# A History of Philosophy
# 73 19th Century Empiricism
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of our year's journey together through the history of Western philosophy. Namely, four weeks dealing with about 200 years of empiricism, 19th and 20th century empiricism. And just to get the perspective, let's come back to this diagram, which you are familiar with, the intersection of modern empiricism and rationalism of the Enlightenment in the kind of synthesis effected by Immanuel Kant, out of which grew a distinction between two methodologies that have persisted in philosophy to this day.

The rationalism of the Enlightenment was mainly on the European continent, with Descartes, Spinoza, and Leibniz. And the outgrowth of that, as we've seen in Hegel, the existential tradition, to some extent, people like Whitehead. But the outcome is a phenomenological kind of method that tries to look at reality through the lens of human self-awareness.

Now, the phenomenological method continues today, as we saw last week, to dominate European thought, Western European thought on the continent. On the other hand, the empiricist tradition, Locke, Berkeley, and Hume, is mainly in Britain and continued in the 19th century with the three people we're going to be looking at, Auguste de Kant, John Stuart Mill, and Ernst Mach. And the greatest of these is Ernst Mach.

No, take it back. The greatest of these is John Stuart Mill. Sorry, the last of them, Ernst Mach.

John Stuart Mill is the one to emphasize. But that continuing empiricist approach led to an emphasis on the scientific method being universalized for all kinds of human knowledge. Now, whereas then, the way of seeing the world, the lens through which everything was seen for the European tradition, is the human spirit with its creative freedom.

And I think that's a fair generalization, whether you're talking of Hegel or of Sartre or of Dewey, you see. On the other hand, the lens through which the 19th-century empiricists are seeing everything is simply the lens of nature as viewed through the scientific method. And so, the ways part.

Now, to this day, throughout the 20th century, it's fair to say that the dominance, the philosophical dominance in the continent of Europe is phenomenological. Whereas the philosophical dominance in English-speaking philosophy is empiricist. And while perhaps not as imperialistic about scientific methodology as it was in Mill in the early

20th century, still a pretty strong theme that something like scientific criteria should be used in judging all human knowledge.

So, that's the distinction. There are attempts, obviously, to see comparisons between the two, to build bridges. I may have mentioned to you before that there was, in the 1940s, the late 40s, a joint conference between English and French philosophers.

The proceedings of which were published, a volume called La Philosophie Analytique, Analytic Philosophy. And as you try to read it, you find that while the Frenchmen write in English, which is of help to many of us, and the English write in French, they pass like ships in the night. Because they're just dealing with different things.

Or, some five years ago, I was at a conference in Toronto, where there were European philosophers, more Dutch than French, and Anglo-Americans, dealing with the concept of rationality. Same experience. Passing like ships in the night.

Simply because the methodology is different and the kinds of expectations are different. That's not to say that there are not some analytically oriented philosophers in European thought. There are.

Or that there are not some phenomenological thinkers in American thought, shall we say. There are. Those large departments try to have at least one representative.

We have one. Roberts. Except that he has sort of wandered over into analytic thought.

Thanks to his work on Wittgenstein, as well as his work on Kierkegaard and Bultmann. So the situation is there. Now, what I want to do today is to characterize 19th-century empiricism, and we may have to continue with this on Monday, when we will be moving into the 20th century.

Next Monday, we'll be moving into the early 20th century with people like Bertrand Russell, John Stuart Mill, George Ernest Moore, and G.E. Moore. But for the characterization of the 19th century, look at these three emphases. The extension of enlightenment objectivity into, and I've written the hypothetico-deductive method, perhaps to make it a little clearer, into a hypothetico-deductive method.

That is to say, a methodology applicable to science in the spirit of enlightenment objectivity. Rejecting the Kantian kind of Copernican revolution. Now, what do I mean by a hypothetico-deductive method, that phrase? You will find it becomes increasingly familiar.

But the previous enlightenment thought in these 18th-century empiricists had, of course, premises that are empirical generalizations, and from that, deductive

inferences. And if we're talking about the continental rationalists, like Descartes, Spinoza, then what you have is some sort of intuitive, self-evident, innate, a priori premises and deductive method. In other words, the methodology of enlightenment thought was from premises via deduction to a logical conclusion.

Either a priori or empirical premises. The 19th century innate ideas and so forth are questionable. That empirical generalizations are awfully hard to verify.

You can falsify them, but verifying them is empirically pretty difficult, and you've got the problem of induction. So instead of empirical generalizations or a priori premises, the emphasis is on a hypothesis as the premise. So, from an empirical hypothesis, if this is true, what follows? Hypothetico-deductive.

So, a hypothesis for the premise leading to deductive methods. Now, this is much more in keeping with the actual scientific method. Remember, one of the criticisms of Francis Bacon and his inductive methods was that he gave no room to the use of hypotheses.

Experimental methods, but without hypotheses. Well, here you see a more mature approach, 19th century, and the hypothetical deductive method. This becomes the understanding of scientific method in John Stuart Mill, in Ernst Mach, in Bertrand Russell, and in 20th-century logical positivism.

In fact, it really wasn't cracked until Thomas Kuhn's book, The Structure of Scientific Revolutions, when it was recognized that science works more with paradigms than with hypotheses. Okay? So keep that in mind. Now, the second characteristic.

The extension of that method, the hypothetical deductive, to the human sciences. Previously, the tendency had been to think simply of science as dealing with physics and astronomy. That's where it started.

Chemistry came into the game. Biology, gradually. But the significant thing in the 19th century was the extension of these kinds of methods to the human sciences.

That is to say, to psychology, to sociology, to politics. The attempt also to apply it to ethics, so that ethics could become an empirical science. That's precisely what John Stuart Mill was after in his utilitarianism.

He wanted to have an empirical scientific ethic. So the extension of that scientific method to human knowledge, the natural sciences of the social sciences, this becomes known in some quarters as scientism. Scientism.

That science and science alone yield reliable knowledge. Scientism. And of course, our continental friends meantime would have conniptions over this sort of thing.

What about the human spirit? What about the phenomenological method and so forth? In fact, you might think of Husserl's attempt to deal with what he called the crisis in the sciences in the light of this. He wants to make philosophy into a rigorous science, but not with a hypothetical method. You see, with a priori principles derived by the phenomenological method.

So then, these things, but there's a consequence. And the consequence of this extension of the scientific method to a global range is the development of phenomenalism, anti-realism, and anti-metaphysics. Yeah, phenomenalism, all we know is phenomena.

Things as they appear to us. What we nowadays call anti-realism. We don't know the knowledge of ultimate reality as it is in itself.

And the way it comes out, particularly in the 19th century, is a rejection of metaphysics. And I think that's particularly significant in the 19th century because the nature of metaphysics, you see, was viewed in terms of the phenomena-noumena distinction. Viewed, if you like, in the light of the representational theory of knowledge, which left you with a lot of unanswered questions about the reality that it's supposed to represent.

It's noticeable that people like Bradley, their works on metaphysics bear titles like Appearance and Reality. That was Bradley's title, Appearance and Reality. Now, essentially, what the positivist movement is doing is saying, all we know are the appearances, ruling out the reality.

Notice that as you read John Stuart Mill. If you're interested in the question about mind and body, what is the mind? Says Mill, the mind is just the permanent possibility of reflections, ideas of reflection. Now, mind isn't a thing.

We don't know anything about its reality. What we mean by the word mind is, well, that which presumably is involved with further experience in the future, the permanent possibility of reflection. Well, what's the matter? Permanent possibility of sensations.

You say, that's not what matters, it's what matters. Well, phenomena, that's what it is for us. So, a thoroughgoing phenomenalist view develops in Comte, Mill, and Mark.

Bertrand Russell, yes and no, depending on which decade of Bertrand Russell's career you're reading. He reserved the human person's right to change his mind and did it quite successfully at times. So, that's the characterization.

Now, how does this come out in these individuals? Well, first of all, Auguste Comte, a Frenchman, died in 1857. You have a chapter about Comte in Stumpf, and you have some selections in Gardner's anthology. You'll find Comte easy to get a hold of, easy to read.

Watch for two things. One is his law of three stages. The other is his contention about the unity of science.

Now, the law of three stages is his formulation of an empirical generalization about the history of science. He's an empiricist, and he's interested in the history of science. So, he's going to give you an empirical generalization about the history of science.

Namely, that science evolves through three stages. From a religious stage, to a speculative stage, to a scientific stage. Now, the religious stage, of course, produces theology, mythology, and so forth.

Fictions, imaginative fictions, like the Divine Rite of Kings, over which Charles I lost his head, you remember. Or fetishes in primitive animism. Notions of divine providence.

This is the imaginative childhood of the human mind. The second stage is the speculative. Dealing with abstract ideas, constructs, metaphysical constructs, like theories of universals and essences.

Natural law ethics and jurisprudence. Theories of natural rights. Democratic ideals, like all men are born equal, are hardly empirical generalizations.

Notions of teleology, alchemy, astrology, and final causes. You see, all these involve speculative theories about hidden realities. This is the adolescence of the human mind.

But the third stage is empirical, scientific, dealing with what is positively known, what we can positively assert. Hence, the term positivism. What can be positively asserted.

Certain. This is the maturity, the adulthood of the human mind. And it's here in the scientific stage, then, that what we try to do is to formulate general covering laws.

The general covering law is an empirical generalization that covers all the data. General covering laws. And it's on the basis of those general laws, generalizations, that you can make your predictions.

And therefore, develop technology to make use of natural processes. So, the positive stage, then, is that to which the sciences are evolving. Now, he tries to trace the various sciences in this way.

Religion has evolved to the metaphysical stage. A lot of theology is simply metaphysics. Chemistry has evolved, of course, from primitive fetishism through alchemy to science, empirical science.

But what he is particularly anxious to see develop is a science of social change. A science of social change. After all, he's living in the first half of the 19th century in France.

And if you're familiar with French history, it was an age of upheavals. So, we want a science, an empirical science, of social change. And this is the beginning of what has now become sociology.

Social majors, if you look into the history of your science, you'll find this is the way it began. Oh, there was another man, roughly contemporary, a little bit older, with Auguste Corne, a man named Saint-Simon. But sociology began in an attempt to be thoroughly empirical.

And it's only in very recent years, matters of a decade or two, that sociology has begun to incorporate some of the phenomenological tradition and to recognize subjectivity and so forth, the influence of people like Max Weber. Now, the unity of science is the second emphasis in Auguste Corne. Very simple.

It's the notion that all of the sciences follow essentially the same method. All sciences follow essentially the same method. There's no differentiation between the study of nature and the study of human beings.

The same method prevails for both, ought to. And that thesis of the unity of the sciences is one of the things in Kant that has persisted into the 20th century, emphasis on the unity of the sciences. That's what Dewey is working with, where he tries to take the developed scientific method in reconstruction and philosophy and say this needs to be applied to social change, to handling social problems, to politics, to education, so on and so forth.

Unity of the sciences. The differences between the sciences are differences of complexity. In that, sociology, for instance, has to build on psychology.

Psychology has to build on biology. Biology has to build on chemistry. Chemistry has to build on physics.

Physics has to build on mathematics. So there is a hierarchical arrangement of the sciences in terms of their complexity. And it's interesting that historically they have developed in that sequence more and more complex.

Well, that's my summary of Auguste de Kant. Notice, if you have the Gardner anthology, did you bring it? I should have warned you. Notice on page 151, his comments about Descartes.

Every French philosopher has to pay dues to the Descartes Union. And here's Kant's dues. While Descartes was rendering to the world the glorious service of instituting a complete system of positive philosophy, yes, what you know for certain, the reformer, with all his bold energy, was unable to raise himself so far above his age as to give it complete logical extension by comprehending in it the part of physiology that relates to intellectual and moral phenomena.

The part of physiology that relates to intellectual and moral phenomena. After having instituted a vast mechanical hypothesis upon the fundamental theory of the most simple and universal phenomena, he extended the same philosophical spirit to the different elementary notions, relations of the animal organism. But when he arrived at affections and the intellect, he stopped abruptly and constituted from them a special study as an appurtenance of metaphysico-theological philosophy.

A word like that has to be something bad. To which he thus endeavored to give a new kind of life after having wrought far more successfully in sapping its scientific foundations. And on the next page, 152 at the bottom, what he's after, you see, is the positive theory of the affective and intellectual functions, which is this.

It consists of the experimental and rational study of the phenomena of the interior sense, ideas of reflection, proper to the cerebral ganglia, brain physiology, apart from all immediate external apparatus. He should have had a brain science. So what he's after is very plain, and you notice that by virtue of this extension of scientific method, he's advocating a methodological naturalism of the kind we met in John Dewey.

Right? The kind we met in John Dewey. I think this is why a professor of mine one time instituted a seminar by saying that his mind positivism and pragmatism both amount to the same thing, and they're both dead-end streets. You see? Because they confine themselves to the limitations of empirical science.

Okay. Questions? Comments? I think that's very simple, and you probably grasp it right away. Okay.

John Stuart Mill. I think it's fair to say that Mill is the most empirical of all the empiricists. You mean more than Locke and Hume? Yes.

Hume, you see, talked of two kinds of knowledge. Matters of fact, relations of ideas. Relations of ideas are analytic truths, predicates contained in the subject, like mathematics.

Mill maintains that mathematics is an empirical science. Three plus five equals eight is an empirical generalization about all sets of three and five. So analytic truths, then, are really empirical generalizations, or if you like, empirical hypotheses.

The laws of thought, non-contradiction, identity, A equals A, and not non-A, are empirical generalizations about the way in which we think and use language. In other words, what Mill is doing is reducing these first principles to psychological generalizations. Generalizations, that is to say, about how the mind thinks.

And this is what Husserl meant by psychologism, which he condemned. Psychologism does not provide an adequate foundation for mathematics, for logic, et cetera, you remember. Psychologism.

So this is the sort of thing that Husserl was fighting against, that we anticipated there. But in this move, Mill is rejecting all intuitive knowledge, all innate knowledge, all self-evident truths. In fact, a considerable portion of his writing on epistemology was written in a work criticizing the philosophy of Sir William Hamilton, who was one of the Scottish realists.

And you know, Scottish realists, in the tradition of Thomas Reed, were talking of self-evident truths. Truths which we naturally spontaneously come to believe by virtue of proclivities of the human mind built into the human constitution, which God created. And what Mill is doing in the spirit of the Enlightenment is saying that's not certain enough, that's not positive enough.

These truths are simply empirical generalizations. Empirical hypotheses, if you like. Now, to say that generalizations and self-evident truths are really hypotheses helps you to see how it is that Mill develops the hypothetical deductive method.

But it also helps you to see how he can be an empiricist and talk of the principles on which deduction works as being empirical. A syllogism, you see, not only has to have premises, but it has to have valid inferences, connections in accord with the laws of logic. But if the laws of logic are empirical generalizations and the premises are empirical generalizations, hypotheses, if you like, then you have, really, a syllogism as a manipulation of empirical knowledge.

Simply that. Inductive reasoning, he recognizes, presupposes the uniformity of nature, the principle of induction, and the uniformity of nature. Mill had pointed that out.

Well, according to Mill, the uniformity of nature is simply our broadest empirical hypothesis. It's an empirical generalization extrapolated to everything. All right, that's the hypothesis.

And so, a thoroughly empirical procedure. In his work on logic, Mill did a great deal of writing on logic, and he refined Bacon's inductive methods. You remember his table of presence, table of absence, and so forth.

He refined those, essentially the same methods, really, but a little closer definition in order to render the kind of precision for positive knowledge that he wanted. Now, that, then, is how he approaches not only natural science, but the science of human nature. So, as I was saying just now, when he asks about the nature of matter, his response is very simple, very simple, that matter, that term, has as its meaning, empirical reference, its meaning, simply the permanent possibility of sensation.

From an empirical standpoint, um, the existence of material bodies means that sensations are possible. And for the same token, the existence of the mind means the permanent possibility of reflection. Well, you see, he's just building on the John Locke business, simple ideas of sensation, simple ideas of reflection.

But discarding Locke's view of the reality of matter as substance, the substratum, and discarding Locke's view of the reality of mind or soul as immaterial substance, the thing that thinks, he's refusing to do metaphysics, refusing to speculate. Um, notice that, um, this is very close to David Hume, who called the mind simply a bundle of perceptions. In fact, I think it's not quite as, um, skeptical as David Hume.

You see, when Hume said that all we know of the mind is the bundle of perceptions, he was referring to our present perceptions, which include the memories that we think are of the past, and anticipations we think are of the future. But for Hume, the mind is simply this present bundle of perceptions. Beyond that present experience, we have no knowledge, no knowledge of matters of fact beyond present experience, this bundle of perceptions.

Locke, of course, had asserted personal continuity, personal identity through memory, knowing the past, which Hume thinks isn't validated. It may be true. We can't prove it.

Mill, however, when he says permanent possibility, he's referring to, um, the empirical generalization about matter or mind as being hypotheses. You see, if there is a permanent possibility of sensation, if there is a permanent possibility of reflection, then it's more than simply the present bundle of perceptions. It's personal continuity, at least continuity of consciousness.

So, um, he's refusing to do metaphysics. You might, um, play with the relationship between this and Jean-Paul Sartre. No transcendental ego.

Each new perception taken for me creates the self anew. You see? It's as if he's saying that the self is simply a permanent possibility of new reflections and new experiences for me. So, um, what we have is roughly this same outcome in, uh, English philosophy in the 19th century that Sartre comes to in continental thought in the 20th century.

You see, the dissolution of the self. Really. The dissolution of the self.

Um, now, this is why the ethic that, uh, Mill develops, his utilitarian ethic, faces, um, a problem that is so often hurled at it. The utility principle, of course, says that we should maximize the pleasure and minimize the pain for the maximum number of people. It's saying you should treat people as a collection of painful and pleasurable experiences.

But what else can you do if you're Mill if the self is just the permanent possibility of experiences? All you can do ethically is to regard the self that way and try to maximize the good experiences. There is no basis in utilitarianism for respect for persons in the Kant tradition. For the simple reason, he has no conception of the person beyond simply the bundle of experiences.

You see? Justice. Human rights. These are words we give to certain useful things that produce positive experiences.

So we value justice for its utility, not because it's right. There is no prior right because there's no concept of persons with intrinsic rights. This is why John Stuart Mill had to develop a utilitarian theory of punishment, where previously punishment had been viewed in the retributivist sense.

Incidentally, retributive punishment is not vengeance or revenge. Now that's a psychological process. Retribution is simply holding a person accountable, holding a person responsible, and as it were, trying to maintain the balance within society of something which doesn't belong to him.

It's an attempt, in that word, at a social balancing of things. Well, that's a notion which Mill would have no basis for, and so he developed a utilitarian theory of punishment, building on Jeremy Bentham's principles of morality and legislation, in which Bentham advocated providing punishment in order to reform the offender, to deter the offender, without holding the offender morally guilty in the classic sense. And so to this day, you find really there are two theories of punishment, at least two theories of punishment, in our society.

One, the retributivist, the other the utilitarian, sometimes combinations of the two. A retributivist theory was articulated by Kant and Aquinas, but with a teleology involved. There's a purpose in punishment.

Yeah, a redemptive purpose, hopefully, you'll see. But in our society, these are the two, and by and large, our penal institutions seem to operate on a utilitarian theory of punishment. There was, a few years ago, a development in Britain which, building on a utilitarian ethic, advocated a therapeutic theory of punishment.

That is to say, don't call it punishment at all; call it therapy. The idea being that the criminal is emotionally disturbed, socially maladjusted, so that what is needed is some kind of psychological therapy. And that created quite a stir because it seemed to minimize individual responsibility even more.

You may be aware that C.S. Lewis has an article on that in the collection called God in the Dock, an article called the humanitarian theory of punishment, because that was called the humanitarian theory, and his argument is that it just dehumanizes the person. It's not treating an individual as a person who did something, but as a cog in an environmental machine who didn't have any choice. So the philosophical issue of freedom and determinism becomes very acute in that context.

Well, Mill addresses the question of freedom and determinism, liberty and necessity. And he, being anti-metaphysical, has to reject necessitarianism, which he sometimes nowadays calls hard determinism. That is to say, there are sufficient causes for every human decision and action such that no other decision or action could have occurred.

Necessitarianism. The antecedent causes are both necessary and sufficient. Now, that's a view of causation, which is a phenomenalist he couldn't halt.

It would imply that we know what Hume called necessary connections, and he agreed with Hume that we don't. So what we have then is a rejection of necessitarianism. On the other hand, he isn't happy about libertarianism, nowadays usually called indeterminism.

The view that human choices, the human will, are free and could choose other than they do. He doesn't like that. And he doesn't like it because of the constant conjunctions.

Hume's term, the constant conjunctions we observe between motive and action, including active will. That is to say, there are antecedent psychological factors that are necessary to the performance of any action. So there seems to be a constant conjunction between those antecedent factors and the action.

We cannot say that they necessitate it. That's a metaphysical theory. We don't know that.

So what he has is instead a kind of compatibilism, as it's sometimes called, or soft determinism. He wants to affirm that, yes, we do make decisions. We do make choices.

In that sense, yes to will, a choice that's not constrained by external causes. But he denies that those choices are constrained by, no, he denies that they're not due to internal causes. Well, and this, of course, this view here, this soft determinism, plainly feeds into his utilitarian ethic and so forth.

Because if it is the case that we respond to causal factors which, on our general hypotheses, will lead to pleasure or pain, then those factors to which we respond in making choices will influence accordingly, and a utilitarian approach is therefore the consequence. All right. His utilitarian ethic deals with that very adequately.

He develops a theory of belief that's rather like the theory about liberty. That beliefs are not so much freely chosen as they are psychologically produced. Now, the roots of that are in Hume as well.

Remember Hume's psychology of belief? Constant conjunctions accustom the mind to expecting certain things, or to thinking there is a necessary connection. So he has a similar kind of psychology of belief to that of David Hill. Well, that's the picture in Mill, and you can see, I would hope quite clearly, the hypothetical deductive method extended to the human sciences, yes, in talking about mind, in talking about liberty and necessity, in talking about ethics.

You see? Yeah? You need your general hypotheses as premises if you're going to predict the pleasure-pain consequences of a certain action and make your utilitarian decisions. So the extension of it to the human science is pretty plain, and likewise the, okay, Mill? I can't quite get it, Esther. Yes.

Okay. Don't confuse his use of the word possibility with that of an Aristotelian, where the possible is in the process of becoming an actual. You see? All he means by permanent possibility of sensations is that when we talk about a chair, a desk, an ink marker, a human body, what we're saying is we think that such things are visible, tangible.

You see? Notice the ending: visible, tangible, audible, touchable. You see? That is to say, if there are such things as material bodies, then as long as there are, there's the possibility of sense experiences. That's all.

Now, whether you, you know, ever have sense experiences of that particular sort, whether I ever see Esther again, you see, that's a contingent matter. But to say Esther's real, she's alive, bodily existence, is saying no more than she's a visible being. But matter in the sense of the Newtonian spatial occupant, that's something else.

That's something we can't do. Now, similarly to the mind. When I talk about your mind, when you talk about your mind, you are, in effect, saying that having a mind means that you will have all sorts of states of consciousness that you can reflect on.

Now, whether you do or not depends on whether you stay awake long enough. That's a contingent matter. But to have a mind is to reflect.

What is it that Descartes said, a thinking thing? Now, what Mill's doing is dropping off the thing and just keeping the thinking. So it's just that, avoiding the metaphysical hypothesis, sticking with the empirical hypothesis. Now, that may sound a little bit strange, but if you are trying to talk about human beings in purely empirical terms, how else would you do it? Well, the only way you can talk of human beings is in terms of physical sense data and reflective data.

The bodily story is told in terms of physical sense data, and the inner mental story is told in terms of reflective data. That's all the empirical input we have about human beings. Is that clear enough? Okay.

Let me add just a comment or two about Ernst Mach. He died in 1916, an Austrian physicist, and the two things that he's important for, two things. One is his sensationalism, as it's usually called.

He wrote a book called The Analysis of Sensations, in which he said we can analyze every object of experience into the sense qualities that are observable. So, he wants to do the same as Mehl, to describe phenomenal objects, the objects of experience, in terms only of sense data. And in that sense, the world consists, our world, our scientific world, consists of nothing but sensations, sense qualities.

No non-empirical metaphysical assertions are acceptable in science. The second thing that he's important for comes out in a book of his on the science of mechanics, where he insists that a scientific theory is simply an economical way of describing relations between sense data. Now, put those two things together, and you have first, the only thing science can talk about is sense data.

Second, scientific theories, therefore, are just theories relating to sense data. Okay? Theories relating to sense data. Relationships are not given; relationships between sense data.

We structure the sense data in certain ways, so that the objects that science talks about are ideal objects, phenomenal objects that we have structured, rather than objects as they are in themselves. Now, this view of science, then, both Ways and Mills is simply the view that becomes known as instrumentalism. Scientific theories are simply instruments for doing things of a practical nature.

Rather than bits of knowledge about any kind of reality in itself. This is the classic anti-realist view of science. Well, these, then, are the three characteristics of 19th-century empiricism.

Keep those in mind, and we'll get back to them on Monday, when we take a look at Bertrand Russell. Okay? You have the reading assignment for this week. You have the reading assignment for next week, except that I will add some more on Monday.

Remember what I said, that on Wednesday, we have a visitor who will be speaking to the class. So, we'll see you then.