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TAFT BROOME: Right now, let's pick up with where we were last time. Now, what we wanted to do, if you recall, was to talk about a case in engineering ethics without first talking about ethics and without talking about what engineering is.

OK, let's see what it looks like to have a discussion like that. Then, today, I'm going to talk more about ethics. And I will talk about ethics a little bit more as we go along-- throughout the course, actually. And hopefully what will happen is that you will have a different point of view. Even if you don't change your mind about your ethical recommendation, you will have a different way of writing about this case later. So you'll have to see some growth.

So this time is highly speculative. I mean for it to be pedestrian. And we'll do that for as long as it's lively and productive to do it.

So why don't we start with a recapitulation of the summary that comes out of the textbook. It's called the BF Goodrich case. And then we'll take that summary and we'll talk about it. Then we'll expand the summary with facts. And maybe, Joel, this will be an interesting point for you to throw in some of your experiences with this case. We'll expand it and see if our ethical recommendations or judgments will change.

So who would like to start off with a few statements about the summary, give us a little summary of this case? Yes, go ahead.

AUDIENCE: [INAUDIBLE]?

TAFT BROOME: Uh-huh.

AUDIENCE: So the summary in the book tells us that Goodrich won a subcontract to design brakes for the Navy A7 contract. And they partly won the contract because they had proposed a four-rotor brake design [INAUDIBLE]. They assigned an engineer named Lawson to do the testing on the four-rotor design, hoping to come up with results that showed that the brakes met military specifications.

The initial tests Lawson found that the brakes didn't meet specifications. They overheated. But they went ahead with flight testing, lots of [INAUDIBLE] flight testing and how many brakes did overheat [INAUDIBLE]. Lawson was then told to continue laboratory testing, but with modified constraints on the testing. So they eased the conditions of testing, allowing more time in between that test and the brakes to cool and things like that.

Still, the results were not good enough to decide to go with the design and Lawson's direct manager decided to forge the results. Meanwhile, higher management had decided that four-rotor design of the failure still go ahead with the five-rotor redesign.

But Lawson never knew about that, so he just kept going along with what his manager said to do. Finally, when his manager said there were going to forge the results, he and his technical writer colleague reported to the FBI and general accounting office then sent it into [INAUDIBLE].

TAFT BROOME: Want to add something? Anybody want to add something? Yeah, let's talk let's add a few things. I want to add something, that the engineers were asked to actually revisit the breaks after each test, which you don't do in the field. You don't go back and change-- look at the brakes, in the field, you put them on, you use them. If there's no problem, you keep using them. Then there's a test schedule, you may go through the test schedule, but they did that.

And that was an issue that, I think, we want to discuss. The issue was that for LTV, who was the subcontractor, that if they pass the test, then they could make brakes for the whole line of aircraft that the military was going to use. This was during the Vietnam era. So they were going to use them, this was not for training, it was for actual combat.

OK, anything else we want to-- OK. Tell me what do you think is the-- does this experience here have any moral content? And how do you evaluate the behaviors of the various characters in this scenario? Feel comfortable, just open up, just start talking. Yes?

AUDIENCE: I thought, at first glance, the engineers looked like the victims, but they were also engaging, but they did modify the tests and then [INAUDIBLE]

Probably wasn't the best thing to do. And they-- like he just said, they revisited the brakes, which means everybody loved the lower managers and the engineers, which was kind guilty of some kind of moral wrong.

TAFT BROOME: Do you feel comfortable about putting a name to this moral wrong? What kind of moral wrong? It's not, then think about it.

AUDIENCE: I think it's dishonesty.

TAFT BROOME: All right. Should a person be honest?

AUDIENCE: Yes.

TAFT BROOME: Why?

AUDIENCE: Because why?

TAFT BROOME: Yes.

AUDIENCE: I think it's [INAUDIBLE] right and wrong.

TAFT BROOME: OK, so we're talking now about both-- about dishonesty-- lying, being a form of dishonesty?

AUDIENCE: Yeah, I feel like they're synonymous.

TAFT BROOME: OK.

AUDIENCE: I think for engineers to be dishonest, [INAUDIBLE]

Their statements have far reaching ramifications that could affect others.

TAFT BROOME: OK.

AUDIENCE: Yeah, one has to think about what happens if the brakes fail?

TAFT BROOME: Right.

AUDIENCE: And lives are at stake.

TAFT BROOME: Yeah.

AUDIENCE: That's what I would say the moral realm was, was the endangerment of lives the test [INAUDIBLE]. Because in the few facts that we have, Lawson wasn't actually dis-- we don't know that he actually said a lie-- in fact, never. He just did the modified test and allowed [INAUDIBLE] to happen, but it doesn't say that he said the brakes are great. They're safe. He just didn't say-- which I think you could argue [INAUDIBLE] withholding [INAUDIBLE].

AUDIENCE: I thought it was interesting. One of the things I highlighted was the fact that they mention the pilot was never in danger. Because I don't know [INAUDIBLE] life was never in danger. But I still thought it was wrong.

AUDIENCE: The issue is, if these [INAUDIBLE] wrong field in Vietnam--

TAFT BROOME: Yeah.

AUDIENCE: It's not just a death trap, but what happens in the next few years with all these brakes? Bad things could happen.

TAFT BROOME: Yeah, because you're going to get more pilots involved using the brakes over time. All right. And it's dangerous. Suppose no pilots actually die, I suppose no planes are actually lost for that reason, nobody's going to feel good that you put them at risk. So it's a question of risk also.

All right. Can you defend what you said? You don't want people to die. Now I'm going to be the bad guy here. What is the price that the engineer and the technical writer had in blowing the whistle? Do they have to pay any price for all of this? Did they put anything at risk in doing all of that?

Can a company make money if the engineers are always blowing the whistle on what they do? Do companies always do these sorts of things when it comes to winning contracts? If they do, if they always do it, do they have to do it? Can a company stay in business unless it does these things? Let's entertain all of that. And do you think that there's any moral content to your answer?

All right, there's another way to-- you want to--

AUDIENCE: I was thinking of [INAUDIBLE]

When money came into General Electric, [INAUDIBLE] company [INAUDIBLE] like moral violations that have [INAUDIBLE], which means he drew up a whole new business for the company and said, these are our values, and kick people out who didn't. [INAUDIBLE] General Electric still has something from the General Electric [INAUDIBLE] of following [INAUDIBLE]

TAFT BROOME: Yeah.

AUDIENCE: And they don't want anymore-- the company is at the forefront of-- I think they are an example of not having to be in these kind of messes and still [INAUDIBLE].

TAFT BROOME: All right. I'd like to see more discussion on that. I've done some practical engineering before. And these issues always come up, how can you how can you make that money? All right. Can you always do the right thing, should you always do the quote, unquote right thing? Let's talk about that. Can you always-- can you always do engineering and be obedient to your views about ethics? All right. That's not a rhetorical question, think about it. If you don't want to answer it now, we're going to get into it a little bit later before the day is out. Think about it, can we always do that?

Let me press it again, one more time. And then I'll start with some application of ethics. When you said what you said, is that a matter of private ethics for you, or do you think that I should say the same thing? Do you think the rest of us should agree with what you said, or do you think that what you said is just merely defensible? Pardon?

AUDIENCE: Is that for discussion?

TAFT BROOME: Yes. That was a real question. I mean, are you going to coerce the rest of us to think the same way?

AUDIENCE: I'm not such a fan of coercion.

TAFT BROOME: Right. [LAUGHS]

AUDIENCE: So the moral ground that I commented on, and you brought it up as the endangerment of lives.

TAFT BROOME: Right.

AUDIENCE: I feel like that's-- the code of not putting lives in danger, I would say is ethical, and that everyone should accept.

TAFT BROOME: So you're going to universalize it?

AUDIENCE: Yes.

TAFT BROOME: All right. All right. Then what would you recommend as behavior for these two engineers, for Lawson and for VanDerveer?

AUDIENCE: I would recommend that they had reported the negative test results, the overheating before agreeing to represent [INAUDIBLE]. Well, I would recommend that they not agree to represent the original.

TAFT BROOME: OK, so they were a little bit late in telling everybody that things were not going well. Why do you think they were late?

AUDIENCE: I guess for two reasons. One is that even though the article said the pilot was never in danger, I think that [INAUDIBLE]

The brakes could have become even worse than they did while testing. So one was that danger. And then the second was-- because they spoke up so late, they allowed another round of testing to happen, which would cost money.

TAFT BROOME: So they got deeper and deeper and deeper. OK. Yeah?

AUDIENCE: I would say that two possible other explanations might be better. As an engineer, you [INAUDIBLE]

Because this might be putting your reputation at stake. I think their immediate manager probably knew about it as well so it could be potentially frowning on them. So in some sense, maybe the responsibility was [INAUDIBLE]

In terms of an action that they might have been able to do, is they might have been able to go above the immediate management and go see an upper management and say, hey, my boss wants me to fabricate data. Is there something that can be done about that, or what do you think about that?

AUDIENCE: In fact, there ought not to be a profit in the company when these kinds of results, which have potential to bring danger and what have you are motive [INAUDIBLE].

TAFT BROOME: Right, right.

AUDIENCE: And maybe it's not clear that where was such a plan.

TAFT BROOME: OK.

AUDIENCE: There was certainly something in the culture [INAUDIBLE]

TAFT BROOME: Right. As a matter of fact, this--

AUDIENCE: [INAUDIBLE]

TAFT BROOME: Right.

AUDIENCE: --challenge and what have you because if NASA sent [INAUDIBLE]

TAFT BROOME: Right.

AUDIENCE: [INAUDIBLE]

TAFT BROOME: As a matter of fact, yes, culture is now a big issue for ethics, both in NASA and what they call corporate culture problems, like with Enron. They're blaming Enron as having a cultural problem. That was not just here or there, that it started with the top, and that the whole culture had this problem. OK.

Let me make a few comments. What I'm going to do today. I'm going to talk about three kinds of ethics. One is the kind of ethic where in a thing is right, or action is said to be good if it tends to produce the right consequences. So that belongs to the big, general category of consequentialist ethics. And that's what you said. And that's what happens. The thing in and of itself was wrong because it tended to produce, tended to produce, bad consequences.

Now there are different theories about how to carry that out, what counts as bad consequences, I'll get into that later. But we're going to talk about Emmanuel-- I'm sorry, we're going to talk about John Stuart Mill and utilitarianism as probably the most talked about method of dealing with consequences. The second method is a method that says, well, we don't worry too much about consequences, there's a principle at stake. The question about right behavior and good and bad action have to do with conformity or dis-conformity to the right principle.

And that's what miss Henry said, that really lying is a bad thing, we should do we shouldn't be liars. And she didn't say anything about the consequences of it. That's a legitimate way to go. And we're going to talk about how Immanuel Kant has a set of ideas about using reason to formulate principles to live by.

And there's no reference in all of that to consequences. The third approach is generally called virtue ethics, but now is being extended out in discussions to what's called narrative ethics. And what it simply says is that one should not worry too much about principle, one should not worry so much about consequences once you simply do what a righteous person would do in a situation.

What counts as a righteous person? Can that work in all situations, how do you get it to work? Those are the details that we're going to go through as we go along in the course. And we're get into some of that later. Right now, I want to set up those ideas in, what I call, a world view. So let's get the world view right. And I'm not finished with this A70 case. We're going to come back to it.

OK. So to do that, we've seen this part before but I'm not going to go through all of it, just going to go through about-- Oh-- 10, 15 minutes of presentations over here. OK, so we've got to deal with this and maybe some lights. All right, now, I hope you're entirely confused as to why I did all of this.

But let me see, I want to get, oh, I want to get out of this. Yeah, OK. But what I want you to start with is that we're talking about now a medieval period. This particular Pope, Julius II, reigned from sorry 1503 to 1513. He was called the Warrior Pope.

And we're talking now about the time when all that we called a University in the Western world was formed. And if you went back to that time and visited the universities, you would know a University when you saw one. You could walk down the street, you could say I'm not in any University. You could walk down this the other street and say I'm in a University.

And they were doing-- anybody ever see this film called *The Name of the Rose*? Yeah, well that was about 400 years before this, but you can see that--

AUDIENCE: Well, I would say probably no more than 200 years.

TAFT BROOME: 200 years before, OK.

AUDIENCE: It's a very, very important book [INAUDIBLE].

TAFT BROOME: Very important book. I read the book. And then I went back and traced out all of the movements in the library. And then I saw the film and then I went back to the book.

AUDIENCE: The real issue was, why [INAUDIBLE] monastery, and priests were being killed.

TAFT BROOME: Yeah.

AUDIENCE: And Sean Connery comes in from England to try to figure out what's going on. It turns out the head of the library was killing people. Why? Because they were reading a particular book. What was the book? Aristotle's logic.

The philosophy behind this is Aristotle logic changed the Western mind to become reductionistic. And this guy foresaw that, and didn't like the change that he thought was coming. He thought people who are going to read this book are going to make a devastating change in the Western mind, and they should be killed because they might propagate this idea. And you know what? I agree with you [INAUDIBLE].

[LAUGHTER]

TAFT BROOME: Now I'm going to make a metaphor. And then I'll-- sorry, we're not up again. Do I need to toggle?

AUDIENCE: Yes.

TAFT BROOME: Again, sorry. There we go, thank you. And let's see, to go forward all I need to do is, yeah. OK, I'm in good shape. I'm going to make a metaphor. Just relax, all of these points are going to fall in here together. You can't make deep points just by saying there it is. You got to go around, all right.

This is a place in Washington, DC, called the Cosmos Club. And they have members and you can go in there and have lunch with a member and dinner with a member. And if you go in to have lunch in this place the first thing they're going to do is, maitre d or person in charge is going to write your name down and ask you to wait a few minutes.

They're not holding you up. What they want you to do is walk around and see pictures on the wall of their members. Pictures of their members, living and past. And when you walk around here, you're going to see Nobel Laureates Pulitzer Prize winners, heads of state, all of that when you walk around here. And then you'll know where you are.

Now I got a call one day from a man named Bill Wolff, he's president of the National Academy of Engineering. And actually his secretary called and said, Dr. Wolfe would like to have lunch with you, he wants to talk to you about doing something in ethics for the academy. I said to her fine, but in my mind I said, oh no, I don't want to be doing any more codes of ethics, I'm through with that stuff.

But if he wants me to do something like that, I will do it. then I said, where we're going to have lunch? She said, well, we're going to have lunch in the Cosmos Club, in his club, the Cosmos Club. I knew immediately that we weren't going to discuss any codes of ethics in there. We were going to discuss what the Academy, draws members of this Academy, what the Academy has to do to properly advise Congress. Automatically, just by saying that, I knew the content and how to prepare for that lunch meeting.

I knew about it, everybody in Washington knows about this club, but I particularly knew about it because I was married right in that room. And it's a delight for to my wife when I tell her that I talk about this particular place. I could talk about some other restaurant. This is the Vatican. And inside the Vatican, there's a room called the Stanza Della Segnatura. And that room-- can you barely-- you can barely see it. It's a beautiful room. I wish I could get better. I tell you what, a class this size, if you want to come down here and look at my laptop. Actually it won't make any difference will it, if I turn it around?

It's a beautiful place. I've never been there, but I can't wait to go, next year. And there are paintings on the wall here that are supposed to do the same thing as those pictures in the Cosmos Club, tell you where you are. This room, these paintings, were made by a painter named Raphael. At the same time that Raphael was making these paintings,

AUDIENCE: [INAUDIBLE]

TAFT BROOME: Julius II had commissioned him. This Julius II, the Warrior Pope, had commissioned Raphael to do these paintings. And at the same time, our guess who was painting the Sistine Chapel? The agony and ecstasy, Michelangelo. Michelangelo was in another building in the Vatican, painting the Sistine Chapel.

AUDIENCE: Oh wait, Raphael [INAUDIBLE]

TAFT BROOME: I didn't know it was secret, but I know that Raphael is accused of stealing some techniques in there.

AUDIENCE: That's right. [INAUDIBLE]

TAFT BROOME: It was clever.

AUDIENCE: [INAUDIBLE]

TAFT BROOME: I learned, too, that Raphael was recommended to the Pope by Bramante, who had done the dome, who was the architect. And Raphael was his cousin. Younger cousin. But anyway, and this is the room that the Pope uses to sign his major documents. This is during the Holy Roman Empire.

And so the Kings-- Charlemagne was the first. Then you had a bunch of the Ottos. And whenever the Pope made these, made a signature, the King and other great dignitaries would be in this room. And the Pope wanted to make you understand this is very significant for these days, the Pope wanted to make everybody understand that the credit, the Vatican is good. That you're making a good deal. Now why did they want to do that?

Well it goes back to the film. The Popes had to fight for the life of Christians back in those days. We had an empire, but it was mainly a feudal society. And the pope's had to fight these people. The pope's actually got into intrigues. They would hire one Duke to fight against another one. The King would be fighting against a Duke. And the Pope would side maybe with the King and give money to the Duke.

Oh, it was-- these people had to fight on a daily basis. And now, here comes the real issue. 1503 to 1513, that's his reign. What's going on in those days? Well, Columbus had just gone to America in 1492. The printing press was perfected with the movable type in 1492.

So therefore, there was this big issue at the time of science. Everybody wants now to get rich because we have discovered a new world and we're creating a whole new middle class trade. So people wanted ships to go faster and hold more. They wanted to be able to plot through the stars.

So they wanted to deal more with astronomy. There was this whole big issue of bringing science into everyday life so that person who would ordinarily think of him or herself as average could now make a lot of money. And as Dr. Moses just said, this was a time when the religious establishment that was really building most of the universities, thought that Aristotle was a danger to village.

If you don't believe that, just ask what was science, and is science considered today a danger to faith? So the Pope had to deal with that. Not only that, but let's go just a few years after. In 1517, four years after the Pope died, Martin Luther posted his 95 theses, and started the Protestant revolution. So yes, that was concern in those days that the pope's credit might not be good.

That a signature in there might not be much, so he was using the power of these paintings to make the case. Now I'm going to look briefly at just two of these paintings. And then go back to what I said about ethics. This is one of the paintings that Raphael did call *The School at Athens*. It looks to me that you can see it pretty good up on the screen, believe it or not.

And you can probably see that it even looks a little bit better on my screen and that my screen is not perfect, but this is a beautiful piece. You can probably tell from the colors that they refurbished a lot of that to its original. Now here's what you need to do to appreciate what I'm trying to do in this class. And that is relax, let your mind flow. Do what they call a free association. Just look at this painting.

Now what the Pope wanted to show was that Greek philosophy has a place, including Aristotle, Greek philosophy has a place in the Christian/Holy Roman Empire. Despite all of the problems that they've had before, now we've got a whole Renaissance has come. We've got a whole new day. The church is not going to fall apart.

There is, in fact a place for Greek philosophy in the Holy Roman Empire. He wants to make that statement in these paintings. And in this particular statement in this particular painting, *School of Athens*. So what the Pope did was said, look, I want you to paint the great thinkers from Greece. And I know I have friends, I know people that were like them. I know a man that I think was very much like Aristotle. So use him as a model.

I know a man that looks very much like-- that thinks very much and talks very much like Plato. Use him as a model. I know a person will go down to this village as this wise, old man down there and use him as Socrates. And on around, there are some stories about some of these folks. You want to tell one, Joel?

AUDIENCE: [INAUDIBLE]

TAFT BROOME: There's one--

AUDIENCE: [INAUDIBLE]

TAFT BROOME: Right. And all of these people represent someone of note in Greek philosophy. Except one.

AUDIENCE: Raphael, himself.

TAFT BROOME: Raphael, himself. And that I think is-- yep, I think that's him right there, looking out at the rest of us. He paints himself looking out at the rest of us as if to say, see, I did this. Now let's put aside the fact that not all of these people knew one another. There was no possibility of getting all of them in one room.

That's irrelevant, isn't it? The story is supposed to tell something else. Now there's something that I don't want to put aside. And that is that this, and all of this right here, that's a Roman vaulted ceiling. None of the ancient Greeks ever saw that architecture.

So why would he put these people, first, second, third, and fourth centuries, BC, into this room. Now be careful here just a little bit. This is part of the actual room. This is part of the painting, but still in the painting, he has them in a Roman building. The reason is that he wants to make sure that you understand that not only does Greek philosophy have a place in the Holy Roman Empire, in the Catholic Church, in Christianity, but that Christianity will decide what is good and what is bad and what that we're going to use in here.

So these people are in this room. Now what I want you to do is to try to project yourself in this room. Try to see if you can project yourself either as one of these people or as just yourself, walking around here and talking to Socrates and introducing yourself to some of the stoics, or some of those people. And just talking with them, what would it be like to sit in there and talk with these people?

Well, I can tell you what I want you to see in terms of a contrast. Then we'll come right back to this. Another painting on this wall is that one. Is there any contrast that you would make between this one-- I'm sorry, between being in this room and talking with these people, and being in this room and talking with those people? You can see a lot of them. You just don't know which way I'm going with this, right?

Here's what I want you to see. In this room, you have depicted-- what I think quite accurately-- and more than adequately, is the basic world view of the ancient Greek. That is to say the world revolves around the individual. That when you start talking about what is ethical, you start talking about what is good or bad for individuals. Are not talking about-- you follow me now? You are not talking about what's good or bad for the state.

I can't emphasize that too much. That's the reason for me going through all of this thing here. That when we start talking about ethics, and I want to talk 99% about ethics that we inherited from the Greeks, that is 100% of the Ethics that we talk about in engineering ethics. I want to talk about it not 100% because I want to contrast it with religious ethics and other kinds of ethics. I want to contrast it with law, I want to contrast it with politics.

But then once I made the contrast, I don't want to deal with the rest of that. I want to come back to ethics. The name of this course is engineering ethics, not engineering public policy. That's what they deal over in those courses. What I want you to see is that in this painting here, you are depicting what is known as a well-ordered society.

And that what is good is good for society. And what is bad, is bad for society. Over here, you're talking about an ill ordered society. People do what they want to do. But the emphasis and the moral agency is with human beings as individuals, not with organizations and states.

That's not true everywhere in the world. It's not true everywhere in the world, but when we do ethics from the Greek point of view-- and that's what we're going to do in this class, then we're going to say that more agency is, or a property of individual human beings, not of organizations, not of states. I'm going to depart with that in my 1% before this class is over.

But that's what we're going to talk about. If you can get yourself projected into this room then you have done 50% of all that I can do in an ethics class. Just get in there. Reason dominates. There's nothing, you can't say what I believe. Say what you can prove.

How do you argue it? What counts as a systematic argument? That's what we're going to deal with in this class. Over here, and then I'm through, this is the last slide I want to talk about. And I want to talk about this slide today, mainly as a contrast for the other one.

I will talk about this slide later, in more detail, later. They know how to live it up. Actually if we did things right in this class, we would find some place where the tree and the loaf of bread and everybody laying around.

AUDIENCE: You mentioned Kant and Mill.

TAFT BROOME: I did.

AUDIENCE: Do you know that Kant is really a follower of Plato and Mill is in many ways a follower of Aristotle.

TAFT BROOME: I can buy that, yeah.

AUDIENCE: [INAUDIBLE]

TAFT BROOME: We're going to talk-- I'll tell you what-- I might reserve some time to talk about that before we get out of here. We'll talk about the two of them. This painting is called *The Mass at Bolsena*. And what the artist wants you to do, the artist is going to try to focus your eyes and tell you a story. Let's go back to the other one.

The artist wants your eyes to go right here first, and see Plato and Aristotle. And then kind of go out and downward. The artist in this one wants your eye to go here. Do you see the flow coming up here and back down? It wants to tell a story. And that is that these women with their children and other ordinary people are being focused on a great event that's being performed here, it's a miracle that is performed here by this priest for the benefit of Julius II, Pope Julius II, the Warrior Pope.

Who's seconds ARE here and the Swiss guard, you see the sword is right here. This now portrays something that is going to be very important to you. Before we go any further, this person here looking out at us, Raphael, self-portrait. And that is the idea that is as old as homo sapiens sapiens. That in order to hold a society intact, you have to do three things. Short of doing three things, you have to overdo the other two.

The other three things, here are the three principles of social order. These are not sociological principles. Don't go over in the sociology Department and ask them what is required to hold a society together, because they are going to look at measurable things and come up with something else, scientific point of view.

I'm talking about what the masters have written about and how they've approached the problem over the many years. Three things. Number one, that a society will hold itself together insofar as the members of society see that it is in their interest to be a member of the society. And this demonstrates this, how can you best say that the people want to be part of the Holy Roman Empire?

It's to get a family and say that they meet their primary needs, I can feed my kids. So when you've got these mothers down here with the babies and all of these people who are acting as one then you're saying that the Pope is saying to you when you come in the Segnatura, that here in Christendom, we can provide your primary needs.

You will be able to raise your family. You will be able to get food. You get shelter, all of those things, you don't have to worry about the barbarians coming in from the north. Yes, you did, but that's what he's trying to say. Because don't forget, we're talking about that in 410, Alaric the Goth sacked Rome.

This Pope is very much well aware of that. This first order of principle is being satisfied here. That the self-interest of the individual are met by membership in society, that's principle or of social order number one. Principle of social order number two, a society will hold itself together so long as the members of society agree that there is a higher cause to which they can get-- to which they will commit.

Higher than self-interest. I am willing to die for democracy. I am willing to die for my country. I am willing to die for what it is that we stand for. And there it is, the principles of Christianity. This is not just the Roman Empire, this is the Holy Roman Empire. Weren't any Romans in it.

So there is this higher cause and it doesn't show too well here, but it shows well here, and that is that the painter is using light to go up here. And it's a little bit shaded down here, but you get the light. You see the light? The light is shining in from the top.

So therefore, God is speaking to you. The third principle of social order is the principal of force. That a society will hold itself together, that it can be maintained intact by force. Two kinds of forces. One is the kind of force that we call civil force, or police forces. Keep the citizens from disintegrating society by beating up on one another.

The other is external, which we call military forces. That a society would be held intact because external factors will not disintegrate it by coming in there and tearing the place up. So therefore, you have, in this Pope, the symbolism of both the high priest and the King.

That concept of bringing the high priest and the King into one person, is old, began with two people. Began with Moses, but Moses came from the mountaintop and the Hebrews had reverted back to paganism. Then Moses deposed his brother Aaron as high priest. And he became high priest, and King.

I'm using the word King symbolically, now as the one who provides for the principle of force. Hammurabi was also another one. And there was a third one, actually that came along afterwards. Named Akhenaten He came before, yeah, I'm sorry, he came before. Akhenaten actually proceeded all that. He proceeded Moses. And I think he invented the monotheism, yes.

He's sometimes forgotten because he wasn't entirely successful. There was a revolution and he lost. OK but yeah, Akhenaten came before. So that's this concept here. And what we will see as we go along in this course, that the universities in Europe at this time-- there were about 75 of them-- all were built, mainly, by clerics. And the ones that weren't were the practical schools, the law schools, the medical schools, the schools of theology and schools of administration or business, which we call business today.

They were run by experts who practiced, practitioners. But it's a very interesting thing about that, all of the practical schools were in Italy where this practical state of mind ruled. And the schools that taught several liberal arts, the trivium and the quadrivium, all were further away, started in Paris and then going up into Oxford and Cambridge.

And the priest that taught that had to get you into this mindset. So this is very important to what I think this class is all about. That in order to do ethics, don't get into this structured mindset until at the end of the course, when we start talking about codes of ethics. Don't do codes of ethics in this room. They'll throw you out.

You cannot formulate a set of principles, or a set of behaviors that everybody has to conform to. Not at that level of specificity. There are different approaches. Over here, there's only one approach. So towards the end of the class, when we start talking about codes of ethics, then we'll start talking about getting our bodies in this room and our minds in this room.

And we will be talking mainly about Greek ethics. Now I want to say something about the A-7D case from this point of view. We'll get to the other point of view later. Any questions? Any comments? There's a comment over here.

It's my responsibility to read body language. It is not my responsibility to be right about it. But I have to-- if there's something that I think is going-- I have to stop, try to drag it out of you. Now if I'm wrong about it, OK.

Now in this room, they're going to be-- with that A-7D case, they are going to be concerned about the behaviors, but they're going to be concerned about a structured argument supporting those behaviors. And the argument begins with a choice of approach, whether it's going to be principled or non consequential, whether it's going to be consequential, whether it's going to be virtue.

So that's how you start off your argument. So when you give an argument back to me, the first thing I want you to do after you have reviewed the case and when you start your analysis, The first thing I want you to do is to look at the major divisions of philosophy. And start with metaphysics.

So the major divisions-- and the worst part of this, what I just said, is the word "the". We can divide it more than one way. But let's look at the major divisions of philosophy being metaphysics, epistemology-- I'll tell you what these mean in a moment. Then we're going to have ethics and aesthetics. Then we're going to have education.

And then in the middle is something that is coming along as new, which I will cover when we start talking about engineering. And we're going to have two lectures on engineering. We need to schedule you, Joel, to give your piece. So in those two discussions on engineering, we're going to have another one in here.

And it's going to be-- I'm going to use this term right now, these two terms. And even though we may be talking about something called praxeology occasionally, maybe we have been talking about other things. But there's another category that we're going to talk about. And when you give a paper to me or make an argument, I want it to have this basic structure.

So in metaphysics, I want you to tell me-- first of all-- what method you're using. How this method contrasts with other methods? And why you're using your method, as opposed to another method? So when you say that I know that what I'm going to come out with in the end is that what those engineers did was wrong because it tended to produce the wrong consequences, I want you to tell me, I'm going to use a utilitarian approach. I haven't told you utilitarian-- I'm going to use a consequentialist approach.

A principalist approach will apply, but I don't want to use that one, and why. And then I want you to come back and after you've done this, is tell me what are the facts? Epistemology is theory of knowledge. So after you talked, what other facts did you want to talk about? Now look at the structure. You've got the case ahead of you, but you're not going to talk about all facts in the case.

There's going to be some specific things that you're going to be interested in. The behavior of VanDerveer and Lawson. Then I want you to talk about, what is the ethical content of their behaviors? And I want you to contrast that content with content that is not ethical, it's not unethical, but legal content.

You may want to put in a psychological motivation, which will be most important is that you put in a sociological context. That what they did, they did in the context of employees in a structured organization that exists primarily for the purpose of business profit, as opposed to the military people who they were doing business with, as opposed to other kinds of organizations, like the family.

And you will-- in order to do that-- before it's all over, you're going to have to tell me if there are any practices and principles in that business that conflict with ethical principles. And then lastly, I want you to make a statement about education. And I want you to decide how to make that statement.

Sometimes at the end of your presentation, you're going to-- well, we already did it, when we said, well, there's something about the environment here. Before you came in, we talked about how this case-- that there's something about-- and then we got to get out of here. There's something about an organizational environment that is conducive to unethical behavior. Maybe we need to educate people.

Like they're doing up at Boeing, at Boeing they said 3,500 people have to be trained in ethics. All of their employees have to take an ethics course, they go to offer them at Boeing. Well, not just in Seattle, but all over. 3,500 people. Now I am going to say that class is over. I'm going to turn on the lights and I start putting my things together. And these other people are going to come in, but talk to me about whatever you want.

And if it goes on, then I can talk to you outside and I'll be at the Brown Bag as soon as I can get there. Would you be interested in talking Thursday? This coming Thursday?

AUDIENCE: [INAUDIBLE]

TAFT BROOME: OK, next Thursday, we're going to talk a little bit more about ethics. We're going to start talking about engineering, and we'll look at another case. Today is Tuesday.

AUDIENCE: [INAUDIBLE]

TAFT BROOME: If you're ready. You want to wait till next Tuesday?

AUDIENCE: Next Tuesday, I think that might be [INAUDIBLE] Monday scheduled at the [INAUDIBLE].

TAFT BROOME: Oh.

AUDIENCE: There's no class.

TAFT BROOME: There's no class next Tuesday. Can we do something or no? OK, we'll decide it. We got plenty of time to decide, but you can see how this thing is going to continue. And then we'll start a new case.

AUDIENCE: There's nothing to read for Thursday?

TAFT BROOME: No, nothing to read for Thursday. We'll start getting you prepared in that mode later. I'm still in the mode where we're going at things pedestrian. But you see that-- but I hope you got this down, I want this structure. OK, Thank you.