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**TAFT BROOME:** When I was doing my-- when I started my doctoral dissertation, and I went in to visit my advisor, and he laid out the problem, because it was on a grant. And there was some leeway-- a lot of leeway. And it was on submarines. I think I gave you a little thing about that.

And so I'd heard a lot of stories about doing dissertations. Particularly there was a guy who was in the department who had been around for 10 years. So I said, when will I finish this dissertation? And I expected them to say, when I got the solution to this problem.

He didn't say that. He said, well, right now, I'm the teacher and you're the student. He said, you'll know when you're going to finish the dissertation when you become the teacher and I become the student. Yeah.

In other words, what he was really saying was, when he volunteered to become the student. I wasn't going to make-- you know. When he just sat back.

And that day came. It came all in one moment, because I had gotten all of these equations, but I needed one more equation, because I had an extra constraint. And he didn't know where to go with that, get that equation. And he had told me where he thought it came from. And I told him I thought it came from someplace else.

And so what I did was something that graduate students don't normally do. I did it both ways. I did it his way, and I did it so-called my way. And when I went back, I showed him his way, and I was getting all tangled up. It looked like it might lead to some place, but it just got tangled up with a lot of concerns.

And then he said, well, what do you think? I said, but I've got another suggestion. So I made this assumption.

And then he said, well, are we going to live with an assumption, or can you prove that this is true? I said, I can prove it. I used geometry to prove it.

So when I did that, his whole tone of voice changed. Instead of talking to me about what I should be doing, he asked me, what should we be doing? And I walked out of there, and I said, I've got my dissertation. Well, it took another year before it was all done, but that might have been in March. And it was done in November. At that moment, I knew.

So I'd like to use some of that with the class. I want you all to turn me around. I know next week is the final week of class. But that's good practice, isn't it? Yeah. Already. Already. Yeah.

**AUDIENCE:** Well, I think [INAUDIBLE].

**TAFT BROOME:** Yeah.

**AUDIENCE:** --more that you're kind of [INAUDIBLE] why--

**TAFT BROOME:** Yes.

**AUDIENCE:** Why you ended up there--

[INTERPOSING VOICES]

**TAFT BROOME:** OK.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** All right. Good.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** OK. That's a story that I can tell. I'm just trying to think of where to start so I don't take up the whole class period. I want to make five minutes out of it, right-- maybe 10 at the most.

The whole thing started-- I don't know where the whole thing started. But a good place to start is with this man named Joseph Campbell. And I saw him on the Bill Moyers program. Bill Moyers had this program. I forgot the name of it. But he'd interview these people that had something interesting to say. Bill Moyers's background is in divinity. I don't if he's ever been ordained, but his doctorate is in divinity.

So he has an appreciation for philosophy-- a deep knowledge of it. And there is an orientation to religion that he had, that he seemed to have, that fit in with Joseph Campbell. And that was the notion of allegorical theology. And that is that what you learn is told in a story. And somehow or another, your life story, or the big events in your life, will be metaphors of one of those stories.

Now they use the same thing in law, but they call it by a different name. They call it-- they call it-- what do they call it? Precedent. So when you have a legal case, or a case that you want to prosecute or defend, you go into case histories, and you find one that looks like this particular case. And then you say, well, how did the lawyers argue the case, and what did the judge decide would be, when found guilty, the punishment. OK. And that's a very interesting question for lawyers.

You'll remember in the Scopes trial, however so-- well, I'm going to talk about the Scope trial for about 20 seconds. But I'm going to talk about it from the movie *Inherit the Wind*, not from the newspapers and from the law courts.

In the movie, Scopes was found guilty. But then the judge said, he fined him \$100. OK.

So I hope you understand me when I say I fell in love with Joseph Campbell, not just with what he was saying, but the way he said it, and all these figures and everything. And then I got out, went out and read. I got the transcript of the TV program. Then I went out and read four of his books.

And then, over time, I got some videos of his lectures. Many of his lectures have been put on videotape. So I got about two hours of that, and sat down with my stepson over that, because I was trying to help him with one of his problems. And I used mythology.

I went out and wrote a paper on him. The paper called-- about-- not the [INAUDIBLE]. The one about the Oberlin horse. I wrote that for him. It isn't going to solve your problem. It didn't.

But I think what you'll see in this life is that some people are, for example, scientists eight hours a day. After that, science doesn't mean anything to them. Don't get it wrong. Some of them may be very talented at what they do. But I'm what they call a professor 24 hours a day. I solve the deepest problems with my life by going to the library.

So I got started with this whole thing about, to answer your question, with Joseph Campbell. That was natural to me, because I came up in a storytelling family. Turn off the TV. [INAUDIBLE] There was only one.

We got our first television in 1948.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** We were only two people. There were only two families in Hickory, North Carolina that had a television-- my dad went out and got one. Kids used to come over.

The television wasn't on but an hour a day. Came on, like, 4 o'clock. Was off at 5:00. The news was five minutes. [LAUGHS] A TV program-- a drama-- was 15 minutes.

Kids used to come over Saturday mornings to watch the television. My mother would serve popcorn. Yeah. That was down in Hickory, North Carolina in 1948.

But even later in life, we turned off the television. And our parents would have relatives or friends over. And they'd get to talking about something, and telling. And then, when they got into the storytelling mode, they let me and my little brother come out, and we'd sit on the floor, and we'd listen to him. So I came out into a storytelling mode in first place. So telling stories.

So the end of this, your question, is that I gave a paper at a conference. And my thoughts were respected to some extent, enjoyed to some extent. Not a whole lot.

What I brought to the table was that I was one of the few engineers in the room when they were talking engineering ethics. Better stated, I was one of the few engineers who was a practicing academic with a doctorate in engineering. A lot of them were practicing engineers, but I was one of the few. So when I gave talks people were nice.

One day, I gave a talk, and I told this [? concrete ?] [? sumo ?] story, and the whole place [? went right through the ceiling. ?] Published it, and got on what they call the lecture circuit. And I was giving lectures around the country. I wasn't making a lot of money. Some people-- who is it?-- Colin Powell. Didn't he charge something like \$20,000 for a lecture?

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** I was getting \$50. [LAUGHS] But they would pay my expenses. So I went around, and I went on the circuit with it. And the story thing just hit. So I said there it is.

So on Thursday-- now, as it turns out, the human factor has set in. Cynthia Winston has taken a hospital condition. Won't be able to make it. I will do my best to cover what she was going to cover.

When I say do my best, I am not going to take-- we were going to have 20 minutes, 20 minutes, 20 minutes. Now we're going to have 30 minutes and 30 minutes. But I'll take out 10 minutes. Give an overview of what she was going to talk about. I have some slides that I really got from another person. And I'll have to get his permission to put them up.

But I'll tell you what they are, if you need to know. This is extraordinary. I'll tell you who he is and where he can be contacted.

His last name is Casebeer-- one word-- C-A-S-E-B-E-E-R. He holds the rank of major in the United States Air Force. And my last count was that he was on the faculty at the Air Force Academy. That's where I'm going to try to reach him tonight.

I met him here when I gave my first talk in ESD. He was there. And he was there visiting, because he was a visiting professor up at Harvard, doing-- OK, are you ready for this? Ready for this?

He was doing empirical work on the brain-- not the mind, on the brain when it processes stories. And he's got these slides. I've got them right there on my computer today, but I do not feel comfortable even showing them to one other person. Oh, because I don't if he's published them yet. Not that I could do anything with them.

But they've got these scans of the brain. And they show the parts of the brain that are active during storytelling. [LAUGHS] Yeah, and his area is ethics. He's tried to relate the stories to ethics. I think his doctorate is in ethics. Or--

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** No, I have to find out. But hopefully I'll have enough to say-- hopefully I'll get permission from him tonight. Hopefully I'll have enough to say in plain language. I will not attempt to be a psychologist. But I don't know how he's got into the empirical work. Probably with collaborators.

But his background is in ethics. And it's all empirical. It's incredible, the stuff that he's doing. So this business of storytelling has caught on, and I think it caught on because something not totally irrelevant.

Well, what the argument I make, I do a historical analysis of all this. And what I say is that the interest really got started with Noam Chomsky, when Noam Chomsky said that the brain is wired for language structures. And that is that no matter what country you're born in, no matter what period of human development you were born in, after we became Homo sapien sapien, that the brain was wired for the same language-- it had the same language structures. You may learn different languages.

And the thing that gets the appeal in most people's minds about it, I think-- the broad appeal-- is that if you really want to teach a child-- a person a new language, teach them before they're what? Something like six years old? They will absorb it like a sponge. They're not smarter, but those structures are not cluttered. And they can learn more than one language. I don't understand how that go.

But Noam Chomsky started all this stuff off. And so then, a man by the name of Bruener I think it's B-R-U-E-N-- one-N-- E-R. I can check that spelling for you. I got it on my computer. Came along and said something that had a lot of philosophical import, and that was he made a distinction between understanding and meaning. So you can understand what a concept says, but you don't get the meaning until the concept is put into a story. That's the argument, and I buy the argument.

And as I said, storytelling and ethics goes back to Plato, all right? But it was lost because it got lost in religion over in the United States. And it also got lost because-- oh. Now I'm going to make a statement that I have argued before, but never written on, and never argued in a formal setting. That's how I'll put it. But I can talk to you about what I think, and you can criticize me.

I think that perhaps the main reason it got lost is that it got lost in Western educational systems, because you don't have a rigorous-- you don't have-- there is a rigorous method to test a good story from a bad one, but not instantaneously. Not like you can put it on a test, and I can say yes or no. It works itself over time.

And if you go to a drama class, the professor in there will make judgments-- this story is not any good. That story is a wonderful story. Students don't like that.

Why is it this is a good story? [INAUDIBLE] have got all of the pieces in it that this kid's got. Two years later, your story gets a Pulitzer. The professor was wrong. Got nothing to do with anything, OK? That's a story. That's a part of a teaching culture that's lost.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** Graded

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** To grade it right on the spot.

**AUDIENCE:** OK.

**TAFT BROOME:** And--

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** No.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** [INAUDIBLE] complain to the teachers.

**AUDIENCE:** And that's why it was lost?

**TAFT BROOME:** I think in recent times-- since the '60s.

**AUDIENCE:** Students have been [INAUDIBLE].

**TAFT BROOME:** I would put it even more precisely. I'm going to say that what happened is that students wanted objective measures of their work. They don't want subjective measures.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** I did. Yeah.

**AUDIENCE:** But I don't disagree with [INAUDIBLE].

**TAFT BROOME:** Well, what I think-- go ahead. Go ahead. No, I cut across you because I got excited. Sorry.

[LAUGHTER]

**AUDIENCE:** If you think I'm implying that the loss of this teacher saying good, bad, and no reason, you're saying that's a shame, and that's a bad thing--

**TAFT BROOME:** Yeah. [LAUGHS]

**AUDIENCE:** --I don't [INAUDIBLE].

**TAFT BROOME:** Yeah.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** What works is when you know the professor. And when the professor says, this is no good, you now know that in that professor's-- I don't want-- well, I want to say personality. But I want to say, in that professor's framework of understanding the world, that's a good judgment about my work. Somebody else, some other professor, would say something different.

Now, I've learned how the world operates. Because somebody is going to buy my product. Somebody else isn't.

**AUDIENCE:** [INAUDIBLE] certain people, and it just depends [INAUDIBLE].

**TAFT BROOME:** Yeah.

**AUDIENCE:** Do you think there's something that might be universal, that--

**TAFT BROOME:** Yes. They call it mythology. When it-- yeah, I think that the universal things work themselves out over generations. Frankly, I don't think it takes time to prove it per se. I think what you have to see is that over space and time, and the time measured in terms of generations, that the kinds of things that bother some generations, and cause them to criticize this piece, won't bother the next generation. But a mythology is going to get to every generation.

So in one generation, the Greeks don't like the Persians. And here comes a piece of work out of Persia. Well, somehow another one piece gets the Greeks. It came out of Persia, but it gets to them. Then the Greeks produce 10 generations, and the 10th generation doesn't care anything about Persian problems. [LAUGHS] It gets to them too.

There's another art form that's like that, more precisely, is poetry. Poetry. And it doesn't have to be rhyming poetry. Lucretius's *Nature of the Universe* is a poem-- the whole thing. What about the Quran?

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** Is it poem? *The Rubáiyát of Omar Khayyám* was a poem.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** Yeah.

**AUDIENCE:** The Quran [INAUDIBLE]

**TAFT BROOME:** I wouldn't know, the only Quran that I know that I have read was in English. [LAUGHS] Right.

But I tell you an illuminating, pleasurable experience I had sitting down, and this guy, I was sitting down with three people. One of them was from Italy. And this friend of mine walked in. I introduced him to this lady and said she was from Italy.

And this guy says that once a year, for the past 20, 30 years, he has gone to Italy to attend la Scala, because he loves opera. He saves, and that's what he does. That's his personal thing.

And so he's got sat there and read Dante's inscription over the-- [? maybe ?] he recited in Italian Dante's inscription over the gates of hell. I didn't understand a word of it. I thought that thing was the most beautiful thing I ever heard.

And I've got these books that I got a few years ago. I saw them in a bookstore. I saw the first one in the bookstore maybe five years ago, and I got the second one a couple of months ago-- volume one, volume two of Dante's *Inferno*.

What they do is each page, when you open the book, the right-hand page is written in English. The left-hand page is written in Italian. And it's got all of the lines numbered, so you can follow them. And you look over there. And because they use the same alphabet, you could see the rhyming.

And you can call the words. You could read it. I mean, I can't understand it, but I can certainly read the words. And I sit there and listen. But I say, oh, that's beautiful. [LAUGHS] And it gets into the brain, so you can remember it. That's was very important.

Another thing is now what people have said, it's the beginnings of a scientific perspective that will probably work itself out in a few years. And it's got to do with this whole business of what is called prenatal care. And apparently, Mozart's mother, when she was pregnant with him, used to sit down with Mozart's father, who was a musician. And he would play to the unborn baby. And then up comes Mozart.

But there is some strong evidence that music and storytelling has some effect on the unborn that's positive. It's the rhythm of it.

So you asked me, how did I get involved in the storytelling, and that's my long story. That's about a third of it. But, yeah, Joseph Campbell [INAUDIBLE].

I had one other experience that I want to share with you. About 10 years ago-- make it 10. Make it 10 years ago. Make it 12 or 15 years ago. I can't remember. The American Association of Engineering Societies-- AAES-- got some visitors. I'll tell you when it was. I'll tell you when it was. When did the Berlin Wall come down? It was a year after that.

**AUDIENCE:** 1989. 1989.

**TAFT BROOME:** OK. All right. It was--

**AUDIENCE:** [INAUDIBLE] the USSR broke up--

**TAFT BROOME:** Yeah, keep going.

**AUDIENCE:** --[INAUDIBLE] Which came first?

**TAFT BROOME:** The wall.

**AUDIENCE:** The wall came down first. So '89.

**TAFT BROOME:** Let's try '92. It was a year after. AAES got these visitors from-- which was no longer the Soviet Union-- from Russia. And they were philosophers. And they were visiting the United States, and going around.

And they wanted to talk with the ethics committees of the various engineering societies. And so I was invited to come down and meet with them when they came to AAES. I had fallen out of favor with them. Somehow I got it partially back.

And it was a group of about six professors, and then some others who were with them. And there was an old person with them. And there was this woman, who I hesitate to say-- her age is important. She was in her early 30s. But she spoke English very fluently. That's important.

The old man didn't say anything. He looked like a sage, a very impressive-looking man. And it was clear somehow when they began to talk Russian among themselves that he was the leader.

So they opened up the session, and one person said that the reason that they had going on this tour is that it has become very clear that Western culture is going to penetrate Russia, but they don't want the decadence to come along with it. [LAUGHS] And so they want to understand it very well, and go back and craft, and make sure that their universities, quote-unquote, remain-- I tell you what's too strong a word. "Pure."

**AUDIENCE:** Pure of, like--

**TAFT BROOME:** Find a word for me.

**AUDIENCE:** I don't know what you were [INAUDIBLE].

**TAFT BROOME:** They want to-- in other words, there's a price to pay for everything. They didn't want to pay a big price for Western ethics-- the self-interested part that leads a person to be what they call decadent.

**AUDIENCE:** So they wanted to rename the aesthetic? [INAUDIBLE].

**TAFT BROOME:** All right. I guess what I mean is that if you were sitting in that room, you'd get a different meaning than I got. So I don't want you to have enough freedom to say that even if you were there, you would interpret what you said maybe a little bit differently. So we had these discussions.

And so the old man is sitting there not saying anything, sitting back, very wise, and occasionally one or the others would come back and say something to him in Russian. He would say something back. Then they would nod their heads and come back to the discussion.



And at about 4/5 of the way through the discussion, I don't know what it was that I said. That man leaned across the table and started speaking in English. [LAUGHS]

**AUDIENCE:** Really?

**TAFT BROOME:** And all of the Americans sitting around there thinking that he couldn't speak any English. And he started speaking in English. And I had put a question to them, and he answered the question by telling a story.

So I've talked to other people since then, and there seems to be a cultural trait outside of the US where old people are given the privilege of answering questions and giving advice by telling a little story. Tell you directly. And you're supposed to think about that and carry that with you where you go.

So this is a globalizing world. And my instincts tell me that if you develop this allegorical technique, that you'll have a lot of listeners when you get out of here.

So Thursday. But we were still on Thursday, right. So Winston won't be here. I'll do something. Gbadegesin is supposed to arrive at 1 o'clock. He's got somebody picking him up. And I'll be talking to him in my office probably about 2:00 or 3:00.

And Wednesday, he and I will be crafting out, among other things, Thursday together. We agree on the general, or [INAUDIBLE] generally. We talk about it in general. But he's mainly here so that we can work on our grant. He could work on that on Wednesday.

On Thursday at, let's say, 10:00, maybe a few minutes, quarter to 10:00, a few minutes before, you're all invited come to my office. There is a style of treating visitors that I practice. It used to be a big thing at Howard. I've seen it in other places. And that is, when you get a speaker to come to your class, or when a speaker is giving a talk to your department or whatever, you get together with the person a little bit beforehand. And some of the people that are going to be there are there beforehand.

You kind of talk. Pass some wine around. I'm not authorized to have wine and eat [? 38. ?] But--

**AUDIENCE:** Not at 10:00 in the morning.

**TAFT BROOME:** Not in here.

[LAUGHTER]

And then you walk over together. So that's what we're going to do. And You all are invited.

**AUDIENCE:** So around 10ish?

**TAFT BROOME:** Around 10ish. We're both going to be using PowerPoints, so even though that's going to be pushing it, I'll want to get here just as this class is over to plug in everything.

Then I will open the class up. I don't know how many people are going to be here with all-- I don't know. Tony just said that they've got posters all over the university about those things-- all over the institute. And I know it went out on the web-- MIT web.

I only got-- yeah.

**AUDIENCE:** How do you feel about [INAUDIBLE].

**TAFT BROOME:** Since I'm already on OpenCourseWare, of course, we just have to tell people what you're doing, in case they want to say something. The only person know for sure-- only one person called back, said that he was coming, is a professor-- a senior professor, actually, over in Brain and Cognitive Sciences. So I invited him to come to my office early. And if he does, I'll ask him if he'd be willing to stand by during the Q&A period for anything on this business.

He knows Cynthia Winston personally, so he was really coming to see her. And then I told him that she wouldn't be coming. He said he would come anyway. [LAUGHS] All right. And his name is Alan Hein. Don't know if you know him.

Then, when we come in, I will call class to order and say what we're going to do, that we've got three presentations, two panelists. One is not able to be with us, so one panelist will give some introductory remarks to her presentation.

And then I'll say something about the structure, that we have two panelists, and we have a panel chair. We have a rapporteur, who are students in the class. Then I will introduce the panel chair, and I will sit down.

And we're going to have PowerPoints. So let's decide now on how we're going to sit. Normally, the panelists face the audience. But everybody's going to want to see the screen. So how do you think we should do this?

**AUDIENCE:** Do you want to sit while you speak, or do you stand.

**TAFT BROOME:** I want to stand while I speak, but when I'm not speaking, I want to sit and see the screen.

**AUDIENCE:** Yeah. So, I mean, [INAUDIBLE].

**AUDIENCE:** All four of us [INAUDIBLE].

**TAFT BROOME:** And look right here at the screen?

**AUDIENCE:** Mm-hmm.

**TAFT BROOME:** OK. That would work. I just have one actual concern. Maybe I should start it up at the end of class. If I got time, I'll put it.

I have three slides where my picture is not on the PowerPoint as an insert. It is the background. OK, so it's the whole thing. I tried this once before in here. You couldn't see it too good unless you set far back. But I can't think of a better way to do it than to have it as background.

Why don't we do this? The chair-- depending on how many people are here, we'll have to make an ad hoc decision as to how to handle it if it doesn't come up. Then the chair.

Then I am going to talk. I mean, I'm going to give 10 minutes on narrative psychology.

**AUDIENCE:** So before that, you want [INAUDIBLE].

**TAFT BROOME:** Well, now how does the panel chair want to do it? The panel chair will say, the title of this panel is "Narrative Ethics." And we're pleased to have three presentations and two speakers. And then the panel chair will say, our first speaker couldn't make [? it ?] with this today. Don't say, couldn't be here today, because today that sounds like [INAUDIBLE] was buried. [LAUGHS] I'm just kidding about that.

But what's normal? You've been to these conferences. What do people normally say? Our first panelist, Dr. Cynthia Winston, sends her apologies. She couldn't be here with us today. She has sent down some things for us to talk about. And Dr. [? Broom ?] will give a 10-minute presentation. We are honored to have Professor Hein here from Brain and Cognitive Sciences here at MIT, who's agreed to take on some questions, and even make some comments during the Q&A period.

And so I'll get up and do 10 minutes. Hopefully I'll have some slides. Then I sit down. And then--

**AUDIENCE:** It's on narrative psychology.

**TAFT BROOME:** On narrative psychology. Then you will introduce Dr. Gbadegesin. Now that requires some effort, OK. His name is Nigerian. G-B-- Gba. De. Gesin. B-A. Gbadegesin. [INAUDIBLE]. Gbadegesin. OK.

And in the 10, 20 minutes that we have together before we come over, a good time to say, well, how would you like to be introduced? Many times, a person will have with them a little 3 by 5 card, and have two lines on there for you to use.

And then he'll get up and do his piece. He will have a PowerPoint presentation, which is unusual for philosophers. Be prepared for this. I've seen him give two outstanding talks-- two talks, and both of them were outstanding.

But he did something that engineers never do. 30% of the time philosophers will do it. That is, read the whole thing. And the reason is that their use of the English language is so precise that they cannot memorize the whole thing. And if they're talking leisurely, get one thing wrong, another philosopher will pick it up and crack the whip on him later. And so they'll read it.

And every time I've seen an engineer do that-- and I've seen it happen a couple of times-- the whole audience were dead asleep.

[LAUGHTER]

But philosophers will sit there, and they'll listen very carefully to every word.

So I don't know what he's going to do with his PowerPoint. But he will cover two things. It will be on cross-cultural ethics. Now that's pretty much the title.

And he will also talk something about something we did not want to discuss in this class as the major topic, which is bioethics. But I've said before, the best way to understand what a thing is to also understand what it is not. Remember the monks in the yellow monastery. They didn't even know what yellow was until they saw what it was not. So he'll talk a little bit about bioethics.

I don't know what he's going to say, but I know what he's said before, and I know what his main thrust is, and that is that ethics can be universalized over all cultures and at all points in time. But the way people express ethics differs greatly over all cultures, and over all the time. And he's got examples. Joseph Campbell does that too.

So that's what I would anticipate is what he's going to do. And we're going to meet this afternoon and tomorrow, and I would not presume-- it would not even occur, come into my mind, to tell him what to talk about. He's going to talk about what he wants to.

Then he'll sit down. There may be a few burning questions. Then I'll get up. And the title of my presentation is "The Narrative in Engineering Ethics."

Now I want to spend a few minutes today, before we get out of here, depending on what you all want to talk about, on what I want to say on Thursday, because I don't want you to have to listen too closely to what I have to say. I kind of want you to be thinking about the rapporteur kind of stuff, and [? why ?] you're going to ask questions Q&A.

So I also want to test it on you. [LAUGHTER] Get some feedback. But I'd like for you to really have your brains [INAUDIBLE] Gbadegesin has to say, because you've been hearing me all year, semester long, all right?

And then we'll have the Q&A. Q&A is not exactly what I ever-- people can make comments too. You don't have to phrase them as questions. But once they've made a comment, then the panelists can make a comment on their comment.

And then, once that's over, then you thank everybody for coming. And technically, you're supposed to give the class back to me. But I don't know. If there are 30 people in here and they applaud for 5 seconds, then the class is over. I won't be able to say anything. People will be walking out and talking.

But I have the responsibility for the class. I will delegate my authority. [LAUGHS] OK.

[INTERPOSING VOICES]

**AUDIENCE:** --when did you want the rapporteur? Rapporteur.

**TAFT BROOME:** I'm sorry. The rapporteur. I forgot about the rapporteur. The rapporteur comes up and--

**AUDIENCE:** Before the Q&A?

**TAFT BROOME:** Before the Q&A, because the rapporteur would be subject to Q&A. And the rapporteur will spend five minutes or so talking about what each person said, and sort of inspiring the audience to ask certain questions.

**AUDIENCE:** [INAUDIBLE] questions or comments in between [INAUDIBLE] other people [INAUDIBLE].

**TAFT BROOME:** I would like for it to be burning questions.

**AUDIENCE:** OK.

**TAFT BROOME:** So if you got something that can't wait, ask it. But otherwise, save it.

**AUDIENCE:** OK.

**TAFT BROOME:** All right. Now let's talk a little bit about skills management in a scholarly forum. OK.

One day I was chairing a panel at a conference at Johns Hopkins. Forgot what the topic was on. One of the speakers was Dr. Rochelle Hollander, who just retired this past, I think, February. Well, at least put it this way. We gave her a retirement party at the [? triple-AES ?] meeting in February, and had a panel session at the conference for her. And it was standing room only in there. She was head of the Ethics and Values program, and had been there, like, 30 years.

And it was a good attendance in there. President [INAUDIBLE] came in there.

And I told one story that I had had with her. It was a good time, so we were sort of like roasting her. And that was the time when I was doing this thing over at Hopkins.

And you all ever heard of Student Pugwash? Well, it was an international conference of Student Pugwash. And we were in a large room. And up in the balcony, they had all of this equipment, and people up there. That's important, OK?

And just before the panel started, like, within a minute, the organizers of the conference literally ran up on the stage and corralled me and Rochelle, and said that they-- they used two words-- infiltrated and attacked. Attacked. They said that the audience had been infiltrated by what they called Lyndon Larouchers.

That's a legitimate organization in the United States, mainly of young people. Lyndon Larouche himself is my age. But I don't know-- let's put it this way. My best way of describing that organization is that they have left-wing positions but right-wing tactics. They'll come in and take over your program, and they have a taste for violence.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** Look it up on the web.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** Larouche.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** You heard of him.

**AUDIENCE:** Yeah, they [INAUDIBLE].

**TAFT BROOME:** Handing out leaflets.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** OK.

**AUDIENCE:** I didn't realize that they [INAUDIBLE] violence.

**TAFT BROOME:** Well, they--

**AUDIENCE:** In the question and answer period [INAUDIBLE].

**TAFT BROOME:** Yes.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** No, they'll interrupt you while you're at it.

**AUDIENCE:** Oh, really.

**TAFT BROOME:** If you say something that's out of line from their program, they'll interrupt you while you're at it, and then take over your program.

So I said, well, there's only two things we can do. Number one, this is a scholarly public program. We cannot forbid anybody from speaking. But as chair, I have the parliamentary powers to keep anybody from dominating the program. And if they try to dominate the program, I'll make it a case where they have to get violent with me to stop me. And if they get violent with me, they'll be on-- [LAUGHS] I pointed up there where all of those cameras.

And that's what I did. I announced it right out. I said, now if anybody does not want to respect my parliamentary powers, then it would be a matter of where you have to bring violence to the stage, and you will be on tape, and we will tape you right down to the *Baltimore Sun* and the *Washington Post*. And I-- [LAUGHS]

Well, all I'm saying is that I've seen scholarship at its best. I've seen it at its worst. I've seen it in cases like this one, which was not necessarily the best, but certainly could have been the worst, and was avoided. It turned out to be all right. They had got up and said what they had to say, but they didn't try to be belligerent over the thing.

So I'm saying that when you're chairing a scholarly session-- attending and chairing a scholarly session-- that everything is not routine all the time everywhere. And that your first obligation is to good scholarship.

Anything else on that?

**AUDIENCE:** [INAUDIBLE] since we were [INAUDIBLE].

**TAFT BROOME:** So both of you want to be chairs, and then both want to be rapporteurs?

**AUDIENCE:** We were both going to give, like, a two and a half minute response, instead of both-- instead of one of us giving [INAUDIBLE].

**TAFT BROOME:** All right.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** Yeah.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** OK. And what about chairing it? We're going to have two chairs?

**AUDIENCE:** [INAUDIBLE]

**AUDIENCE:** Well, we could do-- like, I could introduce [INAUDIBLE] [? Gbadegesin, ?] and you could do everything else [INAUDIBLE].

**TAFT BROOME:** All right. OK. All right. So then I'll turn it over, the conference, to you.

**AUDIENCE:** To me.

**TAFT BROOME:** And you manage it from there. And [INAUDIBLE] if the flow is right, you give it back to me at the end of class. If people are walking out, no point. [LAUGHS]

So I would imagine-- I think we can expect a minimum of five people. Who knows, with all of this advertising, what the walk-ins might be. So be prepared for the whole place to be filled up. Be prepared for--

My-- I don't know. I have it figured about five or six, seven people. And that'd be about right for us.

Unless you have some other issues, I want to go back to vocabulary building-- actually, not vocabulary building. Vocabulary strengthening. You already have these words and terms.

Here's some words and terms that I would like to cover today, in addition to some others. All right, and one of them is "learned discipline."

What do you mean when you say mathematics is a learned discipline? What do you mean when you say carpentry is not a learned discipline? What do you mean by that?

Is engineering a learned discipline? Is ESD a learned discipline? Is education a learned discipline-- itself-- not what we do.

What does it mean? What does it mean to engage [? to ?] learned disciplines. We did go through that a little bit. And I'm going to go through it on Thursday.

But I really would like to know what does it mean to say that ethics is a learned discipline, and what does it mean to say that engineering is a learned discipline? Can you prove that engineering, in fact, is a learned discipline? Or does it get all of its first principles from science and mathematics? That's a question that is debated.

**AUDIENCE:** [INAUDIBLE] What was that last bit you just added? But it seems like you made a contrast between [INAUDIBLE]. If it's not a learned discipline, that's because [INAUDIBLE].

**TAFT BROOME:** Well, we have to define what we mean by learned discipline first.

**AUDIENCE:** Yeah, OK.

**TAFT BROOME:** All right. So we'll do that-- I hope. That's why I laid that one down first.

What is a profession? That's another question? What is a profession?

And here's a good one for you. What does it mean to profess? And after you've got what it means to profess, then tell me what a professor is. [LAUGHS] "One who professes"? That's what it used to mean.

Some other terms are going to come up. Oh, I got a term for you. I was just looking at this this morning. Didn't finish it.

What does the word "safety" mean? What does the word "risk" mean?

Here's another word. We talked about responsibility, authority, and accountability. What about liability?

Going back to risk. What does the term "risk assessment" mean? What does it mean? What does "acceptable risk" mean? What is it? What is an acceptable risk?

And what does the term "risk perception" mean? It usually means willingness to take the risk. [LAUGHS]

Why don't we go through some of these terms, and words and terms. Start with the first one.

**AUDIENCE:** Learned discipline?

**TAFT BROOME:** Learned discipline. And let's have a discussion first. I have definitions for these terms and words. But I'd like to have your thoughts and feelings about these terms and words. Now we can go back, like we did, to the web or dictionary any time. All classes are open for revision of anything that we have covered before, or anything that I have said before.

**AUDIENCE:** So maybe we can start with [INAUDIBLE] learning discipline as a body of knowledge and skills, [INAUDIBLE]. A body of knowledge and skills such that where are the [INAUDIBLE]. In other words, not everyone [INAUDIBLE].

**TAFT BROOME:** Feel free.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** I don't know. I want you to do with-- I want you to feel free.

[LAUGHTER]

**AUDIENCE:** Well, [INAUDIBLE].

**TAFT BROOME:** Well, you put down some words. Now I'm going to ask, well, you said what a learned discipline is.

**AUDIENCE:** Well, I started [INAUDIBLE].

**TAFT BROOME:** Yeah.

**AUDIENCE:** I mean, I'm not sure.

**TAFT BROOME:** Is that definition going to help us decide what is not a learned discipline? Or is everything going to qualify if it has-- OK, go ahead.

**AUDIENCE:** In thinking about it, with the characteristic of-- and then there's a list of characteristics that make something a learned discipline. And then what you were suggesting is that without the characteristics--

So, I mean, and then we could satisfy both explaining what it is and what it's not. That would be one way to [? set it straight. ?]

**TAFT BROOME:** OK. And what I like about this is she's got a structured approach. [LAUGHS].

**AUDIENCE:** [INAUDIBLE]



[LAUGHTER]

**TAFT BROOME:** Well, first of all, now let's interrogate this. When I use the word "interrogate," that's what I--

**AUDIENCE:** [INAUDIBLE] [? construction? ?]

**TAFT BROOME:** No.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** Let's just interrogate everything that's up there, all right? And I'm using the word "interrogate" because I want to just tell you that what I come up with in the end, that I spend a lot of time on, is not necessarily better than what anybody else has, but it fits into my book, OK? The point that I want to make is that it's going to look a whole lot like this.

So when I interrogate it, I'm not trying to tear it down, all right? So let's interrogate it so that we can understand it better.

**AUDIENCE:** [INAUDIBLE] comfortable-- I'm pretty comfortable with the body of knowledge.

**TAFT BROOME:** All right.

**AUDIENCE:** [INAUDIBLE] that.

**TAFT BROOME:** Wait a minute.

**AUDIENCE:** I don't know about abilities. Something [INAUDIBLE].

**AUDIENCE:** So there's knowledge, and then there's different abilities. Essentially [INAUDIBLE].

[INTERPOSING VOICES]

**AUDIENCE:** Like you said--

**AUDIENCE:** --a skill set.

**AUDIENCE:** You can comprehend. You can evaluate. You can assess. You can synthesize. You can [INAUDIBLE]. But maybe you're right. Maybe we'll wind up--

[INAUDIBLE] is just the knowledge. And then the ability associated with that knowledge, or something else.  
[INAUDIBLE].

**TAFT BROOME:** Well, first of all, what a dictionary is going to say-- I think a dictionary-- many encyclopedias are going to base it, start off with this term "body of knowledge." Well, that's the one I want to penetrate.

We've studied ethics all this semester. Did we produce any knowledge? Is ethics about the production of knowledge? Does ethics have any knowledge in it that you can't get from someplace else-- like, for example, science?

That's a hard question.

**AUDIENCE:** It has, I mean, to be a scholar of ethics, it requires knowledge of what other people have said about ethics.

**TAFT BROOME:** Now what I want you to do is somewhere above the term "body of knowledge," maybe with an arrow, I wanted you to write this man's name. His name is Bernard Gert-- G-E-R-T.

And he is at-- why is this university escaping my mind. In New Hampshire. In New Hampshire? Yeah. What university? Dartmouth. He's at Dartmouth-- unless he's retired. All of my buddies are gone now.

Bernard Gert wrote a book called-- he's a philosopher and an ethicist. He wrote a book called *Moral Knowledge*. But he has a view that I don't think is widely shared, even though his view is as defensible as anybody else's, because we want to talk about ethics having more to do with value judgments than knowledge.

**AUDIENCE:** Yeah, I guess that's why I added abilities. Because there's, in a learned discipline, there's information you need to have. And then there is something that you do with that information. And that's the way I think of ethics. Like, I've needed to understand [? the ?] vocabulary and techniques, strategies for looking at a dilemma, and then apply those techniques to make value judgments to say what's permissible and [INAUDIBLE].

**TAFT BROOME:** OK. Now most people, I think, when we begin to talk about a learned discipline-- when I say most people, most scientists, certainly including the social scientists will be happy with that, including the mathematicians.

The humanists are going to be divided on it. And the arts people are going to have a whole lot of trouble with it, knowledge being the basis of-- in other words, they're going to say that music is not really about knowledge or how you handle knowledge.

Now what they come up with in the end is going to be something that you probably wouldn't feel comfortable with. When I say "you," I mean scientists and engineers and, you know. But they're going to say that this whole business of knowledge is overworked. There are other things that we do with our minds other than produce knowledge. And what they'll say is that our capacities for learning include the cognition, which is our underlying ability for knowledge-- gaining knowledge, and making knowledge statements, and justifying knowledge statements.

But what will happen before you're done is that the scientists, the mathematicians, half the engineering scholars, but not all of them, are going to say, well, that the cognition is what separates the human being from the beast. Right?

Half of the humanists are going to go back to the psychologist and say, well, look. There's such a thing called the [? affect. ?] And out of that is where we get love and all of these other things. And that's what separates man from beast. [LAUGHS]

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** Go ahead.

**AUDIENCE:** This is all [INAUDIBLE] knowledge-based. You're saying that it's [INAUDIBLE].

**TAFT BROOME:** No, I'm not saying anything. I'm interrogating. I haven't taken a stand yet. I will take a stand Thursday. I'm getting you ready for my stand. It looks like we're not going to have a whole lot of time for me to finish it today.

Let me tell you what--

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** I don't know.

**AUDIENCE:** [INAUDIBLE] practice, right?

**TAFT BROOME:** But you're doing so well.

**AUDIENCE:** I know.

**AUDIENCE:** Well, I would like to flesh out our definitions a little bit.

**TAFT BROOME:** OK. Here's what I want to say. Here's what I want to say. I'll tell you, why don't you sit at the edge of the table? You may have to go back to the board. No, go ahead. Do what you want to do.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** Here's what I want to say. All right. I want to say that there are four learning capacities. Now, I have invented none of this. And one is our capacity to make knowledge statements and justify them. And we talked about a knowledge statement, what it looks like.

We've got another six minutes.

**AUDIENCE:** [INAUDIBLE]

**TAFT BROOME:** Six minutes. And we talked about rational knowledge and logic. We talked about empirical knowledge and facts.

We have another capacity called the [? affect. ?] And that capacity enables us to make value judgments and to justify them. We not only say that water is a liquid. We are also able to say something very different-- water is good.

And when I say water is good, now here's where Bernard Gert would get into this discussion. He's going to say that's a knowledge statement. And most people will say that's not a knowledge statement. It's got nothing to do with logic. It's got nothing to do with a-- well, it has something indirectly to do with an empirical test. But that's not the end. The end is feeling good.

There's another one. The other two-- I said there were four-- the other two go together. I'm going to go through this on Thursday, but I'm going to use the next five minutes to get you started, because I want you to think about this.

There is such a thing called a commitment pathway. I might have mentioned it before. And the commitment pathway is from wishes to wants to intentions to action. And you get from a wish to a want with hope. So you may wish for \$100 million. You start wanting it when you've got some hope of getting it.

You go from wants to intentions with self-esteem. In other words, you may want \$100 million, but unless you think that you have the ability to get it you won't have the intentions to get it. You'll just sit back in pain of wants without intentions. And then, to get from intentions to action is what we call the will.

And this pathway is just as important in life as knowledge and values. As a matter of fact, if you read the German scholars, they will say, this is more important than knowledge and values. And their starting point for saying that is, if you deprive me of knowledge, and if I have some conflicting values, I can still make it in the world if I can prosecute this commitment pathway to having my way.

Now when you devote scholarship to this commitment pathway, there's a word that nobody agrees on, but everybody will see the point in saying that great scholarship devoted to the part of this pathway from wishes to wants to intentions-- we can call praxis-- P-R-A-X-I-S. There are other words, and then most people have no word for it.

And this part, from intentions to action, is called practice. And few people will disagree with the use of that word, from going from intentions to action.

And what I want to say, then, is that underlying praxis is a term-- I'll give you another term, just like we have the cognition, called the conation. And underlying all of this practice is what you call psychomotor skill. Psychomotor skill is informed by praxis. It's a term used to include all of these things here-- the will, self-esteem, hope.

I'll lay it out more in a chart, I guess, better than today. But we've got no more minutes left. Let me go over time about 30 seconds maybe. Gesundheit. Let me just say that if you find sciences-- science-- the sciences and mathematics in the cognitive area with the production of knowledge, and if you say that ethics and the humanities are in the values area with the [? affect, ?] you'll find engineering and the performing arts over here.

I'll have a better definition of the learned disciplines. But you'll be surprised, [? Miss ?] [? Bethany, ?] that it'll look a whole lot like that. Better to use this structure to get it. Thank you.