A History of Philosophy
28 Summing Up Ockham's Revolution
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So first of all, about Occam. We've done two things with Occam so far, just to catch on to what we have been doing. On Monday, I briefly introduced Occam as a kind of extreme nominalist who rejected the classic theory of universals transmitted from Plato and Aristotle, and developed in a theistic fashion by people like Aquinas.

On Wednesday, when Dallas Willard from USC was with us, he elaborated on Occam's thinking at some length. And I think probably the picture began to flesh out somewhat, and you may want to pick up on that in the discussion. But what I want to do now is to draw that together and to come back to the distinction that we started with as we were introducing the problems of medieval philosophy, namely the distinction between a realistic theory of universals, the conceptualist view of Abelard, the nominalist view of Rosalind, and Occam himself.

You may have noted that on Wednesday, Willard suggested that Occam was closest in this array to the conceptualism of Abelard, whereas I'd suggested on Monday that he was closest to the nominalism of Rosalind. Why that disagreement when we're talking about the same person and the same materials? And I think the answer is really in this charting of the differences that you have here. Distinguish three questions about universals, questions which in the literature are often worded with regard to their relationship to particulars, to the particular thing.

The race. Are there universals ante rem, prior to the particular? Are there universals in remus, in particulars? And are there universals, in some sense, after post rem, after particulars? And plainly, the first has to do with universals as exemplars in the mind of God. The view that the eternal transcendent status of forms is not, as Plato thought, an independent realm of eternal entities, but is rather, as the philosophically developed Logos doctrine taught, namely that the universals are ideas in the mind of God, in accordance with which he creates the eternal counsel's wisdom of God, these archetypal principles.

That is to say, God's ideas are ideas applying to universal classes. The essence of the species, the nature of the genus, the essence of certain universal kinds of qualities and relations, like equality, and so forth. God's knowledge, then, is a knowledge of universal exemplars.

Now, to that question, plainly, the realism of Augustine, Bonaventure, Aquinas, and so forth, says definitely yes. And they retain that kind of Augustinian exemplarism, as we call it. To that, the conceptualist, Abelard, also says yes.

God has certain exemplars for universal kinds of things. But it is in that that Ockham and Abelard disagree. Why? Because while Abelard says yes, Rosalind says no, and in effect, Ockham says no.

Although Ockham does stop to ask about God's ideas, how God knows his creatures, you see. And the answer is that God's ideas are not ideas of universals, but ideas of particulars. They're not eternal archetypes in the mind of God.

They're ideas God made those ideas. They're ideas he came up with. God willed to think of this particular, that particular.

Odd, though David soon may be, God willed to think of him, you see, as an idea, first in the mind of God. Ideas of particulars he will, and I said will rather than may to emphasize the voluntarism, that he wills to make or wills not to make. So God has ideas, then, of all sorts of particulars, some of which he creates, some of which he doesn't.

After all, God can think perfectly well of my daughter, except that I don't have one. I have sons. He willed not to create such, you see.

But God can think of such in particular terms. I can only do so very imaginatively, or unimaginatively, as the case may be. So on the first question, then, Ockham, I was going to say, is an individualist.

He's different from all the rest. I didn't intend individualist to be a pun. He is an individualist, after all, in another sense.

Now, are there forms, universal principles, that really exist within particulars? The second question. And plainly, it's the realist that says that. That's why he's called a realist.

And the rest are agreed, no. No. What about post-rerum? Are there universal concepts that we hold in our thinking? Universal ideas that we have in abstraction from thinking of this particular, that particular, or the other particular? What, as we get into modern times, come to be called abstract general ideas? Are there such? To that, the realist says yes.

If he's platonic, knowing them by dialectic. If he's Aristotelian, knowing them by intuitive abstraction from experience of a species. The conceptualist says, wait a minute.

The conceptualist says yes. No, wait a minute. I'm working on the wrong column here.

The conceptualist says yes. Conceptualist says yes. That's why he's called a conceptualist.

There are universal concepts, but not universal entities. And the nominalist plainly says no. We only think particulars.

And Occam? Well, in a way, yes and no. He's an individualist again. You see, because according to Occam, there are no universal concepts, concepts of abstract universals in our minds.

But there are universal terms. That's why he's called a terminist. Terminism, universal terms.

And the big question for Occam is, what is the relationship of the universal term to the particulars that it denotes? And that's where Occam held two different views. And in the anthology, you have a discussion of his first position, and then his second position. The first position seems to speak of the term as an idea.

It is a term in the sense that it is the initial terminus of our thinking. It's the idea that you have in mind. It's the term in your thinking.

You think about it in terms of that idea. But he's insisting that it's a particular term. So it would be a particular idea, like a mental image.

So you think, then, of human nature, if you use the term. You think of human nature in terms of a particular example of a human being. Now, he's not altogether satisfied with that.

And he changes his position. He's not satisfied with it, because it seems as if the idea, then, is sort of an in-between entity between the mind and the thing. And he wants a more direct kind of reference.

So he moves to thinking of the term as a mental act, rather than an idea. It's the act whereby one refers, you see? So I use the word human being, and it refers to every Tom, Dick, and Harry, Mary, Jane, Sally that there is, you see? It's a particular term, which in the act of thinking is used with universal reference, OK? A particular term used with universal reference. Now, the one qualification that I need to make about that is with regard to the terms primary and secondary intention.

And I introduced that because Willard spoke of secondary intention, ideas of secondary intention. But what Ockham has in mind is a conception of intention or intentionality akin to that which Duns Scotus developed first. You remember we mentioned that last time.

As a voluntarist, Duns Scotus conceived of the act of knowing as voluntary. It takes an act of will to think about something, you see? An act of will whereby you refer to, you mean, that, you see? Intentionality. Now, what you have in Ockham is a development of that, so that the primary intention in knowing is reference to the particular object.

That's the primary intention, reference to the particular object. What do you know? Well, I know so-and-so-and-so-and-so-and-so-and-so-and-so, particular objects. But of course, in knowing, there's also a secondary factor in mind, namely the term.

That is in terms of how you do your thinking about the object. And that's an object of secondary intention. So I think of my wife in terms of her beautiful face.

Though frankly, I'm thinking of my wife this weekend in terms of her birthday. I went over to the bookstore to try to buy her a birthday card just now. They don't stock birthday cards for wives, I discovered.

Just for mothers. I found two wife's birthday cards. One was the one I gave her last year.

The other one said simply, for your birthday, I give you these few words. Open it up. Let's go out and eat.

And I decided that, no, neither of those. But I'm thinking of my wife in those terms. Well, that's a crazy example.

But it illustrates the fact that one thinks of a particular that is the primary object of thought in terms of this, that, and the other. So, there are primary and secondary intentions. OK, that's the picture, then, that, to me, clarifies where Occam is in relationship to the medievals.

And you begin to see the kind of revolution that's involved here. Let me put it this way. Plainly, Occam is moving into pure empiricism, which says that we can only deal with particulars that we experience.

Second, he's breaking with the medieval worldview with its teleology, its view of formal and final causes, everything in creation, and oriented by nature. He's breaking with that and is going to be left with simply a mechanistic worldview in line with the mechanistic science of the 17th and 18th century, simply matter and efficient causes, forces. About abstract ideas and universal principles, he is somewhat skeptical.

And that skepticism proves to be quite infectious. He finds no basis, no metaphysical basis, for the objective order of things in creation, a hierarchy of being. There's no metaphysical basis for that.

Things are what they are, and the way they are related, the way they are, simply because God chose to do it. It's all contingent. And because of the contingency of the creation and the order of creation, there can be no natural law ethic.

And we're back to the kind of voluntaristic approach where what is good, what is right, depends not on the inherent essence of things according to their place in the hierarchy, but depends rather on the contingent way in which God made them and accordingly a divine command on which it rests. So his emphasis is on the biblical command, whatever it is, with regard to particular things. And beyond that, he appeals to simply what he calls right reason.

Right reason is our reflection on our experience of the contingent events of creation. So it's simply our empirical way of seeing what would seem to be best in this sort of contingent creation, a kind of consequentialist approach. Yeah? What's the difference between right reason and natural law? Yeah, well, natural law, the difference with natural law is that there is a metaphysical basis.

But it seems like Ockham has to have some sort of ontology because what he's saying presupposes some understanding of the nature of being. Yeah. Get the difference between the contingent and the necessary.

You see, the natural law theory in Aquinas is premised on the necessary nature of the whole hierarchy of being in which there are no gaps in between levels of being, but everything individually and in its interrelated unity conspires towards the good. Ockham can't say that. The only thing that Ockham can say is that God made the world the way it is to do what he chose to tell it to do.

You'll see. And with natural law, there can be, therefore, no change in the moral obligation. With the right reason, there can be a change in circumstances.

Yes, yes. He's opening the door to utilitarianism. And I think somebody raised that when Willard was here on Wednesday.

You. I heard the voice from over there. I couldn't see who it was.

Yeah, I think you're very right in that regard. It's opening the door there. And Ockham and Scotus both discussed the same kinds of possibilities, namely that where traditionally the Ten Commandments have been taken as an example of natural law, because these are rooted in the nature of things.

Ockham takes the last seven of them, which relate to the contingency of creation, to be changeable. You see, how could God tell Abraham to sacrifice his son Isaac, tell Hosea to marry a harlot, so on and so forth? Well, God's God, isn't he? What's the

basis of morality but what God tells you? So it leaves things open. Though not to expect that things are going to change that quickly.

He's not a situation ethicist like Joseph Fletcher, who died last week, the old situation ethicist. I have a question about Ockham's secondary intention. Yeah.

And you gave the example that you could think of your wife in terms of her beautiful face or whatever. It seems implied within using that sort of terminology that you have to have some sort of concept or form of beauty to apply that term. Yeah.

You see, he's not saying that we don't have ideas. He's saying that the thing that has a universal reference is the term. You see, now, if the term is the act of reference, when I talk of a class of things, Whedon students, the act of reference is to all Whedon students, you see? And it's the term that has that universal reference, a particular term with a universal reference.

Now, at the same time, you will have ideas as well. And there's a secondary intention there. But the primary intention is the intention of the class of particulars when you use general terms.

I can understand it when you say use a grouping of terms like a class, a unit, because those are all tangibles. Yet when you use concepts like beauty, justice, those things, although I can see how you can draw them in an entire group, it seems like they have to have some sort of method, something beyond the general. Yeah, you see, when I refer to beauty, which sounds like an abstract general idea, Ockham would say that I'm using that word with reference to a whole lot of particular things.

And I'll name some of them for you if you ask me. My wife's face is what? A Monet painting is another. The Chicago Picasso is a third.

Yeah, I really think that's beautiful, the Chicago Picasso. Am I odd? Well, all right, my examples. You see? So I use the word with reference to things.

This is the way he'd put it. Would he say that that's different for every single individual? Or would he say that there is a way to say that a Monet looks better than a Monet? Well, if there are no real universals, then the classification of things is who's doing it. Yes, yes, that's the sort of way in which things work.

And I don't know that he puts it this way, but in the process of learning language, we don't initially make distinctions between proper names and general nouns, common nouns. It's typical for a young child learning to talk to speak of other women as other mamas, or other men as other daddas, or whatever, you see? And gradually, it's recognized that a particular term has either a single reference or a whole class of references. Yes, sir? How does that, how can you account for the term being the

same thing for a group of whole classes of things, the same class for a bunch of different people that are all individuals? Similarly, the fact that language is a social phenomenon.

Now, you can develop a private language if you like. And often, people who are close together develop a private language of their own. You know, they make up words that are their own sort of private way of conversing.

But basically, language is a function of a community, of a society. And I think Dr. Wood talked about this, but I didn't really understand. What is it then in the monad that people recognize that they can all attach to the language? Yeah.

Well, now you see, you're asking, what are the marks of beauty? And in the examples that I gave, the sort of thing that I had in mind was a sensory attractiveness that is appealing, you see, a sensory attractiveness that's pleasing. Now, I think there's more to it than that. The sensory attractiveness may be in terms of colors, or sounds, or shapes.

The term beauty could be just a combination of a bunch of different attributes. Yeah. Let me just refer to the sensorily attractive qualities.

Carl? Why did Dr. Willard stress, I'm confused Yeah. Well, I take it it was this emphasis down here, which is sort of in between those two. And I was sort of surprised when he did, frankly, because in conversation, when I was telling him that, in advance, that we had made this distinction between the two positions, he said, yeah, and I think the second position is the way to go.

Which, it seems to me, pulls Ockham closer to nominalism than to conceptualism. But for whatever reason, he saw it the other way. And I think it's the case that Stumpf makes that sort of alignment, does he not? Is it Stumpf who does, or somebody else I was reading? Well, in any case.

Okay. Let's leave that, then, and turn to the second kind of thing we want to talk about as we make this transition to modern times. And to get at that, let me come over to this side of the board and come back to a picture that we've been gradually drawing as we've traced the history of Western thought.

That is to say that what we find running through history is a variety of worldview traditions. A variety of worldview traditions. If you like, philosophical naturalism, explaining everything in terms of physical processes.

Some kind of idealism or pantheism, as in the Neoplatonic tradition. And theism, whether Christian, Jewish, or Muslim. Different worldview traditions.

And we've been noticing how the other variable that stands out in the course of history is changing conceptual models drawn from the science of the day. And what we've been tracing, really, thus far is simply the way in which Greek science, represented by the Platonic Pythagorean and the Aristotelian sciences with their theories of forms, how those Greek sciences contributed to the shaping of the philosophical work in all of these traditions. Okay? Though, admittedly, it's much more evident in the idealist and in the theist than in the naturalist at that juncture.

If you want a point of reference in naturalism, you have to go, I suppose, either to Democritus, the Epicureans, or the Stoics. Naturalists. No, the Stoics are sort of naturalistic pantheists.

Well, now, that kind of arrangement is breaking down. That's what is one of the revolutionary things about Ockham. You see.

Because the rejection of realistic theories of forms is saying, no, we don't want to work with those guys. And there is a scientific revolution going on. But it's going on first philosophically in terms of the internal disruption of the scholastic philosophy represented by Ockham.

And Ockham is 14th century. At which time you have the only, the bare bones beginning of empirical work that led to the mechanistic science. You see.

After all, Newton is 17th century. Galileo, 16th century. But in addition to the philosophical breakup, there is the scientific revolution itself a-brewing.

And you find comments on that in Stumpf that you'll want to take note of. We don't need to go into it particularly. Except to underscore again that the basic ideas are that of matter in motion.

And talking of matter in motion invokes two other concepts. One, the concept of absolute space. That is to say, a uniform extent of space infinite in all directions.

Absolute space. Within which matter can move. But also time.

A uniform and endless duration of time within which a change in motion occurs. So you have four key concepts. Matter, the forces that produce motion.

Absolute space. Absolute time. And of course, if you go back to the Greek model, that means rejecting formal and final causes, keeping just material and efficient causes.

Now, be careful not to make a further jump and say that the new science was completely empirical. The fact is that what we're going to be tracing is two different

scientific and philosophical movements in modern times. One of which is basically an empirical tradition, and the other, which is more mathematically oriented, is more of a rationalistic tradition.

From an epistemological standpoint. The empirical tradition begins with Bacon. Francis Bacon.

Chancellor, not Chancellor of England, but a statesman in Elizabeth I, James I of England. Francis Bacon. Thomas Hobbes of English Civil War times.

Political thinker. John Locke, George Berkeley, and David Hume. It is Bacon who first introduced inductive methods.

Formulated those inductive methods. Except, interestingly enough, there are anticipations of them that William of Ockham formulates, and Bacon seems to be in some way indebted to that. This, you notice, is basically British.

Bacon, Locke, Berkeley, Irish, Hume, Scottish. So I say British, not English. So this is sometimes called British empiricism.

On the other hand, you have Descartes, Spinoza, and Leibniz. Descartes, French. Spinoza, a Spanish Jew living in the Netherlands.

Leibniz, a German statesman residing in the French Orléans. And these are obviously continental Europeans, so this is sometimes known as continental rationalism. Well, the British tradition is influenced, you see, by the inductive methods of Bacon, which gets it going.

The continental tradition is influenced by the mathematical methods of Descartes, who got it going. And what happens is that as these two run into respective kinds of problems, some of which were sketched out by Willard on Wednesday night, an attempt arises to bring the two together in a curious way by Immanuel Kant. Critique of Pure Reason, 1781.

Big date. So that in the 19th century you get two very different traditions. You get German idealism in people like Hegel.

And you get British and French-German positivism in people like John Stuart Mill. And in the 20th century, well, it's largely a continuation of the empiricist tradition in Anglo-American philosophy and largely a continuation of the continental tradition still in continental philosophy. Further development from those beginnings.

Now, what we're going to be doing in the remainder of this semester is taking it up to about 1800. Therefore, Bacon, Hobbes, Locke, Berkeley, and Hume. Did I say Locke, Berkeley, Hume? Oops.

Bacon and Hobbes, Descartes, Spinoza, Leibniz. Which takes it up to around 1700. Did I say 1800? Oops, again.

1700. Okay. 1700.

So keep in mind, one, the breakdown of the scholastic approach to the problem of universals. Which led to the separation of philosophy from theology. Notice how Thomas was doing philosophical theology all the way through and theologically oriented philosophy.

Those two now seem to fall apart because there isn't the metaphysics that bonded them together. The glue is gone. And instead of philosophy being guided by theology, what's going to happen in the 17th and 18th centuries is that it becomes guided by science.

The methods are the methods of science. The model they're using is the model of science. You see? And so the relationship between revelation and reason breaks down.

And what you have instead is a relationship, no, is a conception of reason, rather, that is defined in terms of scientific knowledge. And the ideal of scientific knowledge becomes the ideal for modern philosophy. Modeled on scientific types of knowledge.

Okay. Now go one or two steps further. In addition to those two influences, let's take note as well of the richness of the Renaissance.

The 16th, 15th, and 16th centuries were the kind of Renaissance of classical learning that went on. Triggered in measure by the rediscovery of classical manuscripts, leading in turn to a Renaissance of classical scholarship, leading in turn to a Renaissance of various kinds of classical philosophy. And particularly influential in the English Renaissance, in the Italian Renaissance, Plato and Neoplatonism.

Plato and Neoplatonism. So that even though people like Bacon and Hobbes and Locke want nothing to do with Plato's forms, they all pay their compliments to Plato. So that if you've seen sort of a competition between Plato and Aristotle going on in medieval times, Aristotle now goes into decline, and Plato goes into the ascendancy.

And the conflict that develops is more between Platonic kind influences and the influences of empirical science. And obviously, there's a tension there. So Renaissance philosophy means Platonism.

It also means Stoicism. It also means Scepticism. Among the classical texts that were rediscovered were the writings of Sextus Empiricus, the Roman sceptic.

His outlines of Pyrrhonism, for instance. And so Pyrrhonic Scepticism takes on a new departure, and understandably not only because of the rediscovery of the texts, but because with the breakdown of the medieval synthesis, the old epistemologies were breaking down. You see? Yeah, if the Thomistic epistemology is about abstracting forms from particulars and thinking analogically about the hierarchy of being and that sort of thing, and you're no longer talking of forms in a hierarchy of being, then what good is the Aristotelian epistemology? In any case, as we mentioned before, the logic of Scotus and Occam is more oriented towards a dialectical criticism of other people's views.

Then, towards the systematic development of syllogistic proofs for this, that, and the other, the way it was in Aristotle and Thomas. And so then it's not only a change of world views, but it's a crisis on the whole notion of rationality and knowledge. And scepticism is a natural possibility of those junctures, and I want to come back to that in a moment.

So keep in mind the Renaissance, but concurrent with the Renaissance, you have the Protestant Reformation. And it's a whole fascinating story in itself, the relationship of the Protestant reformers to philosophy in their times. And of all of these, I think the most fascinating, though I think perhaps one of the most mistaken, is Martin Luther.

Very interesting. Martin Luther was educated at a German university at Erfurt by nominalists of Occamist persuasion. He knew the writings of Occam.

And at one stage, relatively early, he called Occam, my dear master. Interesting, huh? Oh, he also studied Aristotle and the scholastics in school, and in his early teaching years, he had to teach Aristotle's ethics. Hated the job.

There was a stage later on when he advocated eliminating Aristotle from the university curriculum, apart from logic and rhetoric. The particular difficulty that he had with Aristotle was precisely on the theory of universals. Because he was a nominalist.

Why was he attracted to nominalism, apart from the fact that he had been taught by nominalists, which is usually the reason people are attracted to things? Why was he attracted to nominalism? Because he shared Occam's jealousy for the sovereignty of God. Voluntarism.

Voluntarism. And he was concerned, therefore, about the individual before God. That's the very essence of Martin Luther's justification by faith alone.

The individual, by act of will, is involved. But he also disagreed with Occam over the matter of free will. And perhaps because of some of Occam's nominalist successors, who were more extreme.

Often, people suffer at the hands of their friends more than their enemies. As a result of that, Occam was accused of being Pelagian in his theology. Now, Pelagius, as you may recall, back in the 4th century, was a British monk who had emphasized free will to the extent that he found it necessary to deny any original hereditary sin that holds us in bondage.

And maintained that we are perfectly free to obey God simply by virtue of the influence of the example of Christ in his life and his suffering. Now, back then, in the 4th century, 5th century, so forth, Augustine and others resisted, rejected Pelagianism, so that by the time you get to Luther, it's recognized to be certainly heretical, and he accused Occam of the heresy of Pelagianism. Now, how come? Well, that's the interesting point.

You see, Occam had suggested out of the medieval emphasis on all creation imitating God and loving God, Occam had suggested that loving God is requisite for salvation. But loving God is a virtue. A virtue is a habit in Aristotelian language.

A habit that can be formed by living under the rule of reason. Well, if that's the case, then reason is necessary for love, which is necessary for salvation, so reason is necessary for salvation. Do you get the dialectical criticism? But God's grace forgives us freely.

Reason has nothing to do with salvation. God's grace is not preparing us to love God meritoriously so that we earn salvation, as the Occamists seem to suggest. Rather, God's grace is free forgiveness.

And so it was over the question of salvation by grace alone, justification by faith alone, that Luther became so critical of the Occamists. So his relationship to Occam and Occamism was sort of a love-hate relationship, mixed. On the philosophical side, loving it but not liking the extreme to which the voluntarism had gone because of its effect on justification by faith.

Well, Luther is interesting, very interesting. John Calvin had written an early work on the Roman Seneca in the Stoic tradition. And, of course, Calvin was a lawyer by training, and so he was very much taken with Stoic jurisprudence, Stoic natural law, and he talks of natural law in the Stoic tradition when he's dealing with ethics.

So one of the interesting things is that Luther sees natural law in relationship to right reason, like Occam, whereas Calvin sees natural law as invariable and unchanging

universally, like the Stoics. Because the Stoics had a metaphysical basis for moral order, different from the Aristotelian one. Erasmus was more of a Platonist.

Melanchthon was the holdout for Aristotelianism. And so the picture is rather interesting. But there is a thesis about the impact of the Reformation on philosophy that I want to focus on particularly.

It's a thesis that's been developed by Richard Popkin. By Richard Popkin. In his book on skepticism from Erasmus to Descartes.

Richard Popkin. Did I say Popkin? I did say Popkin. Pitkin? No, that doesn't sound right.

I think Popkin is right. I had Pitkin in my notes, I realized, and I had said Popkin. And I probably said Popkin because I knew Popkin was right and Pitkin was wrong.

So, oops for the third time. Yes, Richard Popkin. Skepticism from Erasmus to Descartes.

And he argues for this thesis that the epistemological vacuum was not simply a vacuum left, but the breakdown of the medieval synthesis. It was a breakdown that was also left by the loss of the authoritative interpreter in the church authority. In other words, the Protestant Reformation, in its insistence on scriptura sola, scripture alone having authority, rejected the authority of the church either in interpreting scripture or in speaking on things on which the scripture does not speak.

And so, there was the development of uncertainty about how we know. There was the fear of intellectual anarchy with the idea of the priesthood of believers, each interpreting scripture for himself. And there was the real possibility, people thought, of, therefore, the loss of any clear understanding or knowledge.

Now, that is what encouraged the rise of skepticism, Popkin claims. The rise of skepticism is represented by a French philosopher, Montaigne, whom Willard mentioned in passing on Wednesday, and is evident in the beginning of Descartes' philosophy, because you remember that Descartes, in his meditations and his discourse on method, decides to begin by posing the skeptical position. There is nothing that we can know without doubt.

And he sets himself the task of arguing his way out of skepticism. Now, why do that if it's not that skepticism is the threat looming over all their heads? And so, in that sense, the radical methodological change that came in philosophy with Descartes where instead of starting with what you believe already, thinking through that, you start with nothing at all and work your way out of that. That radical methodological change, the influence of skepticism, was due to the intellectual vacuum left by the

breakdown not only of medieval scholasticism but also of church authority in the Reformation.

It's an interesting kind of thesis, and I think it's correct in terms of the things that worried people at that juncture in history. So then, we are launched with that into the modern period. And what is it that steps into the epistemological vacuum to save the day? You see, that's the interesting thing.

You're going to be reading Francis Bacon for Monday. Are you not? You'll find that Francis Bacon talks of certain idols. Interesting term to use when you're talking of wrong ways of thinking.

He talks of certain idols about which he is skeptical. They include traditional philosophies passed down from the past. They include naive observation, popular viewpoints, and ideas that are suggested by misuses of language.

In other words, he's posing the very kinds of problems which skepticism was concerned with. How are we going to know for sure? And what Bacon does is to propose methods. Methods for empirical learning, inductive, gathering of evidence, and drawing conclusions about causes.

And what Bacon in his Elizabethan utopianism does is to envision a magnificent utopian society built on the new empirical mechanistic science of efficient causes. Yeah. Fascinating stuff.

Well, meantime, over on the continent, and this is about 1600 in both cases, Descartes begins his meditations, his discourse on method by mapping out the skeptical issue and then proceeding. How does he get out of that? Mathematical methods, the methods of continental science, particularly optics, which used plain geometry. What is the method of geometrical reasoning? Start with your basic axioms and then your proofs.

And that's Descartes' method. So you have two alternative methods proposed to avoid skepticism. The method of empirical science, the method of mathematics.

What is the way of knowing that replaces the medieval insight drawn from theology to guide the philosophical mind? What is the rule of reason going to be in the Enlightenment, but the rule of scientific methods and knowledge? And that, the long story, is what produced the scientific mentality of the 19th and 20th centuries and the scientific naturalism of our day. I don't want to blame it all on Aachen. I don't suggest you do.

No, Ockham had no idea where this was going. His concerns were other than that. But this is the intriguing story, and we'll get started on it next time.