? (they would ask) Whereas others thought that there is so much motion all over that we can't possibly have science because things, as time goes on, are always different. They change all the time. So by the time you have said something about it it is no longer true because now it is other. You see. So they said science is impossible. But nevertheless both did consider, that is, the Parmenidians and the Heraclitians, both of them held that motion is very obscure. One to exclude it; the other to let everything be engulfed by it in obscurity, with the attending impossibility of science. Of certitude, of the possibility of formulating propositions that are true and inferring other propositions from previous propositions that give us a new knowledge with certitude again, This was denied because of the obscurity. But to Descartes suddenly -- all of this becomes clear and distinct to him motion is an example of clearness and distinctness. And the same for place, and the same for time. Now this, you can see for yourselves in his Regulae ad directionem ingenii, Rule 12. You'll find this in practically any edition. I think you'll find it in the Great Books', translation which as I said the other day, is not good. That's your problem.

These are the words that he wrote in Latin. Regula 12. Where he makes sport of Aristotle's definition of motion as being so obscure, whereas motion is so obvious. But it is because Descartes confuses

certitude which sometimes means firmness of adhesion to a proposition or to a notion, say, and certitude in the sense of exactness. These are not the same. To us, in our study of nature, they are inversely proportional. The more certain we are of a thing the less exact is our knowledge of the thing, and the more exact our knowledge is, the less certain it is. Remember the example of man as a rational animal.

Now, this turns the world upside down. This is, from the philosophical point of view, and the viewpoint of the history of philosophy, this is to me the most radical break with all previous philosophy, and it was indeed prepared by the late scholastics themselves, unwittingly. But in Descartes we have it. Identification. What is most knowable as to us with what is most knowable in the order of nature. Now notice that he might have some pretext for ~~the identity~~ for making identical certain knowledge with distinct knowledge. You can find this in mathematics, for in mathematics, this is true. That which is most knowable in itself, is also most knowable as ~~to~~ us. There is identity there. But this holds only in mathematics.

But notice, what is characteristic as to mathematics as compared with the other sciences? Mathematics is essentially a constructive science. In mathematics we construct the very subject. Take any given subject in geometry such as a triangle. Well you construct a triangle. You begin by constructing an equilateral one. And then you will define the others by comparison. The sides are unequal. But the equilateral triangle you construct. And having constructed it, you say the equilateral triangle exists. Now, from triangle as such, equilateral, scalene or isoceles, makes no

difference. You can infer a certain property, such as -- talking about flat triangles now, ~~such as~~ to have their three angles equal to two right angles. All this follows from your construction. I do not say that we construct exactly what is to be an equilateral triangle, but we cannot arrive at any such knowledge without construction. I give the example of a figure, but I might go down to the elements, because even the elements are such as point, line and surface, and volume. Even these elementary notions are arrived at by construction. // You have to say exactly what you mean by a point. You can't just put a point on a blackboard, but you have to make some such construction. Say, draw a line and then cut this line. This is a point. The point where the cut takes place. That's a point. Or a line -- the extremity. Or if you want to build a line, make clear what a line is, you have to have recourse to some point at the end. You might say put two points there and then join them. Or you might, more simply, as the Platonists did, and this is quite legitimate when you're approaching the elements, just have a point in motion and let the trail -- and left a trail behind which is a line. Or have a line roll along, and the trail that it leaves behind is a surface. And let the surface sink down and you have volume.

But these elements are a little difficult to make plain. If you want to have a good idea of how difficult it is to define point, line, surfaces, and so on, read Sir Thomas Heath, Thomas Heath's Introduction to the Elements of Euclid. It's a long introduction - most interesting. But you see, it is not the business of the mathematician to lay down these definitions. These you must take from somewhere else. I won't mention where you get them from or should take them from. We might go into this later.

Anyhow he himself just takes them for granted.

Now once he has these, he can move on freely almost in all directions, by further construction, and everything should always be exact and clear. And this is possible. So long as you assume the foundation. If you start arguing about the foundation of mathematics, then you run into great difficulties. But once the foundations are agreed upon, the going is free. The doors are wide open.

Now, notice, this is constructivity, and the constructive aspect of mathematics is artificial. It's art. Mathematics is not just a science, but also an art. And it is art by reason of the constructivity.

Again, mathematics is the most human of the sciences. I do not say the most humane. There is something awesome and inhuman about mathematics, if you wish. But I mean that it is in mathematics that we can achieve the most exact knowledge; a knowledge that is utterly proportioned to our minds, to the human mind, because to be a mathematician, one must have human reason. Angels are not mathematicians, nor is God a mathematician, although they know mathematics better than we do, but they do not know the mathematicals. Just as God is not a logician. God never reasons. An angel is not a logician. Logic and mathematics are typical of human reason. So in mathematics we are at home.

Now we agree upon this. If we do not, well then let's just make the agreement conventional. Notice now that mathematics provides an extraordinary tool for the investigation of nature. And this tool has become more powerful and efficient as time went on. Mathematics as applied to the study of nature, giving rise to what we call mathematical physics, this is something that goes

way back to the early Greeks. You'll find it of course in a confused state still among the Pythagorians, and then with Aristotle the conception of mathematical physics is extremely determinate. And this goes on through Archimedes and so on. But then something -- let's see what I have here -- yes, mathematical physics, contrary to what some historians of science who were not too well-informed have said, was not a creation of the Renaissance, nor a creation of Galileo. The substance or the idea of the mathematical physics goes way back, but the power of the mathematical tool, that is something relatively new. That is, the knowledge of the power of this tool. Yet, the ancients could account for this very well. This might lead us too far off into a doctrinal consideration, that is, the reason that mathematical -- mathematics is so applicable to nature, is because quantity is the first accident of natural substance.

But forget this. It sounds too scholastic.

But then gradually, thanks to the Arabs, another, or rather an extremely powerful tool came to birth in Algebra first of all. This was an extraordinary discovery, algebra. And largely due to symbolization. Symbolization -- the Arabs are extremely -- they have a genius for symbolization. Take for instance the symbols that the Greeks used in mathematics. They were as clumsy as can be. The Romans too. What could you do with the Roman numerals when you have to calculate? Besides, it took experts to perform an operation that a six year old child could perform in a matter of seconds -- in took an expert in those days, weeks and months and years to do it sometimes. Whereas now we have tricks.

Well, this is not strictly mathematical. This is just in the order of computation as is true in mathematics. Now the application of algebra to geometry, thanks to Descartes, gave us

analytical geometry. And then eventually, in a later period, Newton and Leibnitz, I don't know in which order we must report them, Leibnitz or Newton, or Newton and Leibnitz, ~~I~~ ~~Leibnitz (?)~~ I should say -- there was a great controversy about this, and I don't know whether the matter has been settled and really I do not care. I'm talking about the calculus. Differential calculus; infinitesimal calculus. This is an extraordinary tool. Why? Because it allows us to approach an exactness indefinitely. And thus we meet the rough edges of nature, thanks to this. There is a great deal of irregularity in nature, but this irregularity can somehow be ours tentatively and ad infinitum approached.

But the important thing is that it is the most -- that mathematics is the most human of sciences and that this most human science permits these achievements. We can't deny the achievements. We couldn't send these pieces of hardware way up into the air, into space, without this kind of knowledge; without mathematics; even without this particular type of mathematics. And these are achievements, aren't they? We couldn't ride around comfortably in automobiles without it. Still, nature does not grow out of our mathematical head. That is, nature is not a conclusion as a term of a mathematical reasoning process, and every mathematician knows this, and every physicist knows this. There is a datum out there that has to be met. And it cannot be adequately met in mathematics. That is, we cannot say the world is a subsistence of mathematical order. The world -- that is what we used to call quantity as something else ~~something else~~ -- is now something all by itself. We cannot hypothesize a mathematical order. ~~If we could~~ Do you think we would ask a mathematician "now that you have calculated

that so many cows could stand erect on the surface of the earth, bring them there." He can't do a thing about it. The cows have to be generated. It's easy -- you can multiply cows in an imagination as much as you wish, to infinity. That's all very easy. But how about nature? There is something that resists.

Now there is a special way of overcoming this resistance. And that is of allowing the mathematician to bridge the separation, the gap that remains between mathematics and nature through another human concoction. Something that again grows out of our heads. Guess what? Combine mathematics with another tool that we produce and thanks to this, we again get closer to nature, and our knowledge of nature becomes more likely. It is no longer just an order of productivity, that is of predictability and things like that. Those who reduce the science of nature to pure predictability, well they have one point, but only one. There is much more of it to it than that. There is also a question of understanding. What is it that we will join to our mathematics and our mathematics will help us? And what we apply the mathematics to is something that we ourselves produce which will allow us to understand nature. Machinery. Now what is a machine? Exactly? A machine is a complex tool. You would not call a saw -- I mean a simple saw, mechanical saw -- well let me see, wheels, sawing a board like this, by itself, by an electrical impulse or something like that -- but a simple saw is not a machine. A simple hammer -- there are mechanical hammers -- but I'm talking about an ordinary hammer that you hit your finger with when you drive a nail in the wall to hang a picture on. This is not a machine. But when the machine becomes complex and somehow automatic, then you start talking about -- when a tool, I mean, becomes

complex, and becomes somewhat automatic; that is, self-driving in some measure, then you start talking about machines. Now I would not endeavor to tell you exactly at what point a tool becomes a machine -- no. Let's not try to be too exact about this. There is -- for instance, if I see an apparatus in which there is a mass, a cylinder, a steel ..... banging up and down with a very noisy other affair down there which is also a machine and which turns up in our street about once a week to upheave the pavement, to repair a gas pipe or something like that, well that's a machine. And an automobile is a machine. Now some have argued as to whether an ordinary wheelbarrow is already a machine. I don't know. There is a wheel there, I know, and it's certainly very helpful, but I wouldn't argue the point. Why talk about difficult cases to begin with. Start with the easy ones. An automobile is a machine.

So, what is typical about a machine again, as compared to the natural things? A machine is again something that grew out of our heads.// We make our machinery and we understand our machinery. Because -- if, say, we have this hammer banging up and down, there's no one touching it at all, we'll put some gas in another machine down there. Now this goes up and down, goes up and down. We know why it does. We perhaps do not know exactly why the fuel we use explodes, but we know that it does. But just why does it do so, we may not know that. Anyhow it does explode, and from there on we understand the whole thing. Right? Why? Because we ourselves devised it first of all in our heads. The works of our craft we know far better as to what they are than we do know the works of nature. And this began with lumber, because we know lumber as lumber far better than we know wood as wood. Wood as wood is very obscure.

I pointed this out last week. But as soon as we can make lumber out of wood, that is, trim the wood in view of something, namely shelter or a bridge, well then we know what we're talking about. As soon as our reason can take an initiative, and impose something upon the material that comes out of our head for a certain purpose, then we are again at home. But machinery is essentially human.

Now, what about machinery and nature. I should have brought with me a book by the late Professor Collingwood, the Englishman, entitled "The Idea of Nature". A book which when I first read it, many years ago -- I was still a student -- I did not like very much. Why? Because I first looked at what he had to say about Aristotle's conception of nature and it was all wrong. But I read the whole book later when the paperback came out -- I read the whole book and there are some very fine things in it. You see, this is a -- when one is a juvenis, philosophy is largely a question of passion and you have this master, and anyone who says something against him, you shoot. You shoot him down and Collingwood was shot down in my imagination. But it turns out that in later years, when passions wane, and one gets older and becomes inclined to say "isos" instead of saying "It is so" one gets a more open mind which ends up in ~~a~~nectitude where one is completely sceptical. But I haven't reached that stage yet, not mentally, I hope. Here is the point. Collingwood shows that, and he's quite right, that the Greeks and Romans did not really know about machinery. They had their catapults and things like that, but they were not machines in the modern sense of the word. They were not sufficiently -- I would give the reason

for this, that this machinery which was not true machinery, was faulty in this, that it was not automatic. Whereas our machinery is self-propellant, as it were. It is really an automatum.

I'll stop. We'll go on tomorrow. Then the machinery -- just to announce what is coming next-- the machinery is going to be used as -- and can and should be used as an exemplum to manifest nature, but the error will consist in this that we will talk about the machinery of nature as if nature herself were a machine. And that's a serious error. And then we'll try to get out of this.

(Only Copy)

Last Lecture

Lecture #4
Name of Lecturer: DR. CHARLES DeKONINCK
Title of Lecture: Unscheduled - title not known
Date: August 17, 1962

As we saw yesterday, both mathematics and machinery are characteristically human. They come from within us, inasmuch as mathematics is constructive. It comes from within. And inasmuch as machines are complex tools devised by us. They too grow out of our own minds and we understand them. And the tool, as I think I said yesterday -- this tool will be called a machine in the measure that it is somehow self-operative, self-propelling. So that the question of a wheelbarrow is a very difficult one. In what measure is a wheelbarrow a machine? We may call it a machine but I wouldn't argue about this. I think it is better to consider things in terms of their limits. That is, the limit of machinery is certainly the self-propelling machine. The lower limit of a tool is something simple as a stick used to scratch the earth say, which developed into a rake. Or a hammer, or a very primitive saw. That is a tool. It is something very elementary.

The point is that all these things grow out of our heads, even the stick inasmuch as we use a certain type of stick and break it off and sharpen it, and then it becomes a tool, an external tool. It's not a machine. For instance a stick that you use to make a hole in the ground to push a potato in it. I wouldn't call that a machine. But I would insist that it does grows out of the mind qua tool.

Now ~~to use~~ these mathematics and machinery ~~which in the external world~~, applied to the external world, go together extremely well. Yet to use these as the measure of all things is to humanize in the anthropomorphic sense of this verb; that is, if we impose

mathematics on reality as if reality itself were mathematics, as if reality were nothing but the exteriorization of purely mathematical conceptions, that would be to humanize reality. If we thought that because there is some comparability between our machinery and certain occurrences in nature, if we thought that therefore these two are the same, if from proportion we went to identity, then we would be humanizing in the pejorative sense of the word. That would mean that we refuse everything that cannot be caught in the web of our mathematicizing or in the constructs of our machinery.

But ~~notice I insist that anthropomorphic and mathematic~~ even though to apply mathematics to nature is a measure of anthropomorphism, notice it is not anthropomorphism ~~of the~~ in a derogatory sense. Why? Because we do it with caution. The same with machinery. We can speak of the mechanics of nature, provided we do not identify nature with machinery. ~~That~~ would be humanizing or anthropomorphizing in the pejorative sense.

Now a mechanical model, as we all know, is most useful. As a matter of fact different mechanical models dominated especially English physics. But the mechanical model must not be substituted for or identified with nature. It provides, as I have just insinuated, an exemplum. And by an exemplum I mean something which by reason of its comparability to something else less known, can manifest that other. If you take a machine -- you know how the machine works. Then there are certain things ~~that~~ which occur, that are made known to you through experience, and you see ~~that~~ what goes on over here, and ~~that~~ you know why because the machinery is an artifact, something constructed in our own heads for first of all, then because of the comparability, this gives you a measure of

understanding of what goes on in nature -- but only a measure of it. That is, only in so far as they are comparable. There is never more than a proportion between them. And I insist on proportion as distinguished from identity. For there are various kinds of unity. You have, unity for instance, numeral unity, e.g. Socrates, who was Socrates; you have specific unity, e.g. Socrates and Plato are of the same kind; then you have generic unity, a horse and a man are of the same genus. Plato, There are things that we can say the same way about either, and then you have another kind of unity which is very much neglected. This is unity of proportion where the things are only one in proportion. ~~There is, for instance, use Aristotle as an example, of proportional unity.~~ There is a proportional unity between health, medicine and urine. You say health of the animal, you say healty or healing or curative of medicine, and you say health also of urine, of urine as a sign of health, of medicine as a cause of health, of animal as a subject. But you cannot bring these three together and say health of them in the same way. No. There's only a proportion between them. But this proportion is enough to give you a name that is one. A name that is one yet signifies many things (in a determinate order). Has many different meanings. That's what we call an analogical name.

Now this unity of proportion is distinguished of course from all these other kinds of unity. If they were of the other kind, that is specific, and generic, etc., what is true of the one would be just as true of the other. There what is true of one is true of the other. But in this particular case, where we have only unity of proportion, the terms must be kept apart. They are simply many and remain simply many. And so it is with nature and machinery.

I think I insisted sufficiently yesterday on the fact that we often use artifacts as examples -- notice I'm using the word "examples" here in the Latin sense of the term, which means the same as παράδειγμα in Greek, not in the current English sense of the word which often means a sample of something, an instance of a case, but a true instance of a case. That's because the word "example" has acquired a new meaning. That's all. And this is all right as long as we realize that this term is analogical ~~when~~ so soon as it acquires this new meaning. But by example here I mean an argument. That is, as case which, because of some resemblance, an inadequate one, but because of some resemblance, can be used to manifest something about something else. Actually, when we put the "example" into a syllogistic form, we have a syllogism with four terms, ~~with the example~~ as such a syllogism — and therefore it is not at all neither a dialectical nor a demonstrative ~~syllogism~~. It has four terms. You have to break it into a pro-sy and a syllogism. What does it do? It manifests. It doesn't demonstrate anything. It just brings something before your mind to make you see the proportion between these cases, and seeing the proportion you see that what is true of this is somehow, not quite the same way, somehow true of the other.

For instance the arguments that you find in the first two books of the Physics of Aristotle -- many of them are proposed by way of example. ~~For instance when he shows that~~ Thus apropos of the principles of absolute becoming: If something is to become absolutely, e.g. today Socrates is not, some months later he is, then sometime later he no longer is. So something becomes absolutely; and ceases to be Socrates becomes as a man, as distinguished, say, from becoming pale, or as distinguished from growing; it's the same fellow who grows -- it's the same man who turns pale. When he comes from non-Socrates

to Socrates, well then something absolute has occurred. And this is the denying of several principles because in all becomings you need a subject and two other terms. Such as when Socrates turns red, from pale, he goes from non-red, Socrates non-red, to Socrates pale. ~~Wait a minute.~~ You take Socrates from illiterate, he becomes literate; well, illiterate disappears and literate takes its place, but the subject of illiteracy and literacy is the same subject, in a different respect but it remains the same subject. ~~So that~~ In fact so that in absolute becoming all becoming requires a permanent subject. ~~You~~ to pass from one term to another, ~~In absolute becoming~~ from non-this animal to this animal, ~~if this is becoming and not pure creation~~ if this is becoming and not pure creation, or a coming-to-be ex nihilo, out of nothing, you must have a subject.

Now here we have an example: ~~What is the exemplum from~~ Socrates from illiterate, becomes literate. That's an example. Which will be used to manifest what is involved in absolute becoming. You must have something similar. Not quite the same thing because there is a difference ~~to~~ in becoming absolutely ~~and to~~ from become as to something. ~~To become~~ The difference between becoming a man, from, say, ~~small to~~ become tall. You see the comparability. ~~The same when they use~~ Or take the example of the statue, ~~the form of the statue~~ You have a block of wood: this has a certain shape. You change the shape of the wood by hewing wood from wood, and you obtain a new form, but you still have the same wood. Not quite the same, but still wooden. First it was wooden block, now it's a wooden statue. ~~So you have three terms here again. We use this as an exemplum, and this exemplum you compare to something that becomes absolutely in nature.~~

The same thing again when we talk of chance in nature. Is there such a thing as chance in nature? Is there a measure of

indeterminacy in nature? This is very obscure. And in order to manifest this we will go to a case of what is similar to chance in nature if there is chance, we go to human events. Now in human actions things certainly occur by chance. Say an automobile accident. We call it an accident. It's a casual event. You did not intend it. It happened nonetheless. Socrates went to the forum this morning to buy cabbage, but instead -- he got the cabbage all right, but at the same time, he meets a debtor whom he had been looking for for a long time. He meets him by chance. He didn't go there to meet the debtor. Now, it thanks to an analysis of what chance means in human events, in our deliberate actions, something non-deliberate happens to something deliberate, this is used as an exemplum to manifest chance in nature. It's an exemplum. It doesn't demonstrate that there is chance in nature. There is chance in nature. We talk about chance in nature. But is this well founded? You see what I mean by an exemplum? Now on another plane machinery will play the same role. It will be an exemplum, but there will never be assimilation. We will never say that chance in nature is exactly the same as chance in human events because nature does not act for an end the way we act for an end. We act deliberately for an end. Nature acts obscurely for ends. Not knowing about it at all, except when we reach the animal that goes -- say the dog deliberately digs in this spot because this is where he hid the bone. Yes, but that's not exactly the same as our deliberately -- you see, I was using the word equivocally; to say that a dog performs a deliberate action the word deliberate means something quite different from what it means in a human context.

~~Is this plain? Now, this exemplum then~~ of machinery, ~~and we're talking about machinery~~ is a mere device to get at nature. For, as Heraclitus said, nature likes to hide. ~~But~~ we get at nature by devices, and machinery ~~and physics~~ is one of them. Mathematics is a more profound ~~example~~ of the same thing. But mathematics as a device is a little more complex because there is real quantity in nature. ~~But the~~ quantity in nature and the quantity in mathematics ~~considered as mathematics~~ are not quite the same. The quantity considered by the mathematician is abstract, ~~.....~~ and ~~you can never verify, except~~ with the exception of numbers, you can never verify anything mathematical exactly in nature. And even numbers get complicated. ~~But I mean~~ we can say there are an exact number of persons in this room. And I shut my eyes and somebody walks in. The thing has changed again. But the number has increased. But let's not get into these -- how shall I say -- parentheses -- they mislead us.

All these devices, when we use them, we must be aware of the fact that they are mere devices, and no more than that. And we can never attribute the same -- what we ~~can see~~ conceive about the thing, thanks to these devices -- never attribute this directly to nature as if nature herself were the device. ~~Max P..... pointed this out very well in his book that you know. I don't know whether it's been translated into English.....~~ Max Planck, ~~you know -- the Hermann Fellow who first put into the constant which is now called the Planck Con Quant -- the quantum (?). He~~ said very well that nature behaves mechanically only in our heads. That's good. And when Max Planck speaks of determinism, ~~because~~ he is considered a determinist by many, and he said he was a determinist -- you must read him entirely, for he said "The determinism that I talk

about is only in my head. Out there I don't know. But the determinism that we do know about is the determinism that we have devised as a means of approaching nature. Not as nature itself. That's very good. He was quite a fellow.

By the way he had a classical formation as most of these men did have.

The usefulness of our own works and those of nature comes from a proportion between them and our better understanding of our own work. But unity of proportion, ~~I'm repeating myself here, unity of proportion~~ and identity, I repeat, are wide apart and must be kept that way. With Descartes they are identified. He is the supreme instance. I mean, mechanicism was so inground in his mind, as a means -- as a means of knowing nature, that he actually identified the two and he said that all animals, even animals, even the higher animals, were mere machines in the exact sense that a clock is a machine. You know that. And even our own physical make-up was just machinery being steered about by our soul the way we steer about a buggy. If you ever did that. I did.

So animals themselves are mere machinery. Notice how far away we are getting from nature as it was first understood by the earlier philosophers, and all of them. The proportion will become even more subject to interpretation when we invent self-propelling machines. I mean it will be more easy to confuse machinery with nature when we are faced with self-propelling machines, that is Automation. Automobile -- self-moving. When we say that living beings are characterized by having the cause of their motion within ~~sui motis~~ -- What's the difference then between an automobile and a human being. Well many self-styled philosophers will insist that there is no difference at all. They too, they appear to think are automobiles — which of course they are in the primitive sense of the word. The

I said the interpretation -- this erroneous interpretation will become more tempting as our machines become more intricate and self-propelled. And today, as you well know, even if you just read your newspapers, many a computer man puts himself on ~~the~~ a plane with electronic hardware and is even inclined to give precedence to the latter. Now why should this be so? Why should he be inclined to do this? Because he can understand the workings of the machine so much better than his own. He knows how his machine is put together. He doesn't know exactly how his brain is put together. How it functions and why it functions as it does. But he does know this in the case of the electronic computer. That he does. He knows why it works as it does. And I guess he turns toward the computer as something more congenial to him -- well, he sympathizes with his computer as being more intelligible than he himself is, and he acquires a certain contempt for human intelligence because inasmuch as it cannot be assimilated to this machine, many people spontaneously detest themselves in the intellectual order because of the obscurity within them. It's so difficult to know exactly what the human intellect is. And actually we never know it but in a negative way. And so we are enraged against the ~~i~~ obscurity in us, and against the inability of our own minds to have an adequate conception of themselves.

So vagueness of self-understanding. I say "I understand myself." What -- how equivocal that is. I understand that I do not understand myself. That's plain to me. But that I understand myself -- it's plain that I do not. Because what would it mean to understand oneself? It would mean to have a kind of intuitive vision of what we ourselves are, which we most certainly do not have. But Descartes ~~he~~ realized that we did. Look how close we are to machinery

again. Descartes thought that we have a complete intuitive knowledge of our own soul, and that the first thing that we really do know is the very essence of God, and the same fellow went and said that we are in the main, plain machinery. Which is about the most extrinsicist conception one could have of nature.

Now all this confusion in the mind, or at least in the speech -- because he couldn't think what he says -- the computer couldn't think what he says -- he can say that a computer is just as intelligent as a human being and that the computer reasons exactly the same way. This can be said with grammatical correction and notice here the force of grammar. You can say things that are utterly impossible. Either to be or to be thought. I gave you the example the other day -- all three-~~quartered~~ cornered ..... are yellow. That's absolutely correct from a grammatical point of view. But try to think of such a thing. Won't work. Well the same with -- when you hear someone say a human being is exactly on a plane with an electronic computer, I think they have a point because an electronic computer wouldn't say such a thing unless it were said into it.

Now all this can be easily concealed, this confusion, by taking metaphors literally, so they speak of feeding and feedback, which is all right. But it's a metaphor/~~of either~~ a very primitive meaning of the word. They talk of the memory of the machine. Well if an electronic computer has a memory then all the books that I have in my library have a kind of memory too, because the words are being stored there and all I have to do is open it and there they are. Of course the electronic computer does something different. The electronic computer opens the page where you want it. But all it can give you is what is already stuck there and

fixed, in some symbolic form or another. But what do we mean by memory. Something entirely different. We do not confuse imagination with memory. The electronic computer has something more like imagination than like memory because memory is the faculty of recognizing things in imagination as belonging to past. To the past. That's how memory and imagination differ. But they don't bother about these things. It has a memory, and then they syllogize, understand. You give them two premises and they draw a conclusion.

The point is ~~they~~ the machines don't know they're doing this, and they don't really do it either. To begin with, the electronic computer -- you can call it a machine, but to say A) this computer here -- the word "this" -- this demonstrative "this" -- it must already be taken in an analogical sense. It's not the same as "this man" or "this horse". When you say "this" computer or "this" house -- "this" is used in a sense that it's improper as compared to the first. Well, we can't get around it. Because the computer's not somebody. It's all kinds of things, put together in a certain way. So it's like saying that this house is an assemblage of stone, mortar, wood, what-not. And iron .....

Now this is anthropomorphism in the improper sense of the word. Yet we can appreciate all the achievements of science without this interpretation of the achievements. Which is what I tried to show in the ~~How of the~~ Holmes Universe, by the way.

Now let's get back to our chief subject. The Renaissance was characterized by still another type of humanism. The humanism that I've just talked about began, say, with Nicholas of Cusa remotely, and then through ~~Giovanni C.....~~ Giordano Bruno, but took definite shape -- the scientific humanism took definite shape with Galileo and on

through Descartes and even further, but Descartes is a high point for the reasons that I've just given.

As I say there is still another type of humanism quite different from that of science. The humanism of the literae humaniores and here you think of the great Renaissance men in literature. There is certainly a proportion between say the writers of the Renaissance and the sculptors, and the painters. There certainly is. But we're going to think of the literae humaniores here. Something similar might be said of the other.

It is often said that the spirit of the Renaissance moved away from the supernatural and even from the divine, and returned towards the purely human. And that the Renaissance was anthropocentric -- centered on man. If you want to get -- if you want an instance of this interpretation, look up the article in the Encyclopaedia Brittanica, at the word "Renaissance" and you'll see. And most of the books that I have referred you to in the list of books -- I don't know whether you have it or not, but they mostly -- most interpret the Renaissance in this way.

This is, I fear, a superficial view of the Renaissance. What those who pursue the literae humaniores were after was the moorings we talked about the other day. Well, why don't they get back to things that we know first and can express and even express very well. The learned men of the late Middle Ages had lost them. There seemed to be no contact between what the philosophers were talking about, no relation between the philosophers were talking about and the things that everyone knows. The prior things -- those things about which, Plato by the way -- I must go into this a moment. Remember Plato - Plato's Myth of Reminiscence. Now I don't know whether he considered this to be a mere myth or not. That's a moot

point that is of no interest to me. What I do know is that if taken as a myth, it is a marvelous one. The Myth of Reminiscence. That is, there are certain things that we know, and we know them with great certifude. With great certitude. Basic notions, some of which I've mentioned. We know them. On the other hand, our experience is so precarious, and the difficulties that may be raised about them -- difficulties which call for detailed justification of this -- are such that we can't justify them and yet we're certain. Where did this knowledge come from? It seems that it couldn't come from experience. And so Plato says in this Myth -- or rather in this passage in the Meno that I interpret as a myth, our mind or our soul must have had an existence prior to the present one, outside of matter, when it was faced with the naked truth. Now, this knowledge has been obscured by the incorporation of the soul. Now dependent upon the sense, and all the senses can do for us is somehow awaken into us the memory of this knowledge that we once had direct.

Now if this is taken as a myth it is marvelous. Actually in order to explain the same thing we would say that there must be in our mind a power that is not dependent upon the things, that is relatively prior to them and this illuminates the things that we know, one which we call the agent intellect. But øs of course, this is a little more involved. The myth is easier to begin with, inasmuch as if we say -- by the way, a myth is always of course, a lie. But there are good lies. I mean, I suppose I have to explain to you how a false example is sometimes better than a good one. A true one. Remember I told you that the other day, and several asked me to give an instance. I'll give you an example

of -- that is something false and that can reveal more than a true example. And I'll give you an extremely concrete taken from Aristotle's Ethics. The exemplum of Milo. Aristotle has to point out the difference between the ~~meaning~~ mean in temperance and the mean in justice. The mean in justice, is simple. The price of butter is 75¢ and if you want a pound of butter you have to pay 75¢. Whether you like it or not. It has nothing to do with your passions. As a matter of fact, your passions may make you unjust. But in the case of temperance, dealing for instance with food and drink -- where is the mean? Is the mean in the thing itself? No. It's the mean of reason. The mean is to be taken from the one who practices temperance, and that one has to take into account all kinds of circumstances. What is his capacity for food, for instance. Well, if his capacity is such and in order to do well, to act well, to have the energy that he needs, he has to eat so much more than another person, that's fine. He's a temperate man. And here comes Milo. Milo was a temperate man, ... He ate a whole steer a day, and he was a temperate man. There is no such man who could eat a whole steer a day. Do you see the point? It makes the point precisely. It manifests it. You get it. If he had said, a man could eat 15 pounds of meat a day, that's possible, and be temperate. That's quite possible. But that's not enough. If he said a whole steer, that makes it really plain. That's a case of a false example that is more illuminating than a true one.

Then there are many others. St. Thomas is full of them because nearly all the examples that he takes from Aristotle's ~~Theory~~ De Caelo, and that appear in the Summa, and which makes people

believe that now these section of the Summa must be thrown out. Of course that's silly. Now we know that they're not true. But they're still good as examples. Now take as an example one that he so frequently uses, the theory that celestial bodies are utterly incorruptible and being composed only of matter and form without privation. This helps us to understand. It's not true but it doesn't matter. Do I make my point? You're not disturbed by this. Nor I by Milo, ~~because his~~ whose lieutenant ate only a sparrow's wing a day and he was immoderate doing so. That's another exemplum. He was intemperate. Oh, he licked it and he locked it. He couldn't take much.

Now, where are we? How wonderful then for the Renaissance men to be able to get back to the languages and the arts of language which had achieved such perfection, on the basis of what the Idiota -- remember the function of the Idiota in the Renaissance literature? That means the illiterate men. Doesn't mean the idiots. It's latin for illiterate. Uncultured. The coarse man. ~~Which had been achieved — which~~ These art had achieved such perfection on the basis of what the Idiota knows and what the learned ignorant do not. ..... Is that plain. You see what I mean? Going back to the Greeks, especially to the Greeks, who had expressed themselves so perfectly and who had said all the basic things in philosophy and prior to that, already in poetry. And said it so well, without being savant. And these are the first things. Let's get back to them. There's nothing wrong with that. It's not going away from the divine. It's realizing there is actually a kind of humility involved here, and inasmuch as we go back to the simple things and recognize that we cannot broach great difficulties headon,

but we must approach them gradually, by way of manuductio. Be lead by the hand, and the hand that first takes our hand is way back in the things that we know first. Without being able at first, as children at least, to say much about them. But the poets can do a tremendous amount of work with these simple notions and these simple words. Tell me how much. What did I say that for? I was thinking of something simple and I said it. It's from Antony and Cleopatra, Shakespeare, where Antony says that he loves her, and Cleopatra says "Tell me how much." Typical female. Got to repeat it and repeat it and it's never done. Ave Maria. She is the woman.

Of course, the artistic Renaissance did comprise those who craved and actually attempted a return to highly cultured pagan antiquity. Especially the Greeks as I've just said. But even these men bear witness to what a man needs as a man. After all, we are first of all beings. The supernatural order does not destroy our humanity. It does not give us a new intellect. It's the same old human intellect that is going to see God when it does. It is human nature that receives grace. Grace does not replace nature; does not destroy it, but perfects it. But you must have an intellect first of all. And even in order to understand the faith, you have to understand the words that express the things that you must adhere to. Now if we must have a mind that -- grace does not replace a good formation of the mind. Not at all. As matter of fact, in the order of theology, you must have a well-shaped mind, trained in grammar and logic, and in the natural sciences, if you are to respond to fides quaerens intellectum. The faith that seeks understanding.

Now if you look at the Renaissance in this light, it's all

for the better. People had begun to start everything halfway. Let's go back to the beginning. We do not neglect the halfway, but the halfway is a halfway. It's not the beginning. It's the middle. And if we cannot go to the beginning, we'll never reach the middle and never the end.

There is first the world of ordinary experience with confused knowledge, which is not only very human, but which in the mind of a genius takes on death and accomplishment -- and this is all wrong -- this sentence here -- takes on death and becomes accomplished even polished. No, it's all right. I forgot punctuation. Takes on death and accomplished even polished expression. With the possible exception of Dante and Goethe and Milton?, all great poets have worked with these data. Dante and Goethe and Milton? use a tremendous amount of philosophy and theology and this is fine, but you have had very great poets before and after who were great and wrote great poetry, without this specialized knowledge. Shakespeare was a Christian and knew a great deal of theological truths, and so on. And he refers to them. He's very profound. But he does so in such a way that the average cultivated spectator understands it, without ever having studied theology. He picked it up from his Catechism I suppose, and then from experience, which he himself has never been able to record, but he recognizes it. And just to show how much can be done with how little to start with.

Now this is all for the good, and men such as Erasmus, Thomas More, understood it that way. Except that Erasmus likes to throw heavy stones at people too. Which is understandable. ..... The Renaissance with Galileo, the mathematicist on the one hand, and the literae humaniores on the other, were

humanistic in two difference senses. And here I ~~will~~ may explain. What is it. I forgot it. I'll explain it later when the question comes up. Because I developed a point there which carried me so far that I can't find my moorings now. There are positive elements, that is, of the mathematicism of a Galileo and the literae humaniores of an Erasmus. The positive elements can be readily reconciled and they are in fact so reconciled in perennial philosophy, but of course that remains to be shown.

Now, here is the end -- the bell is going to ring in a moment I'm afraid. I'm going to read to you rapidly -- as it stands here. These are just notes. I'm afraid we'll have to skip the 19th Century. It was a very strange one. ~~They~~ Simone called it le stupide XIXe. But this is not the whole truth. The scientific achievements were not stupid, though in the main their philodophic interpretations were -- that is, the interpretations put upon them were, such as the determinism of ...?... for instance. That's one thing. Moreover, we must not forget the great poets. Men such as Mallarmé and Baudelaire who were authentic poets, not to mention their English contemporaries. We also had very great poets. Keats for instance was a very great poet.

And then I was going to say a word about determinism in the 19th Century. It had grown out of previous centuries. It was first of all an extrapolation of Newtonian mechanics. That is, extending Newtonian mechanics in an exhaustive way to the universe as a whole. And then show that curiously the theory of evolution that begins also in the 19th Century -- the one at least that began in the 19th Century -- especially with Lamarck and Darwin, but especially with Darwin, seemed to turn in an utterly different direction inasmuch

as the process of evolution was due to natural selection and that natural selection took place at random. So that everything seemed to be due to chance. This is very interesting because it takes us way back to Democritus who held at once that all things are subject to deterministic principles, utterly determined, and at the same time, that all things happened at random and by chance. Strange. I was going to try to explain it. But the time is up.

Now meantime, the scientific and the humanistic are not reconciled in our teaching, but they there are encouraging signs of such a possibility in the near future, and this I could show you and I will do so perhaps tomorrow in discussions by giving you some passages from outstanding physicists especially, more so than biologists. Why? Because physicists know their limitations as a science much better than they who are engaged in a study of much more complex phenomena on the whole.

And then I was going to draw a general conclusion as to what could be done. Should be done. You should return to the old idea of Montaigne throughout our education. I told you from the very beginning that the trouble with us is that we start everything halfway. Everywhere, in every single field. To begin with, in grammar. We do the same thing in mathematics. We clutter the minds of our students, of our little children, in class. We clutter their minds with bakers and butchers and candlestick makers, and not with numbers. Get what I mean? When my little children come to me with their problems in arithmetic and there is a butcher involved, or especially a plumber, I give up. Because you've got to calculate how much water there is in this tub, then I wonder what is the temperature of the water and the rate of evaporation, and so

on, and I get all lost. It has nothing to do with mathematics. And so on.

I'm going to put on the blackboard a word - manuducho - which comes from manus and ducere, - manu, the ablative - hand and ducere - lead - and lead by the hand. You take a child by the hand, or someone who doesn't know the way, and you're more or less an adult, and you say "take my hand and I'll lead you there." That means that you have to stoop down and take this little hand and take it for what it is, and carry -- and bring this person or this child to where you want it to be. But you must start from where it is. You can't say - come and jump. No. You go down to it and take its hand and then you lead it. Now, St. Thomas uses this term in connection for the instance with theology. Theology will be dead if we drop manuducho. Why does a theologian use philosophy? Because our mind is so feeble that we must have recourse to tools, to instruments, to orders, that add more proportions to our mind, and thanks to these tools, philosophy being one of them, and ancilla, notice this means a kind of slave, ancilla take an ancilla, take it by the hand and she -- although ancilla our inference is superior to this, this ancilla will be able to help you. You need this kind of manuducho in order to proportion yourself by the means proportionate to us, to truth that lies beyond our adequate grasp altogether and which cannot be manifested except by means that are proportionate to our minds. That's why the theologian uses philosophy, but the because the theologian is often historically speaking an extremely proud man, he will have to temper philosophy, because I have never met contempt for philosophy as much as in a theologian. I have met with contempt for philosophy among scientists, but nothing compared to the contempt I've found

amongst theologians. You'd think that they were incarnation with the HOLY Spirit Himself. We need philosophy not because theology needs philosophy, but because theology *it* as it exists in the human mind needs philosophy. Because our mind needs ~~manu ducco~~ manuductio. And this begins in childhood when you teach a child to talk, when you teach a child to walk, you begin with walking. Begin with walking. You teach a child to walk. That's the first meaning of ~~manu ducco~~ manuductio. You take him by the hand. This must go on throughout all education. We must start from the things more known as to us and move gradually toward those things that we know less, and which are in themselves far more intelligible. If we start with the things that are in themselves more intelligible, we would proceed as if we were angels. We're not.

That's what I was going to develop. The bell rang? I didn't hear it.
