An Introduction to Philosophic Problems

This is the first in a sequence of three courses that approach the problems of philosophy by way of the original location of the problems. That is to say, in the first course we will consider the problems that have their origin in the subject matter which is usually called natural sciences, in the second the subject matter which is usually called social sciences, and in the third the subject matter which is usually called humanities. I put “usually called” in because I suspect that one of the fundamental philosophic problems of our time must be a reconsideration of what is usually called the liberal arts. All during the Middle Ages they were set up in terms of disciplines, like grammar, rhetoric, and dialectic. From the seventeenth century down to the middle of the twentieth century, they’ve been done in terms of subject matters, like English, French, German, biochemistry, mathematics, and so on. I suspect that today, with alterations that will become apparent as we go along, neither subject matters nor disciplines will be the desirable way to treat the problems.

Let me, therefore, in this first lecture try to describe the purpose as well as the organization of the course. The purpose of the course is to provide an introductory treatment of philosophic problems. It is an extremely difficult thing to do. A normal way in which one examines philosophic problems is to provide the student with the “true” way, which is the way the professor tells us he approaches philosophic problems, and then, by a natural impetus, with all of the ways that are false ways, including, of course, the ways that the great philosophers went through. When I was young and took an introductory course in philosophy, all the errors had been committed by Aristotle; at present, by an odd change, all the errors in philosophy have been committed by Descartes. All of the truths used to have been stated by Plato; all of the truths now have been adumbrated or approached by Hume. Consequently, I shall want to avoid this approach to philosophy. I have a philosophy, it’s a good one; when you’ve reached the graduate stage, you may be able to appreciate it and see that it’s the true one and all the other ones are false. [L!] But this is not the way to
introduce you to philosophy. Nor is it desirable to take you through the kaleidoscope of the different approaches. They’re each awfully good; and just as in the approach above the first thing you would learn would be to refute the philosophers, so in the second approach you’d discover a new truth each successive week, which would be the basis of tension and uncertainty because last week’s truth was no longer true, and eventually you wouldn’t be quite sure why you were studying philosophy. Then, too, there are problematic approaches which state persistent problems of philosophy. This approach is rather disconcerting because it usually turns out that the persistent problems of philosophy are rather hard to find in any of the great philosophers unless you do a lot of distorting.

Therefore, what we’re going to do is something different than this. We’ll make certain definite assumptions; most of them I will try to state today and then we’ll forget about them. One of the assumptions that we shall make is that even though the way in which philosophy keeps its respectability today is to become as technical as any other subject and, therefore, as uninviting as a good technical subject would be, we will assume that the problems of philosophy all have their origin in other fields or in our experience. If you take any problem—a problem of the natural sciences, of the social sciences, of aesthetic experience, or even a problem that you encounter when you deal with practical life, including your newspaper—and push it far enough, it is a philosophic problem. “Pushing it far enough” means only that you push it to the point at which the regular procedures that you use in its solution no longer hold. Even in the most solid sciences, if a well-established alternative hypothesis is presented, then you’re on the edge either, if it turns out to be correct, of a revolution in science or, if it turns out not to be correct, of a principal shake-up. Or, notice that as you go up in any well-organized subject matter, you first learn how to do things—for instance, you learn to add and subtract and to resolve simultaneous equations in mathematics. Then you begin to examine the assumptions in terms of which you do these methods or establish them—you very seldom look at the history; that’s quite irrelevant—and when you get around to the assumptions, at the last point you discover that there are alternative assumptions. Therefore, if you can advance far enough, you find that the things you’ve always done aren’t necessarily done this way when you reach a study of the principles of mathematics on philosophical grounds.

I spent the last few weeks in Mexico City, where they were having an international congress of philosophy, and on one occasion a special meeting was called between the delegations from the Soviet Union and the United States. It was done under good circumstances: there weren’t any reporters present, all of the reporters were outside; therefore, there was little danger of making a headline, front-page story, which, even if accurate, would still have been inconvenient. [L!] The general idea was to see what we could get going in talking about philosophic problems. For the most part we asked questions, but the Russians also asked questions. Here is one of the questions that was asked. A quotation was read from one of the Soviets’ papers given at the conference in which the writer remarked that once a man had mastered the principles of dialectical materialism, he was then free. And since it was like a rhetorical debate, we replied, If the man was now free, why was it that there wasn’t more difference of opinion in Soviet philosophy? We thought it would be rather encouraging if occasionally some Soviet philosopher said, “I will demonstrate by the principles of dialectical materialism the existence of God”—or other examples of this sort—if, in general, a word was said for pluralism. Well, the head of the Russian delegation swept that aside with a jest. He said, “What’s the advantage of pluralism? If there’s one truth, what’s the advantage of having other statements that are false? Nobody questions 2 plus 2 equals 4.” In the course of the ensuing discussion I tried to make this point, namely, that in terms of the assumptions which you set up, 2 plus 2 do equal 4, but what about the circumstances—and there are many without fanciful elaboration—in which 2 plus 2 do not equal 4? How do they fit in, how do you deal with them, and, in general, how do you raise the question of fundamental differences? We didn’t succeed in getting this question discussed. Incidentally, since I am telling this as a Cold War story [L!], I don’t want you to take this as necessarily discouraging, because I suspect that if I were sitting on the other side of the table, the prejudices of the Americans would have to be quite as astonishing and part of the problem of discussions which can get going when one deals with issues that can be identified as philosophic problems. It’s that identification that I want to deal with now, but I will also be doing it throughout these lectures. Therefore, this is just an initial step.

If it is the case that you can push any problem to the extreme in the variety of ways that I’ve tried to indicate, where it’s merely taken out of the normal context by which you will unreflectively resolve it and your resolution will be accepted, if at that point you are engaged in a philosophic problem, then it’s clearly the case that we’re involved, all of us, in philosophic problems, examined or unexamined, whenever we deal with scientific questions, with practical questions, with aesthetic questions. The course is organized to run through that sequence, namely, the three kinds of questions, not necessarily assuming that they’re the same or different, because in this very statement that I have given we’re involved in a philosophic problem: are the problems of science, of social science, and of aesthetics the same or different? Well, there are good philosophic arguments that present the position that they’re same. If they are the same, it may be that they’re all fundamentally scientific, and so we want to talk about applying scientific methods to resolve them. Or it may be that they’re all fundamentally practical; this is the assumption of pragmatism, a form of philosophy, and of many others. Or it may be that they’re all fundamentally due
to insight, innovation, and originality, the creations of outstanding geniuses. In this sense, the sciences as well as the social sciences are humanistic achievements, achievements of the power of man—the *Mathematical Principles of Natural Philosophy* of Newton is a great work, it’s even in the collection of the great works—and, therefore, the humanistic approach could be fundamental.

You can raise, then, the question, Which is fundamental? Once, instead of lecturing in the first meeting of the course, I opened it as a discussion, and there was an equal ease to be made for all three. In other words, at the point you’ve arrived in your education, you’re already making metaphysical assumptions about the nature of knowledge, the nature of principles, the interrelations of all knowledge. There were those in the class who held that science is cumulative, that it gradually moves in on the regions of doubt. Therefore, when the scientific method is applied—and the Romans tried to do it; it was the main idea of Locke to apply the method of Newton to human nature and human knowledge; this has gone on down the line—when the scientific method is applied to all of the subjects, you have a resolution of philosophic problems. You’ll probably discover they’re no longer philosophical, but they’ll be problems to be solved. Then there was another group in the class that took the position that this was an obviously old-fashioned approach, one based on the supposition that there’s a world out there which we discover. Science in the seventeenth century was different from science in the twentieth century; the facts are different, the theories are different, what you can do is different, the climate of opinion which makes the possibility of scientific or technological innovation is different. This occurs to such an extent that in the middle of the nineteenth century several men discovered the principle of evolution. Or take the discovery of differential calculus: two men discovered it simultaneously, and it’s hard to tell whether Fermat or Descartes is responsible for seventeenth-century mathematics. Therefore, what you must think of is social circumstances, cultural interrelations; out of this you can get the scientific knowledge. As a matter of fact, our friends the Soviets hold this position. There are two sciences, if they follow Marx: the science of nature and the science of the history of society. And according to Marx, it is the science of the history of society which is prior, in the important sense that until mankind has reached a point in which most of the expropriations are removed, it indulges in ideologies rather than science. It is only when you reach the last point that the science of nature can begin to emerge, and the socialists and the communists dream of this.

Or, finally, there is the obvious possibility in dealing with all of these approaches that it’s a mere fiction to talk about an outside world which somehow contains us and that it’s a kind of vague generality to talk about the character of ages and of times; rather, what we know, and, therefore, what is, depends on the insights, the innovations, the creations of great minds. Before Galileo, nobody really understood motion in terms of acceleration; in one sense, accelerated motion as an equation that could be written in terms of time and space to deal with problems of gravitation began with Galileo. Likewise, the world was changed with our understanding of the world as a result of the innovation of Newton. The same thing holds for the innovation of Einstein. A year ago the University of Chicago Press published a book by a man named Kuhn about revolutions in science. In it he differentiates between two kinds of scientific change: one is the kind in which new ideas are introduced, and the other is the kind in which, following a paradigm, you proceed to deal with ideas that fit within that paradigm. Newton created a great paradigm; it took a hundred years to fit all of the facts of planetary motion and motion on the earth into the paradigm. Laplace believed it was possible to complete this job; he called his work, in fact, *The System of the World*. About that point, the paradigm became encrusted, particularly by the introduction of other kinds of dynamics, including hydrodynamics, electrodynamics, and the rest. The discovery of entropy, the discovery of equations in which $T^2$ does not appear, primarily started on a new paradigm. If you take this approach and use the large sense of “humanistic” that I’ve spoken of—that is, the humanities are the works of man, the creations of man—then, whether you think of Michelangelo and his creation or Newton and his creation, they are humanistic in the same fundamental sense.

There are a variety of ways in which philosophic problems can be studied on the assumption that I’ve just stated. I won’t trouble you now by telling you what the other varieties are, but as you go along, some of them will become apparent. The way in which we will do it will be to take fundamental concepts that appear in each of the three fields that are taken up in this sequence of courses. For this course, the natural sciences, there will be four concepts: motion, space, time, and cause. I think that if you take these four and think about them a little, you will see that even with the names you’re involved in a philosophic problem because, of these four, there’s only one which you have directly experienced empirically. If you have never experienced change or motion, you would have no idea of space and you would have no idea of time. Moreover, in the case of cause you have a concept which many recent philosophers have denied holds intelligibility in existence, and there are philosophers of science who question that the concept of cause need even come into the picture. But, then, you can carry it all the way back. Almost at the beginning of the philosophic enterprise there was a philosopher who questioned the reality of motion; his name was Parmenides. He had a long sequence of followers; and one of them, Zeno, wrote a series of paradoxes to indicate what difficulties you get into if you assume motion. And the paradoxes of Zeno have been discussed ever since, including a very ingenious treatment of them by Bertrand Russell in the interests of the philosophy of science, following the history of philosophy in terms of the answers to various considerations of the paradoxes of...
Zeno. Now, the important thing is not this mere semantic point that each of these four words or terms has many different meanings but, rather, the point that the different meanings have great importance in the development of science. It is not the case that time, space, motion, and cause are entities to be examined in which science has proceeded cumulatively; rather, it is the case that a succession of oppositions among these ideas has led to a series of hypotheses which raised new problems which, in turn, determined the history of science bearing on motion. This latter process, I think, exemplifies my point fully.

Let me give merely one example of the last statement. I think the scientists make use of these alternative approaches much better than the philosophers; the philosophers tend to a kind of natural dogmatism even with their skepticism. A volume in The Library of Living Philosophers was issued a number of years ago on Einstein. You've probably seen the volume; it's an excellent collection of both scientists and philosophers. The scheme of the volume is that the person to whom it is dedicated, in this case Einstein, writes a kind of intellectual autobiography; next a number of his friends, associates, or strangers criticize him or praise him in a series of essays; then, finally, he writes a reply. These essays include a group of men—Bohr, Born, Schrödinger, de Broglie—who had had conversations for a period of some thirty years. In his essay Bohr points out to Einstein, who had laid down the fundamental principles of earlier quantum mechanics, that he and Bohr differed on the nature of the principle of indeterminacy, and this formed one of the basic differences the two men had. One held that it was in the very nature of things and indicated a state of affairs. The other, Einstein, argued that it merely reflected the state of our knowledge; just as in molar dynamics we had uncertainties until we got straightened out, so, too, eventually it would be possible to write a general field equation for the phenomena of quantum mechanics which would remove the indeterminacy. Einstein was convinced of this to the end of his life; Schrödinger for a time was; de Broglie always was. Notice, this is at opposite ends of the spectrum, and for thirty years this discussion went on. Each of the two camps was making contributions to quantum mechanics, yet each could take their position as a hypothesis for further work. They would meet, for instance, after two years when one of them had discovered something—as I say, the essays are full of examples of this—and would say, “Look, this proves my point.” Then the other would say, “This is very interesting and, doubtless, true. Let me tell you the way in which it works on my hypothesis, which takes me a step further!” So the two hypotheses could both move on. And the peculiarity of this field is not that Einstein was convinced that he could write this general field equation. Toward the end he was convinced that he had written it, but he thought the establishment, the demonstration, that the equation was one which held was in fact so elaborate that the real difficulty lay here.

My point is that on all of the fundamental problems which are faced in the treatment of motion and, therefore, the concepts of time, space, and the rest, you have the possibility that there are alternative approaches which are in fruitful relation to each other. This, then, is the assumption that we shall be working on until we are shaken out of it. Let me take merely one more example of a very broad character. From antiquity to the present, physical space has been interpreted by different people alive at the same time as being vacuous, that is, without any physical effects on motion, and as being dense. Descartes, for example, had a dense space where vortices would affect motion. Well, let me go a little bit further. At the time that Descartes wrote, it had not yet been discovered whether or not light was a motion, that is, took time, or whether the transmission of light was instantaneous. Descartes was convinced that it was instantaneous; and in his letters he remarked that if it were proved that light is a motion, then his theory of vortices would be wrong because under such circumstances light could not travel in a straight line, which he assumed it did. Toward the end of Descartes's life, Roemer demonstrated that the transfer of light took time. Descartes was so far along that it isn't clear whether he kept up his theory of vortices or not. Now, take this down to the twentieth century and make the same hypothetical proposition, namely, if space is dense and not vacuous, the path of light is not in a straight line. We sent an expedition to Africa to find out whether this was the case or not, and we discovered that the path of light under the circumstances indicated was not in a straight line but some bending came in. Consequently, the same hypothetical proposition could be used to overturn a doctrine or to establish one. The amount of bend is very slight, and in the seventeenth century Descartes didn't have a chance of discovering it. But it is in this fashion that fundamental ideas or theories—I am not talking about facts, now; facts are interpreted by a theory—basic ideas are in an opposition which is constant, not dangerous; rather, they are productive of discussion, inquiry, and progress.

What is the nature, then, of a philosophic question? I've already tried to answer the question, Why does one study philosophy? One studies philosophy in order to treat explicitly the problems that you're involved in even when you don't treat them explicitly. I've tried to show, in the second place, that the solution of a philosophic problem is not indifferent to the original problem. It should be relevant to the treatment and solution of that original problem, not on the factual side, not on the side of the scientific method you proceed in, but on the side of formulating more clearly what the issue is, what the problem is that is set up. It is, when properly used, the basis for the formation of a hypothesis.

Is there a cumulative process in this in philosophy? I'm doubtful whether, in the strict sense, there is any cumulative process even in the sciences. Still, in philosophy there could be a cumulative process, though not in the sense of
progress to a single philosophy. In general, I think it can be shown that ideolog-
ical agreement on one philosophy by all mankind is neither possible nor, if it
were possible, desirable. It would probably put us into a kind of intellectual
sleep in which we need do no further thinking; and, consequently, there will
not be, I hope, a cumulative process toward the discovery and establishment of
a single philosophy. On the other hand, I would be quite willing to argue that
this does not yield a relativism. If there is one truth—and this seems to be
highly probable—this does not entail as a consequence that there's only one

The situation that men are engaged in, both in
their theories and in their practices, is infinitely rich. Therefore, the interrela-
tions that would be involved would be such that even when they say the same
thing, the same words, it is frequently demonstrable that they don't have the
same meaning; and when they say contrary things in terms which, if they were
defined the same way, would be contradictory, they don't always differ from
each other. This, as I say, is not something that seems to me to be sloppy or
unusual; it is the common procedure in our most exact and in our loosest think-
ing. Therefore, in the philosophic process it is this that I would want to exa-
nine; and the cumulative process in philosophy that would seem to me to be
desirable is one in which the circumstances are set up for a continuing plural-
ism. You have uniform conditions and circumstances within which you can
operate; then, within the circumstances so set up of common interest as well
as tolerance of differences, you can then raise questions which might lead on
to the formulation of answers which, in turn, raise new questions. The progress
of knowledge—and this is the last dogma that I will enunciate today [L! ]—is
not one in which, truth being finite, you gradually answer a given number of
problems and approach the point at which all problems are answered. The
progress of knowledge is, rather, that with the solution of any problem, a large
number of unsuspected problems arise; and, therefore, the more problems you
answer, the more problems you have. This, I suggest, is not discouraging;
rather, it would indicate that as thinkers, you have a future. [L!] The more
progress your elders make, the more problems you will have to proceed on.

How, then, will we approach the treatment of philosophic problems? I've
tried to indicate that I don't want to make any commitments which, through
the definition of philosophy, determine philosophy in one direction; I want, rather,
to locate the problems which are worth consideration. Throughout these lec-
tures I will be using a matrix, a matrix which can be stated in terms of cognates,
and I think that probably the best answer to the question that I've raised would
be to introduce you to this matrix. Suppose we begin with immediate experi-
ence, the knowable, the knower, and the known make (see fig. 1). Since this is
a matrix, the terms are variables; therefore, I cannot tell you what they mean
as they stand, but you can lead out of the matrix the various problems of philos-
ophy that we can deal with. So let me use it to differentiate, by taking in succes-
sion each one of the terms as fundamental, what throughout these lectures I
shall want to call four modes of thought.

Suppose we take knowledge as fundamental. There are systems of philoso-
phy which hold that the basic characteristic of reality is that it is through-and-
through intelligible, that to be is to be intelligible, or even to be intelligent, that
the fire of the world is reason arranging all things. Plato puts it very clearly:
what is most truly is the ideas. And the ideas are not things in the psychological
mind; they are the conditions of reality, conditions of reality which are such
that the true man would be the formula of the man to which all existing men
approximate. You notice that if this is the case in such a philosophy, the other
two systems are assimilated to knowledge; and assimilation is the mode of
thought that I am referring to here. The knower knows when he approximates
to the dialectical knowledge which is above mathematical knowledge but is
similar to mathematical knowledge in kind. What he knows, that is, that part
of knowledge which is known, is true insofar as it approximates, as a result of
his consideration of the relation of this data to the eternal forms, to the eternal
forms. And things, any event or object or experience, are knowable insofar as
they are seen as specific applications of the equation. You'll notice that the
mode of assimilation, assimilating all together, has a tendency to move upward
into the realm of transcendence, and transcendence is one of the favorite words
of this manner of philosophy.

Suppose you go in the other direction, begin with the knowable, and we
ask the same question, What is knowledge? Well, obviously, knowledge is an
approximation to what is the case, not what is the case as you perceive it but
what is the case underlying it. The atomic theory is one excellent example of
this process. From your sense experiences you eventually form a theory about
the irreducible elements that are put together to form the world; and your mode
of thought, therefore, is construction. Out of parts, however constituted, you
build up the rest of the world. And if transcendentalism is a favorite word in
the approach which begins with knowledge, physicalism is a favorite word in
this approach. You'll notice, the same process is here operative, namely, if you begin with the basic structure that knowledge approximates to, then, obviously, the knower is likewise an example of those relations: thinking is just another term for motion, atoms in the brain are a little smaller and move faster than other atoms, but the knower would be knowing and not engaging in illusion or passion if he stuck to his own nature. The known is limited to what it is that you know about things as interpreted by construction of the atoms; that process will remove emotion, passion, and pleasure. And, finally, knowledge is the body of what you construct.

Suppose we move now over to the known. The position that is taken when you make this fundamental is one of skepticism about transcendental realities which are above experience and to which we approximate and equal skepticism about underlying realities into which you bust everything. What you say, rather, is that you always begin in a situation in which what you can do depends on what you already know. Thinking starts, you even come into consciousness, when a problem is presented that isn't taken care of. This is true even in ordinary Dewey, a fine example of this approach. You walk across the street without consciousness; but at a given moment you stumble, you have a problem. You become conscious—a trivial example; maybe if I thought, I could come up with a better one. Obviously, the thing to do now is to get out of the problem: either, if you have stumbled and fallen, get up again or avoid stumbling in the future. You entertain an hypothesis, you put it into effect, you solve your problem, and you move on to new problems. You'll notice, there is no fundamental reality, there is no basic physical part. There is, however, a series of contexts in which problems arise; and thinking is fundamentally the relation of the thinker to his context, psychological, social, and cultural. This mode of thought is resolution.

Or move over to the fourth position, the knower. There are philosophers who say that all three of these other approaches are nonsense. There aren't any transcendental Ideas, there aren't any indivisible atoms, there aren't any substances that involve problems. What you have, rather, is the individual and his perspectives. The individual with his perspectives obviously generates the known; he also generates the possibilities of further knowledge; and he obviously generates the knowable. The existentialists today, when they talk about man the maker of philosophy, existentialism, humanism, are talking this way. They say that you create yourself, your knowledge, other minds; you're responsible for them. This need not be looked upon as a skepticism or a relativism because, obviously, you have many knowers who either translate into each others' terms or battle each other. And, consequently, as a result of that, all of these other terms take on their various configurations. This is the mode of thought discrimination (see fig. 2).

Let me give you a brief glimpse of where we will be going from here. Notice, there are four modes of thought that I have spoken of. There is the mode of assimilation, bringing everything together; the mode of construction, building knowledge out of its parts; the mode of resolution, dealing with problems; and the mode of discrimination, the separation. Each of these modes has various applications. If you take the whole four, one simple way of schematizing them on something like the matrix above is to recognize that there are four loci at which the four have their place. There are principles, both principles of thought and principles of the beginning of processes; they are the starting point. There are methods, methods either of following through on your principles or methods of doing, acting, and moving. There are conclusions, the final step. In addition, there are individual terms or things that enter into the process. It's an exhaustive list, you'll notice, because your principles, the first, organize sets of terms or sets of relations; your methods relate them in discourse, and for discourse or proof you need a minimum of three terms; your conclusions are propositions, and propositions are two terms; and your basic selection of terms is of one term. What I propose to do, consequently, is to take the four modes of thought that I've been talking about and apply them to the selection of individual terms, the interpretation of pairs of terms, the method relating sequences of three or more terms, and the principle organizing the sets. Out of these I hope to deal with the problems of motion, space, time, and cause.

Next time I will go on in this lecture process and carry further the schematism that I've talked about. In our first discussion, we will deal with Plato's Timaeus. Read it carefully. I shall be interested in finding out what you think he is saying. Motion is not mentioned explicitly until 57d in your selections, but you will find him talking about "becoming" before that, and becoming is related to motion. So watch for it.
LECTURE 1. An Introduction to Philosophic Problems

1. McKeon actually begins his lecture with a few comments regarding course changes in the College taking effect in the fall of 1963. In what follows below, “OMP” stands for “Organizations, Methods, and Principles of Knowledge,” a yearlong course which began as “Observation, Interpretation, and Integration,” known as OII (a difficult course, which campus humor soon dubbed as “Oi, Oi, Oi!”). OII was created to be the fourth-year philosophic capstone of the educational program in the “Hutchins” College of the 1940s. For a discussion of OII see William O’Meara’s account in The Idea and Practice of General Education: An Account of the College of the University of Chicago by Present and Former Members of the Faculty (Chicago: University of Chicago Press, 1950), pp. 232–45 and 253–55, wherein he describes McKeon as “the principal author of the course, as regards both content and method” (p. 234fn.). McKeon begins the lecture here as follows:

McKeon: With the changes occurring this fall, this course is now called Ideas and Methods 211. It used to be called 201. The change is due to the fact that, given the alteration both of time and circumstance and of the relation between this sequence and the OMP sequence, it seemed desirable, since both are changing in content, to change the name. The old OMP sequence is now 201–202–203, which will receive the old name of this sequence; this sequence is now 211–212–213. They are not related as prerequisites to each other; they’re related, rather, in that they approach the problems of philosophy in a similar way. The 201–202–203 sequence does it in terms of a succession of problems, that is, the problem of existence; in this sequence, we do it not by regions of problems but by the original location of problems.

2. In 1979, when asked about this point, McKeon replied that one example he was thinking of was from chemistry, where the combination of equal volumes of two different liquids does not necessarily produce a precisely double resultant volume.


7. While an assistant at the Royal Observatory in Paris from 1672 to 1679, the Danish astronomer Claus Roemer (1644–1710) made his initial discovery that light travels at a definite speed. Descartes had died earlier, in 1650.

8. At this point in his lecture McKeon makes a few comments about some of the course’s mechanics.

McKeon: The readings will include a number of mimeographed sheets that I will pass out. I have a finite number of them; and, consequently, in passing them around, may I request the registered students to take them but the auditors to refrain. These are selections from Plato’s Timaeus, where we shall begin. I will give some more sheets out. We will eventually make use of three books which are in the bookstore: Galileo, The Two New Sciences (the Dover Press); Newton’s Philosophy of Nature (Hafner’s); James Clerk Maxwell, Matter and Motion (Dover Press). The course will meet three times a week. I will lecture, normally, on Wednesdays, including the next class. On Mondays and Fridays we will discuss the texts that have been assigned. Are there any questions? . . .