IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF PENNSYLVANIA

TAMMY J. KITZMILLER, et al., Plaintiffs	:	
	:	Case Number
vs.	:	4:04-CV-02688
DOVER AREA SCHOOL DISTRICT;	:	
DOVER AREA SCHOOL DISTRICT BOARD OF DIRECTORS,	:	
Defendants	:	

AFTERNOON SESSION

TRANSCRIPT OF PROCEEDINGS
OF BENCH TRIAL

Before: HONORABLE JOHN E. JONES, III

Date : October 24, 2005

Place : Courtroom Number 2, 9th Floor
Federal Building
228 Walnut Street
Harrisburg, Pennsylvania

COUNSEL PRESENT:

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For - Plaintiffs

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For - Defendants

Lori A. Shuey, RPR, CRR
U.S. Official Court Reporter

I N D E X

WITNESSES

THE COURT: It appears Mr. Walczak is up. You may commence cross-examination.

MR. WALCZAK: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. WALCZAK:

Q. Good afternoon, Professor Fuller.

A. Good afternoon.

Q. What does heuristic mean?

A. Heuristic? Well, it's from the Greek -- it's a method of discovery. It's something that helps you imagine situations so that you can come up with hypotheses in science. It's a term that's widely used in the philosophy of science. It originates with William Whewell, who is another author of one of those Bridgewater treatises that I mentioned earlier.

Q. So it relates to teaching and understanding?

A. That's right, the context of discovery, correct.

Q. And you would agree with me that the Dover four-paragraph statement that's read to the students is not altogether clear?

A. Yes, that's true, it's not altogether clear, yes.

MR. WALCZAK: Your Honor, may I approach?

THE COURT: You may.

BY MR. WALCZAK:

Q. I show you what's been marked as Plaintiffs' Exhibit 131. Have you seen this document before?

A. Yes, I have.

Q. And you know this is the four-paragraph statement that's now being read to the students?

A. Yes, I do know that.

Q. You would agree that saying that a theory is not a fact conflates the scientific use of the term "theory" with the colloquial understanding that it is simply an opinion or a hunch?

A. Let me see. Where are you referring to here?

Q. If you would look at the second paragraph under Number 4 there.

A. Okay.

Q. It reads, Because Darwin's theory is a theory, it continues to be tested as new evidence is discovered. A theory is not a fact.

A. Yes.

Q. And so that is somewhat misleading. Is that correct?

A. What do you mean exactly?

Q. Well, evolution is -- first of all, evolution is both a theory and a fact. Correct?

A. Yes, I have said that, yes.

Q. And in science, a theory is never going to turn into a fact. Is that correct?

A. Yes, that is correct.

Q. And this suggests to students that a theory could become something more, could become something more like a fact and that would be more reliable?

MR. GILLEN: Objection, Your Honor. Calls for speculation.

MR. WALCZAK: Your Honor, it's supposedly within his expertise.

MR. GILLEN: It's not within his expertise. He hasn't been qualified in education. Even if he was an expert, he can't speculate as to how a student would see it.

THE COURT: Well, he's not been offered as an expert in the education realm, but I think it's a fair inquiry based on the latitude that I gave during his testimony in chief. So I'll overrule the objection. He can answer the question.

THE WITNESS: I actually think it's more ambiguous what's going on there. I mean, you seem to imply that there is this kind of gradation going from theory to fact. I kind of read it a bit more straight. You know, namely, a theory is not a fact,

it's something else.

BY MR. WALCZAK:

Q. Professor Fuller, do you recall having your deposition taken?

A. Yes, by Mr. Rothschild.

Q. And that was on June 21st, 2005?

A. That's correct.

Q. And you were under oath?

A. Yes.

Q. And you swore to tell the truth?

A. Yes.

Q. And you did tell the truth?

A. I hope so.

MR. WALCZAK: Your Honor, may I approach?

THE COURT: You may.

THE WITNESS: Thank you.

BY MR. WALCZAK:

Q. I'd ask you to turn to Page 111, please.

A. Okay.

Q. And on Line 6, Mr. Rothschild asked you, A theory is not going to graduate into a fact; right? And the answer was, Right, exactly, exactly. No, I mean, I do think there is -- that the tone of the statement is a little confusing. I mean, so I'm agreeing with Miller on that point. Did I read that

correctly?

A. Let me just see this for a second. But what I'm agreeing with Miller on is, I can understand why he sort of sees it that way. I wasn't necessarily saying that I had some definitive view about what the statement meant, but rather that I was sympathetic to -- you know, I could see where he was coming from in finding this problematic. That's all I was saying. I can, you know, understand him.

Q. Well, let me direct your attention to the first line on Page 111 where it says -- and this is your answer, and certainly you can refer back at the question. But let me just read that portion of your answer. It says, But I was agreeing with the fact that the statement did look, did seem to want to denigrate something by being called a theory as if being a fact would be the really epistemically significant thing. Right? Did I read that correctly?

A. You read it correctly, yes.

Q. And so that's what you testified to in your deposition on June 21st?

A. Well, I did say that, but I don't know. I mean, I didn't necessarily -- I mean, I guess I was just kind of following through Miller's thinking and sort of rethinking his thoughts and thinking it did

make sense what he was saying.

But I wasn't making -- I mean, keep in mind this was the first time I had actually seen this Dover statement during the deposition to any great extent, so I was kind of forming opinions as we went along.

Q. So that would be very similar to what the students are experiencing, because they're only seeing the statement for a snapshot?

A. Yeah, but, I mean, the students don't come into it with the kind of baggage Miller and I have.

Q. And you also have expressed a problem in the fourth paragraph. Matt, if you could put 131 back on, please. If you could highlight the fourth paragraph, please. And you said you thought this was kind of a, quote, downbeat ending, because what we should be doing is trying to encourage students that science is fascinating and interesting, not that it has to --

A. Can you direct me to something in the deposition?

Q. Well, I'm asking you a question.

A. Oh, sorry. I thought you were quoting me.

Q. Well, I may be.

A. Well, if you are, can you tell me where it is? Because I'd like to know --

THE COURT: The way it works, Doctor, just

so that we're all clear, Mr. Walczak will ask you a question. If he sees the need to access your deposition testimony, then he'll do that following the question, but he's not bound to relate the question to the deposition testimony in the first instance.

So I'll ask Mr. Walczak, since we've cleared up that confusion, why don't you restate your question. And this is not a question that is necessarily grounded -- it may or may not be -- in something that you said at the deposition, and it's not a question that calls for you to access the deposition testimony. So with that, Mr. Walczak, if you would resubmit your question.

MR. WALCZAK: Thank you, Your Honor.

BY MR. WALCZAK:

Q. I really am just interested in your testimony today, Professor Fuller. So you think that the ending of this four-paragraph statement is downbeat because what we really should be doing is trying to encourage students that science is fascinating and interesting and not that it has to be taught because of the standards. Is that correct?

A. Yeah. But if this is going to be the only way they can actually end up allowing intelligent design as a possibility, then one lives with it. I

wasn't a party to how this statement was drawn up. So there's a sense in which I don't know what the alternative possibilities were of which this was the one that we now see before us.

Q. Well, certainly they could have said something about how science is wonderful and marvelous and you should take great joy in studying this, instead of simply saying, we have to study this because it's in the standards?

A. I guess unless I knew what the options were in terms of what alternative versions of this statement were on the table, I could make a clear judgment on that, because it seems to me at the end of the day what is good about the statement is that it actually does present an alternative that's available. And if this is the only way they could have done it, then, you know, so be it. I'm not a party to the discussion.

Q. And so you would presume that the purpose of reading this four-paragraph statement is to provide information to students about this alternative of intelligent design, and this is a way of promoting open-mindedness about science and exploring different views, I mean, really everything that you talked about in your direct testimony today?

A. Well, that's -- I assume that's what's going on, yes.

Q. But you're also aware, are you not now, that, in fact, under the Dover policy, students are not allowed to ask questions about this statement or about intelligent design and teachers are not allowed to discuss it? Is that your understanding?

A. I do know that, yes.

Q. And so you would, in fact, agree with me that this gag on any discussion really defeats this purpose of promoting open-mindedness and discussion?

A. Well, it seems to me that, again, what are the alternatives here? And the gag is not stated in the statement.

Q. But you are aware that there is no discussion allowed?

A. Yes.

Q. And that gag on discussion, knowing that it, in fact, exists, defeats the heuristic purpose of the statement. Wouldn't you agree with that?

A. If you mean defeat like completely obliterates it, no.

Q. Could I ask you to turn to Page 140 of your deposition, please. If you could read quietly, perhaps to yourself, 140 to 142.

A. Okay.

Q. I'm not trying to trick you here, Professor Fuller.

A. I hope not. Where should I start on 140?

Q. Actually, you could start on 141 on Line 20. It says, Superintendent Dr. Richard Nilsen has directed that no teacher will teach intelligent design, creationism, or present his or her or the board's religious beliefs.

Well, let me just help you out. And then the next question is, How is the objective you discussed accomplished if students are simply being told, here's intelligent design, but then they're not allowed to discuss it? And then your answer is, I didn't -- well, I'm endorsing this view -- I'm not responsible for this view. I don't, at least as far as I understand, I don't endorse this. Now, did I read your answer correctly there?

A. Let me see if I understand what I said. What I'm saying is, this is not how I would handle it. That's what I'm saying. But, you know, I'm not there. And if this is the only way this statement -- it's going to make this possibility available, it's going to come about, then one lives with it. But I'm just saying, you know, this is not what I would do, but I'm

not part of the Dover School Board.

Q. Okay. Let's go back to Page 140 and Line 17 so we know exactly what --

A. 140, Line -- Page 140, Line 17?

Q. Right.

A. Right, okay.

Q. And this is what you're talking about promoting in Dover. It says, Namely, we're talking about how to take science forward in the future, and it seems to me we sort of betray kind of the open-mindedness that we take to be -- you know, we take science to exemplify as a hallmark of our civilization if we don't -- you know, if we don't present students with the possibility that science is something that's still very open for very fundamental forms of inquiry. And the best way to do that is to show how one might study something like life starting with fundamentally different assumptions from the taken-for-granted view, because otherwise we're stuck with just teaching dogma science. Did I read that correctly?

A. Yes.

Q. And then back on Page 142, Mr. Rothschild asked you, So the Dover policy of simply making students -- of telling students about intelligent

design but not -- then not allowing them, allowing the teacher to talk about it doesn't accomplish the objective? And your response was, It defeats the purpose, yes, that's true, yes. Now, did I read your answer correctly?

A. Yes. But defeats does not mean obliterate here. It certainly undercuts the impact that it can have, but it's better than nothing.

Q. You're not a scientist, Professor Fuller?

A. I am not a scientist, that's correct.

Q. You're not an expert in any of the biological sciences?

A. No, I am not.

Q. You're not an expert in any of the natural sciences?

A. No, I am not.

Q. You're not a paleontologist?

A. Certainly not.

Q. You're not an expert in education?

A. No, not, I guess, by the standards you would consider an expert.

Q. Do you consider yourself an expert?

A. I don't know what passes for an expert in education these days.

Q. You don't consider yourself an expert?

A. I don't, I don't, no.

Q. And you don't consider yourself an expert in the subdiscipline of science education, either?

A. Well, we're getting closer, we're getting closer to my expertise. You know, again, I try to be modest and I won't claim expertise.

Q. And you haven't spoken to any of the school people in Dover about how the policy is being implemented?

A. No.

Q. You're not an expert on irreducible complexity?

A. No, no, I'm not.

Q. You're not an expert on Professor Behe's views?

A. I never claim to be an expert, no.

Q. And you're not an expert on William Dembski?

A. Not an expert.

Q. Or on complex specified information?

A. Not an expert.

Q. And you're not familiar with the textbooks that are actually being used?

A. Not familiar.

Q. So you're not familiar with the Miller and Levine biology textbook?

A. No.

Q. And you're not familiar with *Of Pandas and People*?

A. No.

Q. So you're only an expert on the nature of science?

A. Yes. That's a pretty big thing here, though.

Q. I'm sorry, I don't mean to minimize or denigrate it in any way.

A. You could even split it up into three different disciplines, and I would have three expertises.

Q. Well, we may come back to that. Now, you're a philosopher by training?

A. Yes.

Q. So you approach this issue philosophically?

A. Yes.

Q. And philosophers want to keep a more open mind than scientists on the rules of science?

A. I don't know if I'd exactly put it that way, but let's say -- I certainly warm to that suggestion.

Q. So philosophers don't want to close down alternative assumptions, including an appeal to the supernatural?

A. That's correct. I mean, again, not all philosophers, but I would say that that is kind of the -- you know, would be a majority view if you looked at most philosophers.

Q. But as you said in your expert report, most philosophers have resisted the charms of naturalism?

A. That's true.

Q. And you say this is an allergic response to guild-like arrogance of scientists?

A. Yes.

Q. And you agree with that?

A. Yes, I do. I am aware I did say that, yes.

Q. But do you agree with that proposition today?

A. Yes, yes, I do.

Q. And you think the National Academy of Sciences, as they have defined science, is too dogmatic in its commitment to methodological naturalism?

A. Is the National Academy of Sciences officially committed to methodological naturalism?

Q. I believe it is.

A. Okay. Certainly would be too dogmatic, yes.

Q. And you want to open up the discussion a little bit more than it currently is in the scientific

community?

A. That's right.

Q. I believe in your direct testimony you called yourself a philosophical naturalist?

A. Yeah, yeah.

Q. And said that, in fact, you're still committed to philosophical naturalism?

A. That's right.

Q. And then said maybe it's a little bit surprising that that's the case, given that you're here testifying in support of intelligent design?

A. Yes.

Q. But as I understood your definition of philosophical naturalist, it was that everything can be understood in terms of natural science?

A. In the natural world and ultimately in the terms of natural science, yes. Sort of along the lines I was endorsing here with testability and so forth.

Q. And personally, you believe that evolution is a better explanation of biological life than intelligent design?

A. At the moment, yes.

Q. But you're dissatisfied with that explanation?

A. Well, you might say as a philosopher I'm professionally dissatisfied with all explanations that claim to be final. And so there is going to be a special suspicion sort of drawn toward the taken-for-granted theories in any given discipline.

Q. So you're not saying that intelligent design is the correct or the better explanation for biological life?

A. No, I'm not. I'm certainly not. They're not -- they haven't developed it enough to really be in a position to make any kind of definitive judgment of that kind.

Q. So you think it's just worth something that we should be pursuing further?

A. Well, yes, and that there have to be some conditions put in place in order for it to happen. It's not just going to happen spontaneously.

Q. So is it fair to say that you're involved in this case more because you're interested in the philosophical value of intelligent design challenging the current scientific dogma, sort of the loyal opposition, than being committed to the doctrine of intelligent design itself?

A. Well, I don't know. I want to see where intelligent design goes, frankly. I mean, you know,

again, it's hard to make a judgment. But I do think that when you get to a situation in science where one theory is very dominant and so taken for granted that people don't even feel they have to, you know, defend it anymore, then that's kind of bad news epistemologically, just generally speaking. And it's that, in itself, that's worthwhile to support some kind of opposition candidate, in a sense. But what that opposition candidate does, you have to give it some time to develop, and then you can make further judgments whether it was a good bet or not.

Q. So intelligent design here is the loyal opposition to evolution?

A. Well, but it's a very specific kind, it seems to me. I mean, it's not just, you know, the negation of evolution.

Q. Now, intelligent design is committed to introducing supernatural causation into the current science paradigm. Is that correct?

A. That's not exclusively what it does, but it's certainly open to that.

MR. WALCZAK: May I approach, Your Honor?

THE COURT: You may.

BY MR. WALCZAK:

Q. I've given you a copy of your rebuttal

expert report in this case.

A. Yes.

Q. If you could turn to Page 18 of your report, please.

A. Yes.

Q. And if you could look about halfway down that paragraph, there's a sentence that starts, Third. And I'm going to read it. It says, Third, ID's rejection of naturalism and commitment to supernaturalism does not make it unscientific. Did I read that correctly?

A. Yes.

Q. And that's your view?

A. What do you mean that's my view?

Q. This is from your expert --

A. Yes, I understand. But, what, is this like my total view about what ID is committed to? No, it's not my total view. But I do believe that ID is open to supernaturalism. But it's not exclusively supernatural, it's just with respect to this dichotomy.

Q. But it has a commitment to supernaturalism and to introducing it into the scientific community?

A. I mean, a commitment doesn't necessarily mean it's trying to impose it, but rather that it's

something that it is open to and, in fact, is distinctive about it.

Q. Could you turn to Page 10 of your report. And the first sentence -- actually second full sentence in that first paragraph, On the one hand, it is true that ID wishes to pursue research that might eventuate in design-based explanations of the natural world that fall afoul of the naturalistic presuppositions of contemporary biological science. Did I read that correctly?

A. Yes.

Q. So if it's not naturalistic, what else could it be?

A. Yes, but the thing here is, what supernaturalistic boils down to -- I mean, supernaturalistic just means not explainable in the naturalistic terms. Right? It means involving some kind of intelligence or mind that's not reducible to ordinary natural categories. Okay?

So that's the sense in which I'm using supernaturalistic. I'm not saying, you know, they're committed to ghosts or something. See, I'm not sure what exactly -- but that's how I -- I understand supernaturalistic in this fairly broad sense.

Q. As not natural?

A. Well, as not naturalistic, given what we take to be naturalistic now in science. Because in the past, things that we now consider to be naturalistic in science were not regarded as such. Right? So that's the basic point I'm trying to make here.

Q. But we're clear on what natural is?

A. Excuse me?

Q. We're clear on what natural is of this world?

A. Yeah, in terms of -- well, of this world, nature as it is understood within the context of natural science.

Q. And here you're talking about broadening that definition beyond natural causation and to supernatural causation?

A. Yes. And what I'm talking about there, yes, is going beyond the taken-for-granted categories. I mean, this has happened in the history of science and does periodically, where things that people regard as occult forces and things that cannot be observed and are not detectable by ordinary experimental means, people postulate them, use them as the basis for research, and eventually you do come up with something that can then be assimilated within naturalistic

science.

Q. And the intelligent design proponents don't give much detail about who the supernatural actor, the designer is. Is that correct?

A. No.

Q. They don't give much detail?

A. No.

Q. In fact, they don't give any detail?

A. Well, right. I mean, in terms -- no, I guess not.

Q. Okay. So the goal is -- let me see if we can agree on it -- is to have such a supernatural designer considered as a possible scientific explanation. Is that comfortable with you?

A. Can you say that again?

Q. The goal is to have a supernatural designer considered as a possible scientific explanation?

A. Well, it's intelligent designer, and I think the idea here is that intelligence is something that cannot be reduced to naturalistic causes. Right? So there is a sense in which the idea of intelligence itself is taken to be somewhat supernatural here.

Q. To allow for this extra-natural or supernatural causation, we have to change the ground rules of science as they are currently understood by

the scientific community. Is that correct?

A. Well, actually, I don't think they have to change the ground rules of science. Pennock thinks they do.

Q. You don't think that you're --

A. I think the ground rules of science are indifferent on this metaphysical question of naturalism versus supernaturalism. This is why I think it's kind of a red herring in a way to talk about this in relation to science.

Q. If you would turn to Page 115 of your deposition. Now --

A. Wait a second.

Q. Well, let me just point out to you that this is part of a multi-page answer that you gave in response to a question on 113 --

A. Okay.

Q. -- about what you meant about the fundamental differences in orientation between evolution and intelligent design. And I want you to focus on the very end of your answer on Page 115 starting on Line 8.

A. And so you -- go ahead. Sorry. I was just trying to guess your question.

Q. Well, let me read your answer here. And so

that -- you're talking about giving different orientations as to what science is about. You're talking about intelligent design.

And then you say, So that would obviously involve changing the ground rules of science because there is a sense in which you would change the scope of what you're talking about, because if what you're really concerned about is the nature of intelligent design, as such, with life being one example of that as opposed to being interested in the nature of life regardless of whether it's intelligent design or not, right, you're going to have to have different ways of pursuing the inquiry. Did I read that correctly?

A. Yes, you did. Do you want me to explain?

Q. No. And then the next question was, Okay, so you -- you agree that intelligent design aspires to change the ground rules of science? And your answer was, Yeah, I think that's fair to say. I think -- I think -- they certainly -- yes. Did I read that correctly?

A. Yes, you read it correctly.

Q. You would agree that methodological naturalism has worked well for science?

A. Yes.

Q. And you would agree that it's largely

responsible for most of the scientific progress we've seen?

A. No.

Q. If you could turn to Page 175 of your deposition. I'm going to read your answer there starting on Line 23. You say, I'm not doubting that methodological naturalism has worked for science and that it's largely responsible for lots of science that we've got, maybe even most of that we've got. Did I read that correctly?

A. Yes. I said maybe.

Q. So intelligent design aspires to change this ground rule of science, this methodological naturalism?

A. Methodological naturalism is not a ground rule of science.

Q. A commitment to natural causation is a ground rule of science?

A. Well, actually, the ground rule of science is testability. Okay? I mean, so -- and that is metaphysically neutral.

Q. And how do you test the supernatural?

A. Well, that's an age-old question, but there have been paranormal experiments. And even when one was thinking about gravity as a potentially occult

force, right, that was the big challenge of the experimental imagination, to figure out how can we measure something that seems to be kind of, you know, invisible, you know, kind of impalpable.

So this is, in fact -- this is, in fact, one of the prompts to develop very subtle kinds of experiments and get at things in indirect ways. So the idea that something is supernatural doesn't preclude it from any kind of experimental testing. It just makes it kind of tricky, and it often takes a long time to do it.

Q. Well, how would you design a test to test for the intelligent designer, the affirmative test?

A. Well, I take it that -- and this refers to what I meant of the sense in which I meant changing the ground rules of science. I think this business of design -- a design detector, you know, the kind of -- the sort of filter argument that Dembski gives, because at the moment the design detector is used primarily as kind of a device for detecting fraud and things like that in artifacts, whereas, in fact, what I was thinking about when I said the remark about changing the ground rules of science was to actually say this kind of design detector thing could be expanded as a tool in science more generally. And

that's the kind of thing that I had in mind. I didn't mean changing the ground rules of science in the sense of replacing our normal modes of testability with entirely new modes of testability.

Q. Well, but if you allowed intelligent design into science, you would lead to a different conception of science. Is that --

A. I think what is true is that the sciences would be reconfigured so that the notion of design would be taken as kind of a literal unifying concept, where design in the sense of organisms and in the sense of artifacts and in the sense of computers or whatever would be treated as design all in the same sense, which is not how they tend to be treated now. Biology is sort of studied as one subject and the study of artifacts and technology is something else.

Q. But it would change the conception of science?

A. Well, it would change the way -- yes, it would probably blur the distinction, for example, between life and nonlife more substantially. There would be a lot of implications, I think. But it wouldn't change testability. It wouldn't change the fundamental kind of methodological principles of science which are indifferent to the naturalism,

supernatural distinction.

Q. And is it fair to say that you think the National Academy of Science's definition of a scientific theory is too static and too restrictive?

A. And this is -- remind me again. I'm sure I've commented on it, but can you remind me what that definition is?

Q. Yes. The definition is a well-substantiated explanation of some aspect of the natural world that can incorporate facts, laws, inferences, and tested hypotheses.

A. Yes, I believe I objected to "well-substantiated" in that definition.

Q. And your counter-definition is a little bit different, and it would be an explanatory conception --

A. Can you direct me to a page? You just want to tell me? Okay.

Q. An explanatory conception of a range of phenomena and also that could serve as a basis for a research program, for an empirical research program.

A. Yes. That sounds good, yeah.

Q. So you would remove "well-substantiated" to allow not-so-well established theories like intelligent design?

A. Well, otherwise, I don't see how any new theory would ever get a foothold in this definition. No theory is born well-substantiated.

Q. Now, you've spent a fair bit of your time on this particular point about how difficult it is under the current -- I think you would say overly dogmatic naturalistic paradigm of science for new theories to break in.

A. May I correct you? I think that's a mischaracterization. I don't think that naturalism is, itself, the kind of -- the sort of stultifying atmosphere. I think it has actually more to do with sort of sociological, political, and economic factors when it gets right down to it.

Q. But as I understood your testimony -- and, please, you know, correct me if I'm mischaracterizing, because I certainly don't intend to do that. I mean, as I understood it, you're saying that scientists are not really open to different ways of thinking such as presented by intelligent design?

A. In fact, yes. In fact, as -- this is, in a way, engrained in their training, and it's something that is very well remarked upon in our literature. It's called normal science. It's the whole idea of thinking within a paradigm. That's, in fact, how you

make advances in very narrow, specialized technical fields. So, in a sense, it has a heuristic value itself, this kind of narrowness, that makes people unopen, but it isn't everything.

Q. Right. But I also recall you saying that scientists are not the person -- not the people to best define science because they're within that paradigm and can't think outside of it?

A. Well, that is certainly -- yeah, that's certainly true.

Q. And your point is that what you need are philosophers of science and sociologists of science and scientific epistemologists to really be able to define what science is properly?

A. Yes. And it's happened. It's happened in legal cases like this, for example. The definitions are taken from philosophers. And it's very common practice, yes.

Q. And you also said that the scientific association, I think you called them -- you said the elites at the National Academy of Science make it difficult for new theories to be accepted?

A. Well, I don't know if that particular organization is to be targeted in some conspiratorial fashion, but I think that the way science is organized

generally, if you go across the professional associations, the ways in which, you know, peer review operates and journals, you look at the way in which education takes place within science and how one gets in and how one gets jobs in it, if you put that all together, that does make it very difficult for new ideas to catch on.

Q. So, in some sense, you would say there's a prejudice between the scientists, the scientific associations, the peer review, against new scientific theories being accepted?

A. A prejudice in -- yes. I mean, I don't know how cognitive I want to interpret that word "prejudice." Again, I don't know if there's, like, vendettas against particular viewpoints. But I do think that the overall -- you might say structural effect of all these things is, yes, to bias one toward a kind of conformist position on a taken-for-granted, established science.

Q. So it's difficult but it's not impossible for new theories to be accepted?

A. Of course not. But it's getting harder.

Q. And I think, as you testified earlier today, scientists are willing to accept hypotheses from anywhere so long as they bear fruit experimentally.

Do you recall saying that?

A. Yes. And that's -- you know, that's, yes, pretty obvious.

Q. So, in fact, I mean, the 20th Century and the late 20th Century give us many examples of theories that have been accepted within the scientific community. So, I mean, you testified to Dobzhansky's --

A. Dobzhansky, yes.

Q. Right. His view of really -- I mean, that was the Darwinian revolution that we're talking about here?

A. Yes. But what he did -- yes, but this was done by writing a book that brought together different biologists to see themselves as traveling under a common rubric. I mean, it wasn't something that required a large research grant or something. By today's standards, it was still very much little science that he was doing that had this big effect.

Q. But that's perfectly well accepted in science today?

A. Yes, but he was doing this in 1937. The world has changed.

Q. Well, how about, have you heard of the theory of plate tectonics?

A. Sure. That was ignored for a long time.

Q. Absolutely. It was ignored for, what, 40 or 50 years before it was finally accepted by the scientific establishment in the 1960s?

A. Well, that's right. And all along, though, there were people -- there was a current of people still pursuing it. So even though it was never any dominant position, there was kind of a -- it wasn't so discontinuous, it was just that the people who were pursuing it were largely on the margins. And then eventually, you know, they came to the surface as new evidence and so forth came in. That's certainly true.

Q. Right. So there was a hypothesis, there were people who were advancing this, it was not accepted, not accepted, and eventually it did become accepted as a theory within the scientific community?

A. Yes, because they did have a critical mass of workers in that area who were able to pursue it, even though they weren't being taken all that seriously for a long time. It wasn't that, you know, you had three guys doing it and then when they stopped pushing it, it disappeared. There was always kind of an undercurrent rumbling with regard to this theory until then people caught on to it when they saw new evidence arise.

Q. And you know about the theory of transposons?

A. I can't say I do, I'm afraid.

Q. Have you ever heard of jumping or removable genes?

A. Yeah, I have. Obviously I'm not an expert in biology, but I have heard of them.

Q. And are you familiar that that's a theory that was first proposed in the 1950s and has now largely been accepted by the scientific community as of the 1980s?

A. Right, but I bet there have been people working on this for a while in between.

Q. Right.

A. Well, that helps.

Q. Right. So they spent 30 years, and finally they convinced the scientific community that this was a valid theory that should be accepted?

A. And these people had academic posts who were pursuing this. Right? So there was an institutional substructure that was supporting this minority research. And that's a very important part of the story. Right? Because if there is no institutional substructure, right, if there are no, you know, people studying this and following it even though they know

most people don't believe it, it's never going to have a chance to reach that point.

Q. And you've heard of prions or prions?

A. Yeah, I've heard of them.

Q. And those are -- I guess advances the cause of mad cow disease, they're replicating proteins?

A. Yes. They're very famous in my country, Britain.

Q. I'm sorry to hear that. My sympathies.

A. We invented them.

Q. We have great steaks here in Harrisburg.

A. Oh, I've been having one every night, let me tell you.

Q. And, again, that was a theory that was advanced and eventually accepted by the scientific community in the 1990s?

A. Of course, yes.

Q. And one last example, the theory that ulcers are actually caused by bacteria?

A. Yeah, yeah. Sure, yes, I am familiar with that.

Q. Because for a long time people thought that, in fact, ulcers were caused by stress, which led to stomach acid, which led to the ulcers. And now, in fact, this year's 2005 Nobel prize in medicine went to

the people who advanced that theory.

A. Yes.

Q. So there are scientific theories that can sort of crack the scientific establishment and become accepted?

A. Sure, but these people have -- you know, they have institutional settings where they can continue the research. Right? And I'm sure -- I mean, with the plate tectonics there was some hostility, but with some of these others, I wonder if there was really, you know, any kind of ideological hostility to the pursuing of this alternative research. Because in this sense, it isn't quite the same as intelligent design, which I take it to be the point of the examples.

Q. Well, I mean, the point is that you can get accepted in the scientific community. It takes time, it takes work, it takes research, and it takes effort to convince your colleague in the scientific community, but it can be done?

A. Yes. And it takes institutional presence, and it takes the ability to be able to have students who follow up on leads that you make, and those students have to be able to get jobs and so forth. There are all those things, too. They're part of the

sociology.

This is why the history and philosophy and sociology of science need to be considered together. You can't just separate out, as it were, the philosophical status of these theories and see how they change over time. You have to look at the institutional structures.

Q. But intelligent design hasn't convinced the scientific community yet, has it?

A. Well, there's a chicken and egg question here. Right? I mean, you have to put the institutional -- you have to enable these people to actually have enough exposure, right, so that they can get people interested in the idea. And so people who, let's say, don't start off with, you know, whatever baggage they happen to have get interested in it and develop it in new directions and take the idea forward so it's not just seen as a kind of cultish thing. And that's very important, and that doesn't happen spontaneously.

Q. Right. It takes lots of hard work, but --

A. And it takes institutional opportunities.

Q. Right. But the work is done in the scientific community, isn't it?

A. Well, yeah.

Q. I mean, it's not done in the public schools of this country?

A. Well, if we're talking about getting people interested in this kind of idea -- see, intelligent design has certain disadvantages that these other theories don't have, and that's the kind of ideological resistance to it because it's seen as, you know, overly religious and all the rest of it. And so there is a kind of -- in that sense, there is a kind of prejudice that makes it more difficult for a theory like that to get some kind of leverage.

Q. Now, that's your speculation?

A. Yes, indeed. I mean, that's why I don't think the analogies work quite the way you're saying.

Q. But we know that the National Academy of Sciences has specifically said that intelligent design should not be taught in public school science classes?

A. I know. I've read that statement, yes.

Q. And the American Association for the Advancement of Science, you're familiar with that organization?

A. Well, of course.

Q. And that is the largest organization of scientists?

A. I know.

Q. And they have taken a similar position that says intelligent design is not science and doesn't belong in a science classroom?

A. I know.

Q. Right?

A. I know. Okay.

Q. So intelligent design has not convinced the science community, and you're here saying, well, you know, we've got to sort of fertilize the field and make sure that it can be taught to students so that they're more open-minded to this?

A. Well, it seems to me that you're not going to -- it's not going to happen otherwise. And --

Q. You know, I'm not aware of transposons or plate tectonics being forced on students before it was accepted by the scientific community.

A. Yes, but those are much more specialized kinds of entities and theories and so forth that exist, roughly speaking, within established disciplines. Here we're talking about a sort of scientific movement, as it were, that part of what it wants to do is to reconfigure the face of science. Right?

And, in a sense, the neo-Darwinian synthesis covers a lot of ground. It's a very sort of big,

broad picture. And, in a sense, intelligent design is offering a kind of competitor at that level. So it's a different ball game from what you've been describing.

Q. And what you're saying is that it's got no chance in the scientific community, the only chance it has is for a federal judge to order that it be taught in the schools?

A. Look, I'm --

MR. GILLEN: Objection to the characterization of his testimony, Your Honor.

THE WITNESS: Well, I am going to disagree with it. Sorry.

THE COURT: The best thing you can do when Mr. Gillen objects is not answer the question.

THE WITNESS: Sorry, sorry.

THE COURT: That doesn't help him. So we'll let that pass and we'll move on.

MR. GILLEN: I'll withdraw the objection.

THE COURT: I guess so. Mr. Walczak can proceed. That's known as the too-helpful witness.

THE WITNESS: Sorry.

THE COURT: But who you're helping depends on your answer. Mr. Walczak, you may proceed.

BY MR. WALCZAK:

Q. You talked earlier in your direct examination about a revolution in science not being a big deal. Right? Or not as -- I'm sorry, not as big a deal as, say, a social or political revolution.

A. Yes.

Q. And you mentioned Lavoisier and Newton and Mendel and Dobzhansky. And these were all sort of scientific revolutions that you pointed to?

A. Yes.

Q. And what you're telling this Court is that we need that kind of revolution because the dominant paradigm is not letting intelligent design in?

MR. GILLEN: Objection to the characterization of his testimony. I don't believe he said any such thing.

THE COURT: Well, the question is couched in terms of you're telling us, and he can deny that. I don't know that that's an accurate characterization of his testimony, but the way the question is phrased, it's a fair question on cross, so the objection is overruled. You may answer that.

THE WITNESS: I deny that. Let me see how to put it.

BY MR. WALCZAK:

Q. What was the point of talking about

revolutions?

A. Well, the thing here is that you need to have revolutions when, in fact, the science is dominated by one paradigm. Right? That's the presupposition of a revolution, that the only way in which you're going to actually get any kind of alternative viewpoint is by displacing the dominant one, because you're not imagining science to be a naturally pluralistic field.

You don't need a revolution if you had a kind of pluralistic playing field of science where you have lots of different theories of roughly equal stature. But, rather, in this case, with the neo-Darwinian synthesis, you have one very dominant theory that monopolizes all the resources.

In the normal course of things, you would just have to wait for that theory to kill itself before another one is going to come about.

Q. And so you are saying that, in fact, there is a very dominant theory today, neo-Darwinian synthesis, and in order to crack that, in order to allow intelligent design in, you need this revolution?

A. Well, that's not quite -- I mean, I think that if intelligent design proves its merit, that will, in fact, happen. But I'm not actually saying --

I'm not calling for a revolution at the moment.

What I am saying is, I would like to see some opposition thinking to force students to think, well, look, is this the only way of looking at the nature of life? Maybe there's an alternative way of looking at it. And not only that, it's a way that can fit in with other things, such as other things that are designed.

I mean, thinking about biology as if it were like technology, which is part of the implication of the sort of thing Dembski is doing, is kind of interesting, and it does put a different slant on what the nature of life is and actually has some precedent in the history of science with regard to issues of mechanism and so forth, and this is where Newton and all that comes in.

So it's not like some weirdo theory that I've just picked out of a hat. It's one where you could do a nice historical backstory to.

Q. I want to switch gears and talk a little bit about intelligent design itself. Now, you said that intelligent design is a relatively young science?

A. In this current phase, right. It has a long historical backstory, very little of which it's actually appropriated up to this point. In its

current form, it's pretty new.

Q. So it doesn't have its views, its conical views worked out very well on all aspects of the theory?

A. I think that's fair to say.

Q. So, for instance, on the position of the age of the earth, it's open-minded?

A. I believe so.

Q. And we have to wait until the science develops a bit more to see where it's going to come out?

A. I think that's right.

Q. And so there really aren't a lot of, as you've put it, conical views about fundamental principles?

A. No, that's right.

Q. And --

A. But there are some that are being developed, that are quite clearly being developed, like the complex specified information, explanatory filter thing of Dembski. I think he's the one that, you know, one would look for in terms of developing so-called foundations, you might say, for this science. So it is going on, and there is some discernible shape to it.

Q. We'll come back to Dembski. But you've earlier used the term "normal science." And that would refer to the neo-Darwinian synthesis?

A. That's right. It's the way science is done normally under the dominant paradigm.

Q. And you've said that ID, in fact, is in a fringe area?

A. Yes. It's not normal science. I mean, you can't have normal science until you have a paradigm that's been sufficiently flushed out that you can sort of talk about normal forms of research. At the moment, ID is basically laying out foundations and then trying to come out with some exemplary phenomena.

Q. Let's talk about those foundations for intelligent design. I think -- would you agree that ID consists primarily of the views of Michael Behe and William Dembski?

A. That's certainly the two I associate it with.

Q. Those are the biggies?

A. I would say so.

Q. And you would agree that both are at relatively early stages of development?

A. Yes.

Q. Let's start with Dembski. Now, you say that

he has suggested an explanatory filter based on math and statistics?

A. Yes.

Q. And he's trying to provide a probabilistic space for intelligent design?

A. That's right.

Q. So he's trying to move ID out of a metaphysical space and into a mathematical one?

A. That's correct.

Q. But as far as you know, he has not applied this filter to explain any biological life?

A. No. He has done it primarily to study fraud in artifacts and things like that.

Q. So he hasn't actually applied this to biological life?

A. No. He's primarily a guy who develops theoretical foundations. Okay? He's not a biologist, he's a mathematician by training.

Q. And you would agree that people have suggested counter-examples to his hypothesis and that he's failed to address those?

A. Well, he has tried to address them. I mean, it's a very -- it's a very kind of tough game he's playing, because the idea is to come up with a notion of design that cannot be reduced to either necessity

or chance. And so the counter-examples are along the lines of saying, well, you know, this could be seen as chance or this could be seen as necessity, where is that middle space that you're going for.

But that's kind of to be expected, it seems to me, given that if he is able to come up with this, this would be quite a radical departure from, let's say, the way we think about evolution, which is a combination of necessity and chance.

Q. If we can -- if he can come up with this. But as you say, his failure to address some of the counter-examples to this very difficult hypothesis that he's making, I mean, in your estimation right now is really damning?

A. Well, no, he's been trying. I mean, it's just he doesn't satisfy all of his critics.

Q. But the fact that he has failed to address some of the counter-examples is damning to his theory?

A. I mean, he's trying. He doesn't do it to everyone's satisfaction. But he is -- I have seen responses to his work -- his responses to his critics' work, and he is trying.

I mean, there aren't a lot of -- see, if there were more people working in this area, you know, there would be kind of support and there might be some

way of developing this a little faster and on more different fronts, but he's pretty much doing it himself.

Q. If I could direct your attention to Page 65 of your deposition.

A. Yes.

Q. I'm going to start reading -- do you have it there?

A. Yes.

Q. I'm going to start reading with the question on Line 2. Quote, But what is your understanding of these counter-examples? Is it that they have -- that critics have taken these counter-examples and used some probabilistic method to determine what happened to them, or have they been raised as examples that Dr. Dembski needs to apply his method to to show that it works at all? And your answer is, Yes, the latter. I mean, but is this damning? Yes, I mean, I agree with you.

A. No, no, I'm not referring to that it's damning. I mean that the latter -- I'm not saying that the fact that they have raised counter-examples to -- suggests his method doesn't work at all. I am agreeing that that's the nature of the counter-example. I am not agreeing to it being

damning.

Q. But you're saying that Dembski needs to apply his method, and he hasn't done that to the counter -- he hasn't applied his method to the counter-examples, and that's damning?

A. Let me just read this. Can you restate the question now? I've sort of -- restate the question, please, now that I've understood what I've said.

Q. That Dembski's failure to address these counter-examples is damning to his theory, at least for right now.

A. Well, actually, I tend to interpret the word "damming" as pretty final. But, you know, damning for right now sounds to me like a contradiction in terms.

When I say, yes, I agree with you, what I'm agreeing to is that you gave two alternatives in your question, and I'm agreeing to the latter of those alternatives. I'm not agreeing to your subsequent statement of it being damning. That's what I'm doing there.

Q. But that's what you said in the deposition?

A. That's the order of the words, but, you know, in the course of speech, right, it's -- you know, it may not actually be as it seems.

Q. So what's printed on the page may be

different than what we're reading?

A. No, that's not what I'm saying. But, look, the way I answered the question, right, I gave, you know, whatever, three or four short remarks. But, I mean, clearly -- because, look, the word "damning" is very final, and I don't believe it's damning.

Q. All right. Well, let's look at your next -- let's look at your next answer and the question that was posed to you right after that. Isn't the challenge to Dr. Dembski right now that your method is useless? And your answer was -- and I'm going to read this and please follow along -- The fact that you bring up counter-examples doesn't mean that it doesn't explain anything. Right? I mean, in fact, the way the general verdict on somebody like Dembski is that, you know, it sort of leads -- it's kind of -- it doesn't quite fit the full range of things that we normally consider design. It tends to include certain things that we don't want to call design, and it tends to exclude other things that we do want to call design. So in that sense, the mathematical parameters aren't being set quite right, and that might indicate some fundamental flaw in the way he's conceptualizing the problem. Okay? That's what the state of play is with him.

A. Yes, I would think that that's kind of what the received opinion is at the moment on his work.

Q. So there may be some fundamental flaw with his hypothesis?

A. Yes, but this is a very common response to someone who is making a very fundamental challenge working so early in this area. So this doesn't -- in a sense, it doesn't phase me.

Q. But you would agree with me then that Dembski has not yet succeeded in showing that life is intelligently designed?

A. Oh, no, he hasn't shown that.

Q. And you're not aware of anyone else using his hypothesis or his mathematical filter to show that life was intelligently designed?

A. Well, there has been some synergy between him and Behe in recent times, but I don't think there's been any systematic application.

Q. So you're not aware of anybody else successfully applying his hypothesis to prove design?

A. No, no. I mean, his stuff tends to be applied on artifacts and whether or not there's fraud or, you know, what the design features are, things of that kind.

Q. Things made by humans?

A. Yes, that's the prime -- I mean, it's very good on that front.

Q. Right. And, of course, we know who made it if it's made by humans. Is that a tautology, I think I just --

A. Well, we often don't know which ones unless we do the work.

Q. Let's turn to Dr. Behe's theory of irreducible complexity. And I believe you've termed it -- you're saying he's trying to come up with an alternative science?

A. Yes.

Q. And you agree that he has not gotten his studies peer reviewed?

A. Well, he did get -- I mean, I've recently seen a thing that he got on proteins that has appeared in *Protein Science* that is sort of presented --

Q. Is that with Professor Snoke?

A. I believe so.

Q. And that doesn't mention intelligent design?

A. No, it mentions evolution and natural selection as a test of it.

Q. And it doesn't mention irreducible complexity?

A. No, no. I mean, no, that's true, it does

not. There may be reasons for that, but --

Q. Well, and one of the reasons -- let me ask if you agree with me that one of the reasons it's not in peer review, because from the standpoint of the way in which normal science is conducted, Behe's work is not very useful?

A. Well, it's not towing the right line, that's for sure.

Q. So, I mean, even under your kind of expanded definition of science where it does not have to be well established, Behe must really launch his own research program?

A. Well, I think, in fact, that is what he's trying to do.

Q. He hasn't done that yet?

A. Well, it all depends what you mean. I think he is trying -- I mean, in a sense, making some common cause with Dembski is helpful here and, in fact, is to be expected that there will be this kind of -- you know, Behe can't do everything himself either. Right? I mean, he's a biochemist, and he has certain kinds of specialties, and he really needs to be in contact with people in other areas who are sympathetic to this in order for it to really take off. But he's certainly doing the best he can.

And I really think this is, again, another one of these institutional problems, that you can't just expect one person to come up with a whole research program fully blown from his head. I mean, typically this involves having students -- you know, I mean, starting journals, getting the work published and circulated and all the rest of it, and you do need a critical mass of people for that.

Q. And so you would agree that right now Professor Behe and irreducible complexity have neither robust peer review nor a robust research program?

A. Well, I mean, he has as robust a research program as he possibly can under the circumstances, it seems to me. And the same would go for Dembski. They're doing the best they can with the minimal resources that they have.

And with regard to peer review, you know, I think that one has to, you know, look at that very cautiously. Yes, strictly speaking, there isn't that much peer-reviewed stuff by him, but, you know, again, there -- there are institutional issues here, it seems to me.

Q. And you're not aware of the research that Professor Behe is actually doing on intelligent design?

A. I'm not a specialist in his work, so I don't have, like, up-to-date information about him.

Q. And you haven't read his testimony from the trial last week, have you?

A. Well, actually, I did read some parts of it.

Q. So you don't -- do you recall what he said about his research program on intelligent design?

A. I only recall the kinds of questions -- he was asked to explain, you know, the irreducibility of the cell and all this kind of stuff. I don't recall. But then I didn't commit the transcript to testimony -- excuse me, to memory.

Q. But as you sit here, you're not aware of what research Professor Behe is doing?

A. Yes, but I'm not an expert on the man.

Q. Let's go over the logic of irreducible complexity and Dr. Behe's argument here. And it starts out as intelligent design is a better explanation than evolution. Is that right?

A. It starts with that?

Q. Isn't that kind of the --

A. What do you mean it starts?

Q. Well, is it a better explanation than natural selection? I mean, isn't that sort of the premise, intelligent design is a better explanation of

biological life?

A. That's what he's aiming to show. That's what he's aiming to show, if that's what you mean.

Q. That it better explains biological life than random mutation and natural selection?

A. Yes, he believes that.

Q. And he says that random mutation and natural selection are not an adequate explanation for biological life?

A. That's correct.

Q. And then, therefore, intelligent design is better?

A. Well, I don't know. Does he exactly say that?

Q. Well, I think that's what you said.

A. Well, I mean -- did I say that?

Q. Why don't you turn to Page 168 of your deposition. If you'll look at Line 21.

A. Yes.

Q. The question, Therefore, intelligent design is the best explanation? Answer: Yes, that's roughly what's going on.

A. Yes, I see. So the idea being that I'm saying -- he's saying it's -- you know, if it's not natural selection, it's therefore intelligent design.

Okay. But Miller does the same thing in reverse when he tests Behe's experiment.

I mean, there's a sense in which this kind of debate tends to have this character where one side says, well, look, if you show that the thing is not irreducibly complex, therefore it's natural selection, and so he plays the game the other way around. So there's a sense in which he's -- he's hardly alone in being guilty in this sin of having dichotomous thinking.

Q. Well, let's talk about that sort of first part of Behe's argument, the irreducible complexity. And there, in fact, have been challenges made to his assertion that there are cells or organisms that are irreducibly complex. Correct?

A. Correct.

Q. And, for instance, Professor Behe, in his 1996 book *Darwin's Black Box*, threw out some potential examples, the blood clotting cascade, the immune system?

A. The bacterial flagellum.

Q. Right. Who could forget the bacterial flagellum. And lac operons, too.

A. Oh, of course, yes, yes, yes.

Q. And, in fact, as happened last week,

Professor Behe was confronted with -- I think it was 58 peer-reviewed journals and a number of textbooks that talked about various evolutionary pathways for the immune system. So the scientists have actually come up with possible natural explanations where Professor Behe said there were none because it's irreducibly complex.

A. Um-hum.

Q. Is that correct?

A. I'm perfectly willing to believe this.

Q. So I want to focus on the second part of Dr. Behe's argument. Okay? Irreducible complexity, I want to make sure we understand this, is that science cannot fully or evolution cannot fully explain --

A. Natural selection is really his target.

Q. Okay. So natural selection -- well, that may be his target, but that's not exactly what evolution says. Evolution, if you'll agree with me, evolution doesn't say that natural selection alone is the mechanism of change?

A. No, but that's the thing that he's targeting in his examples.

Q. Right. But you would agree with me that natural selection is not the only change agent?

A. No, but I thought you were talking about

what he's trying to do.

Q. I am. But as I understand it, his irreducible complexity argument is that, in fact, some things are so complex that there couldn't be a natural explanation for them or a natural pathway.

A. No, what he's saying is that you could never reach -- you could never reach the state of the cell being in its sort of integrated whole just through processes of natural selection, you know, to random mutation and so forth. It would take too long to get to that state and that the earth isn't old enough, as it were, to allow natural selection to work for the cell to get into that state. That's what his argument is.

Q. So he's saying, I can't imagine how this could have happened naturally in science?

A. No, that's not the same thing. He's actually making a -- you know, a quite specific statement, you know, where he's calculating how long would it take through natural selection for this particular cell to develop as it is, and he's saying it's too long.

Q. Right.

A. It takes too long. And that's a strike against natural selection given how long we take the

earth to have been around.

Q. But what he's saying is that natural selection can't explain this. That's the first part of his argument?

A. Well, that's right. And he means it in this very specific way that I have just described, namely, it would take too long if you took natural selection seriously.

Q. So it's a negative argument against natural selection?

A. It's not merely a negative argument, it's actually a potential test of it. In a sense, his argument is designed as a test of natural selection because, look, even if you can give potential evolutionary explanations, you still have to explain the time frame in which it happened, and that hasn't been done yet by the evolutionists.

Q. So what he's saying is that evolutionists haven't fully explained these theories?

A. Oh, yes. And I think even the evolutionists would agree with that.

Q. Absolutely. I don't think anybody is disputing that. But I want to focus on the second part of his argument, which is the one actually for design.

A. Right.

Q. Okay? So, you know, even assuming that and even accepting that evolution and science cannot detail all evolutionary pathways, design still doesn't follow logically from that, does it?

A. You're absolutely right, and there is this dichotomous thinking that just penetrates both sides of this debate, and that includes Miller.

Q. So in order for the irreducible complexity to be logically valid, one would have to assume that Behe has eliminated all rival hypotheses, not just one?

A. Of course, of course.

Q. And here, just because science hasn't provided a naturalistic explanation today doesn't mean that there aren't any naturalistic explanations?

A. Of course, that's all true. I mean --

Q. Right. And it doesn't mean that science isn't going to find some natural explanation tomorrow just because we don't know it today?

A. Of course. Who could disagree.

Q. So you agree that the absence of naturalistic explanations is not a proper test to show the supernatural in biology?

A. No, in fact, there's a sense in which this

whole debate is very wrong headed. I mean, in a sense, both should just be allowed to develop their research programs rather than to score premature knock-out punches in simple-minded fashion. And that goes for both sides again.

Q. And speaking of both, let's bring Mr. Dembski back into this.

A. The other "both." Okay. Not Miller.

Q. So both Michael Behe and Professor Dembski have the same logical problem with their argument. Correct?

A. Well, will you tell me what the problem is before I consent to it?

Q. Sure. The affirmative argument for design is simply a conclusory proposition that doesn't follow from their criticisms of evolution.

A. It is true that design is not entailed by criticisms in evolution, that is true. That's certainly true.

Q. So the leap to design is a conclusory proposition?

A. But, look, there is more to it than that. Right? I mean, it's not just that they -- they're not just presenting negative evidence, they're sort of showing what it is about the cell that appears to be

designed, et cetera, et cetera, that provides a kind of prima facie positive story, as well. Okay?

I mean, but it is true that these guys define their position very much in opposition to the evolutionists. And I do -- yes, there's a sense in which it would be better if there was a little space between these two so they could develop their programs independently.

Q. But still, coming back, I mean, the assertion for design is really just a conclusory proposition?

A. No, there is more to it than the conclusions that are drawn on the basis of negative evidence about evolution.

Q. All right. Would you turn to Page 185 of your deposition.

A. Yes.

Q. I'm sorry, I had the wrong page here. Page 170, beginning on Line 5 -- well, let's see, you say, Dembski has a similar problem. And the question is, So both of them have this problem? And then you say, Yes, and then we elucidate. The question is, Okay, but then even granted your point, which I do, I'm still troubled by the idea that even if you would eliminate all the, for example, natural hypotheses

that have been asserted, one could make a positive case for action by an intelligent designer, and I'm trying to understand how that follows, which I think is a conclusory proposition.

A. Yes.

Q. And your answer is, Yes. I mean, yes, it doesn't follow, you're absolutely right.

A. Well, I haven't disagreed with that, have I?

Q. Have I read that correctly?

MR. GILLEN: Objection, Your Honor. I think if he's going to read the answer, he's got to read the whole answer, not just the beginning.

THE COURT: Well, he has the opportunity to read the answer and answer it in context and answer in the context of his entire answer, so you feel free to answer the question as it relates to your entire answer or any other answers that you gave. That's understood.

MR. GILLEN: Thank you, Your Honor.

THE COURT: And we had a question on the floor. Is that right?

MR. WALCZAK: I believe he agreed. He said he didn't disagree with the proposition.

THE COURT: Then you may proceed.

BY MR. WALCZAK:

Q. And based on this argument, there's never going to be a decisive moment where intelligent design wins by default simply because it shows that natural explanations have not yet been shown. Is that correct?

A. But that's not the whole sum of what the program is about.

Q. But simply showing that natural explanations are inadequate is never going to prove intelligent design?

A. Not by itself, no, but that's true of any research program. You don't establish your own position by just negating another.

Q. And since you can never eliminate all the possible natural alternatives, some people have objected to the idea of inference to the best explanation as being a method in science. Do you agree with that?

A. That's certainly true.

Q. And you're not aware of any intelligent design people having produced an affirmative test for supernatural causation?

A. No, I don't believe so, not them.

Q. And you're not aware of intelligent design being empirically tested?

A. Well, it is a bit early in the research program for them to actually come up with their own original tests. I mean, as I said earlier this morning, you have to wait some time for the research program to get elaborated so you actually see what would be some interesting test cases where intelligent design is really saying something interestingly different from some natural selection-based explanation, for example.

Q. But they haven't done that yet?

A. Well, it's very early in the day, right, for these guys.

Q. And can you ever disprove a designer?

A. Well, actually, that is kind of the point of having a design detector. Right? And this is where Dembski comes in, right, because Dembski is trying to put some kind of specific mathematical parameters on what would count as design. Okay? And so there is an attempt to actually nail down that concept in some way that you could then tell whether something was designed or not.

Q. And how do you disprove that there is a designer?

A. Well, I mean, there's a sense in which designer -- a design isn't necessarily a commitment to

some sort of absolute God. I mean, you know, if what you're thinking about is how do you disprove God, well, yes. But that's not really what the issue is here. It's basically saying whether design is present or not.

And then the issue is having some kind of criteria that you can apply unequivocally to be able to make that distinction. That's the goal of the project, right, at the end of the day. And so the issue is nailing down a sufficiently clear notion of design.

Q. But if you never hypothesize about the identity or the attributes of the designer, how could you ever possibly disprove that?

A. It's not at all clear to me -- I mean, it depends what attributes, exactly, you're talking about. Right? I mean --

Q. The intelligent design proponents refuse to hypothesize about any attributes, do they?

A. It depends what -- the design of what are we talking about here. Because we're talking about design of cells, right, there's going to be one kind of design-based explanation. If you've got design of artifacts, it's going to be another kind of design-based explanation.

Q. Well, we're talking about biological life here.

A. Right, okay.

Q. So there are different designers?

A. I'm not sure that's quite the way to put it. What you want to show is that this is design as opposed to having been the product of chance and necessity, that is kind of what the project is about, and coming up with a clear criteria where you can make the difference between a chance and necessity explanation and a design-based explanation. And that's kind of the conceptual issue that people like Dembski are struggling with at the moment so that, in fact, you could say that this is design or not design, because they don't believe everything is designed.

MR. WALCZAK: Your Honor, this might be a good time for a break.

THE COURT: All right. Why don't we take our afternoon break now. We'll break for 20 minutes, and we'll return at about 3:20 to have our last session of the day. We'll be in recess.

(Recess taken.)

THE COURT: All right. We continue with Mr. Walczak's cross-examination.

BY MR. WALCZAK:

Q. I want to talk to you, Professor Fuller, about evolution as the big tent. Emphasize the "T" there. I believe that you testified that evolution is the biggest of big tents?

A. Yes. That's partially a compliment.

Q. I took it as a complete compliment.

A. Okay, good.

Q. But evolution includes biology, all the biological sciences, cell biology, microbiology, genetics, paleontology. And so evolution really has managed to accommodate all of these many scientific disciplines?

A. Yes, that's true, that's true.

Q. And, in fact, even within these disciplines as you've testified, there are many disagreements among people about exactly the means and mechanisms of evolutionary theory?

A. Yes.

Q. So, in fact, evolution is a very inclusive theory that brings together many different disciplines and thousands and thousands of scientists?

A. Yes, it does. That's certainly true.

Q. And intelligent design has not been able to penetrate the science?

A. Well, intelligent design, in a way, scopes

out the sciences differently, but it certainly has not been able to get the sort of, you know, breadth of constituency that evolution has had, but it's had much less time to work with.

Q. I want to talk about intelligent design's big tent. Would you put up Exhibit 429, please.

MR. WALCZAK: May I approach, Your Honor?

THE COURT: You may.

THE WITNESS: Is there a hard copy? All righty. Life in the big tent.

BY MR. WALCZAK:

Q. I direct your attention to the synopsis there in the second paragraph.

A. Yes.

Q. If you could read beginning with "under" halfway through that second paragraph.

A. Do you want me to read it out loud?

Q. Please.

A. Under the canopy of design, as an empirical possibility, however, any number of particular theories may also be possible, including traditional creationism, progressive old-earth creationism, and theistic evolution. Both scientific and Scriptural evidence will have to decide the competition between these theories. The big tent of ID provides a setting

in which that struggle after truth can occur and from which the secular culture may be influenced.

Q. So evolution brings together all sorts of scientific disciplines. Correct?

A. Correct.

Q. And intelligent design here brings together not only some alleged science, but also religious views?

A. But this is not the intelligent design I'm talking about. This is one particular scoping of it. I don't -- this is not the type that I'm talking about as being a scientific competitor for evolutionary theory.

Q. And do you know who Paul Nelson is?

A. Vaguely, vaguely, yeah, yeah. He has some connection with Dembski, doesn't he?

Q. He is a senior fellow at the Discovery Institute. What's the intelligent design you're talking about?

A. Well, I'm talking about the type that is interested in playing by the rules of science in the sense of trying to come up with a research program with testable hypotheses, that, in a sense, is competing in the scientific space, primarily, regardless of what the religious motivations may be,

but not taking the religious motivation itself somehow as evidence, as it were, for the scientific validity of the statements.

Q. So, in fact, this would not be acceptable to you as --

A. Not to me, at least in terms of these various disciplines that are being included here. Some of these would not, for me, count as appropriately scientific.

Q. And I know you talked about the motivations of the proponents didn't necessarily invalidate a theory so long as it was testable otherwise.

A. That's correct.

Q. Now, if the motivation, in fact, was shown to be -- to develop a view that is consonant with Christian and theistic convictions, would that change your opinion?

A. Well, it depends whether it was testable or not, doesn't it? I mean if it's testable by scientific means. I mean, after all, Sir Isaac Newton thought he was interpreting the Bible when he was doing Principia Mathematica, but you didn't have to hold that view in order to see that his theory was valid.

Q. But if you start out with a premise that

we're going to design something to make it consonant with particular religious views --

A. Well, we'll have to see whether it pans out scientifically.

Q. So that --

A. It may be a good heuristic, it may not be. But the proof of the pudding is in the scientific eating, not in the consistency with the Bible.

Q. So it has to survive the testability that you talked about?

A. Yes. And here I would emphasize the point that testability is a notion that is neutral to the tested parties. So it's, you know -- so, in other words, one doesn't, as it were, have theistic tests that only theistic people can abide by.

Q. Matt, could you put up Plaintiffs' Exhibit 718.

A. Oh, yes.

MR. WALCZAK: May I approach, Your Honor?

THE COURT: You may.

THE WITNESS: Thank you.

BY MR. WALCZAK:

Q. This is an article written by Professor Behe.

A. I'm familiar with it.

Q. You are familiar with it. If you could turn to Page 705 of this.

A. Yes.

Q. And you'll see about four lines down it says, The argument is less plausible to those for whom God's existence is in question and is much less plausible for those who deny God's existence. Do you see that?

A. What is he referring to?

Q. He's referring to intelligent design. The question is, What if the existence of God is in dispute or denied? I mean, please, if you'd like to take a moment to read that.

A. Yeah. Okay. How much of this do you want me to read for myself?

Q. Well, let me --

A. I just looked at the first paragraph. Do you want me to look at any more of it?

THE COURT: You can read all of the article that you desire to make sure --

THE WITNESS: Well, I'm not sure what he's asking.

THE COURT: Well, if you need to read more based on his question, then you can tell him.

THE WITNESS: Okay.

THE COURT: But suffice it to say that you've read the referenced paragraph. Is that correct?

THE WITNESS: Yes.

THE COURT: All right. Then you go ahead with your question.

BY MR. WALCZAK:

Q. So if the validity of a theory or belief in a theory depends on whether or not you believe in God or not, does that undermine your assertion that this would be science?

A. But he's not saying that. He's saying plausibility.

Q. He's saying that if you are not sure about the existence of God, it makes this theory less plausible, and that if you deny the existence of God, if you're an atheist, then that makes the theory even much less plausible. If you have a theory that depends on whether or not you believe in God or not --

A. I think he's talking about the context of discovery. Namely, is this kind of theory, intelligent design -- what kind of person is likely to be drawn to it is something to turn into a research program. So it's a context of discovery matter, I take it.

And historically, it is true, people like Sir Isaac Newton and Mendel who, in a sense, thought they could get into the minds of God had a much easier time dealing with the design standpoint. Okay? And I think that's all he's saying. I might be wrong. I haven't read the whole thing. But, you know, if that's what he's saying, that's pretty innocent. He's not saying validity, he's saying who would be attracted to this as a kind of argument to pursue.

Q. Well --

A. I mean, again, I'm guessing what he really says here, but it seems to me he's not talking about validity. He may be later. You tell me.

Q. Well, he's talking about the plausibility of the argument.

A. Okay, but plausibility, in a way, is what would draw you to the argument as something you want to develop. Right? I mean, this is the whole issue about heuristics. Certain kinds of ideas, you know, usually like analogies, metaphors, and things we find quite compelling and we use them as the basis for research. And certain people will be attracted to certain ones more than others. Some are attracted to organic metaphors, mechanical metaphors. It seems to me that's the level at which this remark is being

made, at least prima facie.

Q. Well, but let's take it to the next level of justification. I mean, if that's true, if you're more likely to believe in this if you believe in God, if you're more likely to be attracted and supportive of this argument if you believe in God, does that affect your view of whether or not this is science?

A. Well, look, if this were a statement about the context of justification, where, in a sense, you need to believe in God in order to see the validity of the argument, if that were the case, if that was what he was saying, that would not be scientific.

Q. I believe you testified today that intelligent design is not creationism.

A. That's correct.

Q. But it is, in fact, a kind of creationism, is it not?

A. Well, what I mean there is that there is a historical connection out of which it grew, and we share some similar kinds of proclivities, but it's, in fact, moved in a completely different direction, it seems to me.

Q. But it's a modern view of creationism?

A. I think that's a little misleading. It's a really radical transformation. It's a really

substantively different thing, and that's indicated by the kind of training of the people who are, in fact, in intelligent design. They actually are trained as scientists of one sort or another.

Q. If you could turn to Page 67 of your deposition.

A. Bear with me. I have some of my pages confused. I'm sorry.

Q. Take your time.

A. Page 67?

Q. Yes.

A. Okay.

Q. Line 15. And the question asked is, You've used this phrase ID in conjunction with earlier forms of creationism, not just in your previous answer, but also in your report. And I infer from that what you mean is intelligent design is a modern view of creationism. Then there's an objection from Mr. Gillen, and then the question restated, Is that correct? And your answer is, Well, again, yes, in a sense, but, I mean, not all creationism has been six-day creationism.

So this isn't young earth creationism, but it is a modern view of creationism, it's a type of creationism?

A. I would say it has evolved out of creationism, but it's become a totally different thing, something where one doesn't need to be an adherent to the various theological views of creationism in order to practice it.

Q. If you could go to the next page, Page 68, and starting on Line 21, the question is, Intelligent design is creationism, not just six-day creationism? And then your answer beginning on Line 24, It is a kind of creationism, it is a kind of creationism.

I didn't read the same passage twice. It's actually twice on there. Did I read that accurately?

A. Well, it looks like that is what the sentences say. But, I mean, if I may, let me just have a look here. Well, it seems to me that what I'm talking about here is that there is some historical connection between creationism and intelligent design. And so in that sense, there is a genealogy that goes back to that. But that's all I'm saying at this point. I'm not saying that to practice intelligent design, one has to be some kind of creationist.

Q. And if you could now turn the page --

A. Turn the page literally?

Q. I'm sorry, to 69.

A. Oh, okay.

Q. And beginning on Line 2, the question is, When you use the word "creationism," what do you mean? And could you read Lines 4 through 9, please, into the record.

A. Well, I mean that the idea that there is a kind of unified order to nature that is evidence of intelligent design. I mean what we now call intelligent design which used to be called the creator because the creator was always the person who had the intelligent design. So there is this historical lineage. I don't think that's controversial. So I'm making a historical point here. That's all I'm doing, is making a historical point.

Q. And creationism presupposes a creator that is separate from creation?

A. Yes, that's kind of the supernatural element, you might say.

Q. What we now call the intelligent designer used to be called the creator historically?

A. Yes.

Q. Because the creator was always the person who had the intelligent design?

A. That's a historical point, yes.

Q. The term "special creation," are you familiar with that term?

A. Yes, I am.

Q. And by that do you mean that each of the species was specially created by God or some master intellect that arose -- that they arose and did not come from a common form of life and each one is made specially by design?

A. I mean, the basic point about special creation is the denial of common descent. I think that's the fundamental view about it, much more so even that God happened to have done it. But, again, historically, special creation is connected with this idea of the creator, as well. There are several versions of it. But you've given a particularly sort of strong version of it.

Q. And would you agree that that's a form of special creation?

A. What is a form of special creation?

Q. The definition that I just gave.

A. Yes, it's a strong version of it.

Q. But it is a version of special creation?

A. Well, what you -- the thing that you said, created by God, the species separately, not common descent, and that kind of thing that you laid out.

Q. But is that not, in fact, your definition of special creation?

A. I'm not objecting to it. I'm just saying that there are different types of special creation. And some don't actually have to postulate a creator, it's more kind of a denial of common descent. So if you believe there were multiple origins, perhaps, right, of life or the universe or something like that.

Q. Well, but special creationism really is predicated on species arose from some divine blueprint?

A. Well, I mean, historically there is that connection, but there are people who believe -- who seem not to worry about the creator. I mean, Linnaeus may have been one example, actually, because Linnaeus has a kind of special creation presupposition built into his classification system but not a lot of thought about God behind it.

Q. And special creation is a remnant of the old biblical creation story?

A. Historically, of course. But then most notions in biology have some kind of root back there.

Q. And I believe you just said that special creation is really the opposite of common descent?

A. Historically, yes, that's true. And certainly they move in different directions, different spaces.

Q. Matt, could you put up Plaintiffs' Exhibit 562, the page we've identified.

MR. WALCZAK: May I approach, Your Honor?

THE COURT: You may.

THE WITNESS: Thank you.

MR. WALCZAK: Matt, can you blow up the passage in question.

BY MR. WALCZAK:

Q. Dr. Fuller, let me direct your attention to the bottom of Page 214.

A. Um-hum.

Q. And there's a passage there. It appears to be a definition of creation. And I want to ask you to read that and then tell me whether you agree that that's a definition of special creation.

A. What are you referring to exactly?

Q. I'm sorry, on Page 2-14.

A. Yeah.

Q. At the very bottom.

A. So where it says, Creation means that?

Q. Right, and then it goes on to the next page.

A. Okay.

Q. If you could read that out loud, I'm sorry.

A. Oh, okay. Creation means that various forms of life began abruptly through the agency of an

intelligent creator with their distinctive features already intact, fish with fins and scales, birds with feathers, beaks, and wings, et cetera. Is that enough, or do you want me to go on?

Q. No, that's fine. Would you agree that that's a definition of special creation?

A. That's certainly one way of capturing it, yes.

Q. That is a definition, a definition of special creation?

A. Yes.

Q. In a 1998 article, the First Global Cyberconference on Public Understanding of Science, is that something you wrote?

A. Yes, I was the one who ran the thing, and this is a report on it you're referring to.

MR. WALCZAK: May I approach, Your Honor?

THE COURT: You may.

BY MR. WALCZAK:

Q. I want to direct your attention to Page 331.

A. Um-hum.

Q. And about halfway down the first paragraph it says -- I'm going to read it starting with the word "however."

A. Yes.

Q. And this is something you wrote?

A. Yes.

Q. It reads, However, American discussions of PUS -- and, I'm sorry, PUS is public understanding of science?

A. Yes.

Q. American discussions of public understanding of science have been more open to matters concerning alternative medicine and so-called new-age and multicultural knowledges, as well as the incorporation of religiously inspired doctrines, and then in parentheses, e.g., intelligent design theory, a.k.a. creationism, close paren., into mainstream science education.

A. Yes.

Q. Did I read that correctly?

A. Yes, you did.

Q. And that's something that you wrote?

A. Yes, I did.

Q. And "a.k.a." means also known as?

A. Yes, it does.

Q. So that phrase actually reads, intelligent design theory, also known as creationism?

A. Well, I think what I was referring to is that is, in fact, how it is known. It's not

necessarily my equation or endorsement of the two things.

Q. Now, this piece was published in *Darwinism, Design and Public Education*?

A. No, you're thinking of the other piece.

Q. The other piece.

A. That came up in the deposition.

Q. So this piece was published in 1998?

A. That's right. And that's an issue, too, because there's a sense in which intelligent design, in its scientific form, really has only taken off in a serious way since 1996, I would say. So there is a sense in which there is some fuzziness here about the dividing line. But if I were writing this today, I would make a very clear distinction because it seems to be there are two clearly separable tendencies going on here.

Q. So it was creationism and then sometime in 1996 or later it stopped being creationism?

A. No. What happened is, new people started to get involved with it. Behe and Dembski weren't part of the old creationist crowd. Okay? I mean, they are different people. They're sort of like a new generation of people who may be religiously inspired but who are sort of playing by the rules of science

and have proper scientific training. So it's a sort of different ball game, people with different backgrounds.

Q. So could you say that this is creationism without reference to God or the Bible and it's really expressed in the language of --

A. What kind of creationism is this that we're left with then you have to wonder.

Q. Well, would you say that it's creationism expressed in the language of biochemistry and information theory?

A. Well, look, after a certain point, it doesn't matter what the motivation is. If it's done in information science and biochemical theory or whatever, then that's what it becomes, regardless -- even if there was some sense in which this stuff was religiously motivated, if it is being completely or largely expressed in the idioms of these sciences, then it has effectively entered into the scientific domain.

Q. So even though it may be the same concept but now you're talking about it in scientific or mathematical terms --

A. You're getting metaphysical with me here. The same concept? You mean the same motivation, don't

you?

Q. No, I'm talking about the same concept of special creation.

A. No, it isn't the same concept. I mean, I don't see it. Maybe you see it. I don't see it. I don't see it as the same concept. I see it -- you know, it's like the emergence of a new species.

Q. But with historical roots and a common ancestor?

A. Yes. But, you know, again, this is where you have to distinguish context of discovery and context of justification. You can't damn people by their roots.

Q. And in 1998, when you published the article, you used the word "creationism" so people had a sense of what exactly intelligent design is without having to give a whole song and dance about it?

A. I'm not sure why you infer that. I mean, I guess I don't see -- no, I don't know why you --

Q. Why did you use the term "creationism" in that passage that we referred to before? I mean, you wrote --

A. Yes.

Q. -- intelligent design a.k.a. creationism. Why did you do that?

A. Why did I do that? Well, because that term was coming into vogue at the time and it wasn't quite understood where that term was coming from. And so, in a sense, I was giving a kind of historical marker to it.

Q. So you were using creationism as a marker for --

A. Yes. And also, to be perfectly honest, I wasn't all that familiar with intelligent design back then. I had some knowledge of it, but there was a sense in which differences of the kind that I'm able to sort of be more confident about I wasn't so clear on before. I mean, the thing has changed, and I've learned more about it.

Q. So you were using creationism as a place holder because you didn't know that much about it?

A. Well, I -- in a sense, yes. I mean --

Q. Do you know Jon Buell?

A. No.

Q. Do you know who he is?

A. No. Who is he?

Q. President of the Foundation for Thought and Ethics.

A. No. I don't travel in those circles.

Q. So it's just purely a coincidence that you

and he picked the same place holder, creationism for intelligent design?

A. I'm not sure why you bring him up. Do I have some connection with him?

Q. I was asking whether you did.

A. No.

Q. And so you would agree that ID has its roots in creationism?

A. All I'm saying is that there is historical connection, a historical tie, but that's all I'm saying.

Q. And it's a way of interpreting creationism?

A. No, I'm saying it goes way beyond that and doesn't even require -- it doesn't require interpreting creationism.

Q. If you could turn to Page 153 of your deposition, please. And if you could look at the bottom, I'm going to read the question and ask you to read the answer. The question is on Line 21. But clearly you are indicating that intelligent design is creationism --

A. I'm sorry, I'm losing the plot here. Where are you?

Q. I'm sorry, Page 153, Line 21.

A. Right, okay. Go ahead.

Q. Question: But clearly you are indicating that intelligent design is creationism in some sense? And then Mr. Gillen objects. And then your answer, if you could read your answer going through Line 1 of the next page.

A. It is -- it does have roots in that. I mean, intelligent design is a way of interpreting creationism, that's true. Okay. I didn't say it was exclusively that, and I do think it's an unfortunate choice of words.

Q. Why is it unfortunate?

A. Well, because, first of all, it gives the impression that intelligent design is exclusively to be understood in relation to creationism. That's sort of the main error. But also to talk about intelligent design as a kind of interpretation rather than as an original sort of form of research. That is something I think was misspoken. Certainly I wouldn't say that today.

Q. Now, intelligent design uses human design capacities to lead us to conclusions about what nonhuman, non-natural actors can do in terms of creating biological life?

A. Yes, that sounds right.

Q. And this goes back to the Reverend William

Paley?

A. Well, William Paley, as I mentioned, is one such source, not exactly my ideal source, but he is one source for this.

Q. And Paley -- and, again, correct me if I'm wrong, I'm a novice at all this, but Paley's idea was if human beings can do it, then God can do it kind of in a bigger way?

A. Well, that's kind of -- that's kind of the idea, though, in fact, the motivation traditionally has been because we're created in the image and likeness of God, we can understand the plan. It was originally -- the design inference wasn't an inference to the existence of God but rather to the capacities of humans to be able to understand the universe.

Q. But that's the --

A. But Paley, yeah, you're describing correctly.

Q. And that's the theological, not the scientific, but the theological basis for the design argument?

A. That's correct.

Q. And historically the designer has always been known as a certain kind of monotheistic conception of God?

A. Yes, it is in that tradition that comes about, yes. You need a God that's detachable from the creation.

Now we're getting some stuff. That's what you were talking about.

MR. WALCZAK: I'm sorry, Your Honor, one minute.

THE COURT: That's all right.

MR. WALCZAK: May I approach, Your Honor?

THE COURT: You may.

BY MR. WALCZAK:

Q. I show you what's been marked as Plaintiffs' Exhibit 787.

A. Yes.

Q. And do you recognize this?

A. I certainly do.

Q. And this is part of the book *Darwinism, Design and Public Education*?

A. That's correct.

Q. And this is something that you wrote?

A. Yes.

Q. And if you could turn to Page 538.

A. Yes.

Q. Near the bottom of the first full paragraph --

A. Yes.

Q. -- you wrote, It is surprising that the controversial implications of Meyer's proposal do not seem to have been registered in religious circles.

A. I see what you're looking at. Okay.

Q. Is that what you wrote? Did I read that accurately?

A. It is surprising that the controversial implications of Meyer's proposal do not seem to have been registered in religious circles, yes.

Q. And Meyer is Stephen Meyer?

A. I guess. Yes, it is.

Q. And he's a senior fellow at the Discovery Institute?

A. Yes. He's one of the editors of the volume.

Q. And back on 230 -- 536, at the bottom of the page there, you discuss what Meyer's proposal is?

A. Yes.

Q. And that actually is another volume in the book, correct, *Darwinism, Design and Public Education*?

A. This is where this is from.

Q. But the article --

A. What I'm talking about is in there?

Q. Yes.

A. That's what you're asking me. Yes, I

believe so.

Q. And if you need a minute just to familiarize yourself with the argument --

A. And you just want me to consider Meyer's point here, the part about Meyer?

Q. Do you recall now what you wrote about Meyer?

A. Yes.

Q. Let me try to summarize what Meyer's point was, essentially that genetic information exhibits specified complexity?

A. Yes.

Q. And that science can't explain the origin of genetic information, that physical and chemical laws cannot explain the ordering of DNA and proteins because they do not specify any particular order in a chemical chain of letters and that random assembly of functional genes and proteins is far too improbable to actually occur?

A. Yes.

Q. And that was Meyer's argument?

A. Yes.

Q. And then Meyer's also said, intelligence can explain the origin of specified complex information?

A. Yes.

Q. And, therefore, we infer that ID is the best explanation?

A. Yeah, well, okay. That doesn't follow.

Q. I'm sorry, that doesn't logically follow?

A. No. There are more steps to be made here.

Q. But that was Meyer's argument there?

A. Yes, but people do make these inferences to the best explanation much prematurely. It's not my favorite form of argument, but it is one that has been used a lot in science.

Q. And you believe that there is a theological problem with Meyer's argument, don't you?

A. Let me just -- do you know where I actually say that? I don't give that much thought to Meyer, I must confess.

Q. Well, I'm asking you now.

A. I see, you're asking my opinion about this.

Q. Yes.

A. Whether there's a theological problem with Meyer's argument.

Q. Well, did you identify a theological problem during your --

A. May I have a look at what I was saying -- I guess this refers to the theologians being upset with what he's saying. I don't recall what it was that I

meant, so may I check?

Q. Please.

A. Can you tell me again where it was? I'm sorry, I lost the original cite for Meyer that you mentioned and where I say that Meyer has these theological difficulties.

Q. I didn't say you said it in this article. I'm asking you now whether or not you agree that there are theological problems with Meyer's position.

A. But you did point to me earlier something that --

Q. Right, I pointed you to page -- I believe it's 538.

A. Okay. I'm sorry to be so dense about this, but --

Q. I'm sorry, it's probably my questions.

A. Like I said, I don't give a lot of thought to Meyer's theological implications. I found it. Could I have just a moment to look at it?

Q. Please.

A. Okay, yes, okay.

Q. So at the beginning of that paragraph on 138 --

A. 538.

Q. I'm sorry, 538, you're right. My tentative

approval notwithstanding, Meyer's view raises its own questions, one theological and the other more strictly scientific. Is it reasonable or even non-blasphemous to suppose that God is the ultimate artificer?

A. Yes.

Q. Did I read that correctly?

A. That's correct, yes.

Q. And you view that as a theological problem with Meyer's argument?

A. Yes. I mean, this is the playing God issue that I was talking about earlier this morning that was one of the reasons why a lot of these design-oriented people like Newton had to kind of go underground with their theological views because, in a sense, they thought they could know the mind of God, and Meyer's seems to be kind of moving in the same direction with his theory.

Q. So even if we understand how human beings create things, why should we think this is any kind of model for understanding how God does things and let alone how life is created?

A. Well, that's correct. I mean, I didn't say that I endorsed that particular -- if that's the inference that he's drawing, I don't particularly endorse it. I mean, I actually think the way that the

design works, the design -- the argument for design in science works the other way around, namely by putting ourselves in the mind of God as if we were God, we can sort of understand how the natural world works rather than saying that we can infer God from the way humans do things.

Q. I'm sorry, and you're saying he's doing which of those?

A. He's trying to actually figure out the existence of God. And I'm saying people like Newton thought they already knew God's mind, and they were trying to figure out how nature works.

Q. But you would conclude that it's blasphemous to suggest that we know -- that what we know and what we can do is a model for God?

A. I think this is the kind of thing a lot of theologins would get upset about. I personally wouldn't lose sleep over it. I happen to like the connection between the human artificer and God. And I like the idea that people can think of themselves getting into the mind of God, because I think that's been very helpful in the promotion of science. And, again, Isaac Newton is my benchmark. So I have no problem with this, but I understand theologins would find this blasphemous because who are we to sort of

figure out how God's mind works.

Q. Well, and not only theologins, but there may be non-theologins. They may be everyday, average, ordinary people who would find this blasphemous?

A. Sure, yes. Yes, I mean, I didn't say that Stephen Meyer would make it to Heaven.

MR. GILLEN: And you haven't been qualified in that area.

MR. WALCZAK: I have no further questions.

THE COURT: Ending on that note, redirect.

REDIRECT EXAMINATION

BY MR. GILLEN:

Q. I know it's 9:00 in Great Britain.

A. All right. I've lost track of the day since I've been here.

Q. And it's only 4:00 here, but I think we feel the same in a lot of ways. We're going to wrap this up quickly.

Mr. Walczak has directed your attention to a few pages of your deposition, Steve, and for the sake of ensuring completeness in the treatment of your testimony there, I want to ask you to look at a few more passages.

Working our way back, I'd ask you to look at -- Mr. Walczak asked you to look at a question and

answer series at the bottom of Page 153. Would you look at 153 and see if you can see that passage you were asked to look at.

A. Okay, I see the page. Remind me what I'm supposed to be looking at.

Q. Sure. Starting at -- look at 19. It says, Question: Okay. And 20, you say, No, so it's not that kind of creationism. Mr. Walczak asked you about the lines on 153 running over into 154. I want to ask you to continue and read through 154 beginning at Line 3 down through Line 18, please, for the record.

A. For the record.

Q. Yes.

A. Okay. So starting with Mr. Rothschild's question?

Q. Correct.

A. Okay. Mr. Rothschild says: Okay. And what aspects of -- what do you mean by creationism when you say intelligent design does have roots in creationism or is creationist? Mr. Gillen: Objection to form. The witness: Well, I mean the motivation. The motivation for putting forward intelligent design is from people who do think there is a divine creator. I mean, I think historically that's been the case, and I think it's probably true of these people. But, again,

what makes it science isn't that fact. I mean, again, all kinds of religious motivations inform science. I mean, so there's nothing, in a sense, by calling it creationism. What I'm doing is I'm giving something about the motivation of the people but not necessarily about the scientific status of what they're doing. Those are two separate issues. You've got context of discovery, context of justification.

Q. Is that consistent with the testimony you offered here today on your direct?

A. Yes.

Q. Okay. I'd also ask you to direct your attention to Page 146. And you'll see, if you look at 145-146, you were asked questions about this, Plaintiffs' Exhibit 788. And I want you to read your testimony there as it relates to 146 beginning at Line 6 where you talked about this a.k.a.

A. Yes, so this is from the Public Understanding of Science article.

Q. Right, beginning at Line 9.

A. The witness: But it's -- no, but it's not all of creationism. And it's, in fact, a part of creationism that gets taken into science. So, I mean -- I mean, obviously I'm just -- because in the time that this piece was written, right, so this was

written in 1998, intelligent design theory wasn't that widely used as an expression, so I put the creationism in there so people kind of have a sense of what exactly intelligent design is without me having to give a whole song and dance about it because I'm just using it as an example. But I didn't mean to say that everything about intelligent design corresponds to everything about creationism.

Q. And what I want to get at, Steve, is to make sure that's clear. Are you saying, again, that the context of discovery is there are elements of continuity, but with respect to the context of justification there is what you regard as a critical difference?

A. Yes, that's correct.

Q. And what is that critical difference?

A. Well, it has to do the way by which theories are tested in intelligent design and validated, at least in principle, by scientific means and also the sort of people who are doing it are, in fact, people who do have scientific credentials of some sort, unlike the previous generation of people who are associated with creationism. So there are some really clear kinds of breaks that one can talk about both philosophically and sociologically.

Q. In terms of the negative argument, Mr. Walczak asked you if intelligent design theorists make a negative argument against evolutionary theory, that doesn't necessarily prove design. Let me ask you, do evolutionary theorists make the same sort of argument against design?

A. Yes. In fact, that's how I would characterize the presentation that Professor Miller did with the bacterial flagellum where he basically showed that Professor Behe's thesis about irreducible complexity was false and therefore it followed. That was sort of the spirit in which the presentation was being made. And therefore it follows from the natural selection story.

Q. And, Steve, I'd ask you to look again at Plaintiffs' 788 which is the piece on the First Global Cyberconference on the Public Understanding of Science. Turning your attention to Page 331.

A. Bear with me. Where?

Q. Certainly. Page 331.

A. Yes.

Q. You'll see there in that first full paragraph the sentence that Mr. Walczak directed your attention to beginning with "however."

A. Yes.

Q. I'd like you to read that sentence through to the end to yourself.

A. To myself?

Q. Yes. And then I have a question.

A. Okay.

Q. Now, this is another place where you use that a.k.a., and the portion of the sentence I'd like to direct yourself to is the phrase which begins, As well as the incorporation of religiously inspired doctrines.

In light of that language usage on your part in this piece, I'd like you to describe your purpose in terms of the context of discovery versus the context of justification.

A. Well, I'm only referring to the context of discovery here, obviously, when one is talking about religiously inspired.

Q. And so, again, for the purpose of clarity, are you demonstrating that you see this connection as one that is in the context of discovery, not justification?

A. That's correct.

Q. If you would turn your attention back to Plaintiffs' 429, the piece by Nelson.

A. The piece by Nelson, yes.

Q. You've indicated that this is not the sort of big tent that you see intelligent design as. Is that correct?

A. That's correct.

Q. And why is that?

A. Well, because this big tent that's being described here is basically kind of a fig leaf for all of the various forms of creationism that have ever existed. And it seems to me that the -- what is intellectually interesting and substantive and continuous with the history of science in intelligent design is kind of lost from this picture entirely.

Q. Well, and that's what I want to just make clear from your direct this morning. When you speak of intelligent design as having the possibility of providing a big tent, do you mean a big tent of the kind described in this piece?

A. No, I mean of reconfiguring the sciences as they are -- the sciences, the things we normally call science now, but reconfiguring what their relationships are.

Q. So in terms of the context of justification, would that be a big tent that is justified by what you've called the coin of science?

A. By the what of science?

Q. The coin of science.

A. Yes.

Q. Mr. Walczak asked you some questions about the statement and the fact that no -- there is no discussion or questions. Do you know why --

A. No.

Q. -- there are no questions?

A. No.

Q. Do you know why there is no discussion?

A. No.

Q. But do you believe it would be useful in terms of promoting scientific progress for there to be discussion?

A. Yes.

Q. Given your training in the history and philosophy of science and looking at intelligent design theory as it exists today, would you anticipate that a movement which aspires to an explanatory theory at the level of generality proposed by at least some intelligent design proponents to have advanced to the stage where it could be engaged in an experimental program?

A. It still needs to be developed a bit more, but in principle it could. But it really does need more adherence and more time to sort of develop the

implications of its views.

Q. Earlier Mr. Walczak asked you some questions which looked at other sorts of scientific revolutions or paradigm shifts, and there was a suggestion that the case with intelligent design could be the same.

Do you see the situation confronted by intelligent design proponents as different from that of, say, the proponents of plate tectonic theory?

A. Well, I think there's a lot more opposition at the moment to intelligent design theory in terms of being able to get the institutional resources to be able to reach the critical mass to mount a research program.

I mean, because with all these examples that Mr. Walczak brought up, there was still some institutional ability to sort of pursue research, even if it wasn't taken all that seriously at the time. People could train, graduate students could get jobs, and even though they were marginal, they were still there in the system. But I think the problems facing intelligent design are much more radical institutionally.

Q. And in that regard, do you see the nature of the opposition or the resistance as different in kind in terms of metaphysical or ideological dimension?

A. Yes, that's true.

Q. Explain that just generally.

A. Well, I think generally it's -- the religious motivation ends up blocking people from taking the theory seriously. And, in fact, intelligent design has some very natural affinities with a lot of things going on in computer-driven forms of artificial life and artificial intelligence research that, in fact, there could be some alliances forged there.

But I think at the moment, because it's so -- there's such restricted access to it and there are so few people who have an incentive to work on it, that it isn't able to develop those kinds of connections. And so that's why I would say it does need to be mainstreamed.

Q. Mr. Walczak asked you some questions about a piece authored by Behe. And I want to see if I understand or if you need to further explain your position. In terms of the dichotomy between context of justification and context of discovery, from the bit of Behe's article that you looked at, what do you see Behe discussing there?

A. The context of discovery. And the word "plausibility" suggests that to me. He says what

would make it plausible, right, to adopt an intelligent design position would be if you believe in the existence of God. He's talking about the context of discovery, how would one use that as a heuristic for doing research, who would be more attracted to it. But he's not saying anything about how it would be validated.

MR. GILLEN: I have no further questions, Your Honor.

THE COURT: Thank you, Mr. Gillen. Mr. Walczak, recross.

MR. WALCZAK: Just a few.

RECROSS-EXAMINATION

BY MR. WALCZAK:

Q. Dr. Fuller, you're making a distinction in these theories between the discovery phase and the justification phase?

A. Correct.

Q. And see if I understand this. Discovery is sort of the formulation of the idea and you throw it out there?

A. Yes. And it's how you come to the idea. So, you know, what gets -- yeah.

Q. It's the hypothesis?

A. Hypothesis formation, formation.

Q. And the justification is the test, that's where you subject it to empirical testing?

A. That's basically it.

Q. And, now, are you aware that young earth creationists had a scientific component to their theory?

A. No, I'm not aware of that.

Q. Have you ever --

A. I guess I'd like to know what it is before I agree that it was scientific, at least by the likes I've been using it.

Q. And I believe in your expert report you may have referred to *Edwards versus Aguillard*?

A. I referred to it somewhere, but I don't know if it was in the expert witness report.

Q. You're familiar with that?

A. Yes, I am familiar with that.

Q. And that case involved something called creation science?

A. Yes.

Q. And is it your understanding that they were justifying creationism in the coin of science?

A. Well, I actually don't have enough on-the-ground familiarity to know whether they -- I mean, whether this was just a fig-leaf term "science"

or whether there was anything resembling what we would call science there. So I can't really -- you know, I mean, they may have been trying. I mean, obviously using the word "science" suggests they were trying, but whether it would pass my criteria of what science is is another matter.

Q. And what I think I just understood you to say is that in terms of all of these statements that we've shown to you that you've testified about in terms of creationism sharing some concept, some verbiage with intelligent design, that's all on the discovery side of the equation?

A. Yes. I mean, there's not that much verbiage, actually, between creationism and intelligent design these days, even. I mean, maybe some motivational things, but in terms of even how the hypotheses and theories are formulated in the research programs, there's not a lot of overlap in the language.

Q. But the way you've explained all of the statements I read back to you where you were equating intelligent design with creationism, say in this 1998 article, you're saying that's on the discovery side of it?

A. Yes.

Q. So that's in the idea formulation phase?

A. Yes, what's motivating people, yeah, the things that are animating their imaginations.

Q. But on the justification side when it comes to intelligent design, that's the scientific testable side?

A. Yes.

Q. And intelligent design has not yet made its case on the justification side?

A. No, because it's not sufficiently developed yet. You actually have to have more theory developed, you have to have more interpretation of existing phenomena to then be able to develop the appropriate kinds of tests.

Q. And intelligent design has been around for almost 20 years. Is that correct?

A. Has it? That sounds a bit long to me, but --

Q. If *Of Pandas and People* was first published in 1989 --

A. With all due respect, that's a textbook. I mean, you don't use a high school textbook as a benchmark of what science is.

MR. WALCZAK: I have no further questions.

THE COURT: All right. That will conclude

your testimony, Doctor. We thank you.

THE WITNESS: Thank you.

THE COURT: You may step down. We have a couple of exhibits which we should take now. We have, on direct, the CV, which is D243. Move for the admission of 243?

MR. GILLEN: I do, Your Honor.

THE COURT: Any objection?

MR. WALCZAK: No, Your Honor.

THE COURT: D243 is admitted. On cross we have the article by the witness that's P787. Are you moving for the admission of that, Mr. Walczak?

MR. WALCZAK: Yes, Your Honor.

THE COURT: Any objection?

MR. GILLEN: Well, actually, no, I guess not. That's fine.

THE COURT: It's his own article.

MR. GILLEN: Yes.

THE COURT: Well, then without objection, P787. Have I missed anything from either plaintiffs' or defendants' standpoint? Any exhibits?

MR. WALCZAK: I have 788 as not in, Your Honor, the First Global Cyberconference.

MR. GILLEN: Likewise, no objection to that, Your Honor.

THE COURT: That's admitted. P788 is admitted.

MR. WALCZAK: I believe that's it, Your Honor.

THE COURT: All right. From defendants' standpoint, any additional exhibits?

MR. GILLEN: Not at this time, Your Honor.

THE COURT: For this witness. All right. Well, I guess we're going to pick up the testimony of the assistant superintendent, but it's late in the day. It seems late to endeavor to start that. Do you agree?

MR. GILLEN: I do agree, Your Honor. Could we have a sidebar?

THE COURT: You may. Thank you.

(The following discussion was held at sidebar:)

MR. GILLEN: Your Honor, as Liz is bringing the hammer down, I have reluctantly agreed to do Friday and Monday. I wanted to meet with you to ask your forbearance. Bill Buckingham is coming Thursday. The reporters are scheduled for Thursday. I see Mike Baksa continuing on Friday. I will do my best to prepare another witness for that day, and I know I can get someone here, but I might not be able to fill the

whole day.

THE COURT: I understand that. I told Liz that that's no harm, no foul. I don't want to put you in a difficult spot. These are days I can open up. And I really would like to not extend past next week, and so I thought the greater caution would be to open the days up, if that's acceptable to everybody. And if you can't fill a day, that's fine. I hope you'll try.

MR. GILLEN: I will try, Your Honor. I want this over as much as the next one.

THE COURT: I have a creeping concern which hasn't elevated to the point of hysteria. Perhaps it is for Liz, but not with me. And that's why we're opening up these days. If we end up with an early quit on Friday -- I was going to be here doing case management conferences anyway. It seems absurd for me to spend time doing that when we could open up a trial day. Monday I had a sentencing hearing all day, and it was not a problem to move that to next month. I know you have travel issues and other things, and I don't want to put you in a difficult spot, but on the other hand --

MR. GILLEN: All good things must come to an end.

THE COURT: Yes. But it seems to me that the plaintiffs have been good about --

MR. GILLEN: They have.

THE COURT: -- taking witnesses out of order. And if we shuffle Baksa back in the deck, I don't think that that's going to be a problem for you.

MR. ROTHSCHILD: And if we end a little early on October 31st so I can get home for trick or treat, also no objection.

THE COURT: I'm past trick or treat.

MR. ROTHSCHILD: You can come to my neighborhood.

THE COURT: What costume would I wear?

MR. GILLEN: But that was my request, and I thank you, Judge, for your forbearance.

MR. WALCZAK: I don't know how long you expect Mr. Buckingham to go on Thursday, but I don't know that the reporters are going to take a half a day, so we may have some time Thursday to finish Baksa.

MR. GILLEN: Okay. And I frankly can't be sure. I think Mike is -- my guess is, just because of the paper that he's responsible for, will take the morning and maybe just a little bit of the afternoon on Friday.

MR. WALCZAK: On direct.

MR. GILLEN: Yeah. There's just a lot of paper with him. He was the gatekeeper.

THE COURT: Who is that?

MR. GILLEN: Mike Baksa.

THE COURT: So Thursday you anticipate doing what?

MR. GILLEN: Buckingham, the reporters, and if I have to do Mike, I guess I'll try and --

MR. WALCZAK: The other option is -- and I've talked to Niles Benn, and he said the earliest he could do it is the 27th -- we could do the reporters later.

THE COURT: No, get Benn while you can. I don't want to get another call from Benn. We're going to get Benn here. You told him Thursday, you're going to do the reporters on Thursday. I don't want --

MR. GILLEN: Thursday it will be.

THE COURT: I don't want another excuse as to why he can't come in here, medical or otherwise. If I have to get an ambulett to bring Mr. Benn in, we're going to have the reporters' testimony.

MR. ROTHSCHILD: The other thing is, I think we still have to do the Nilsen exhibits. We can do that on Thursday or Friday, as well.

MR. GILLEN: Yes.

MR. WALCZAK: We have the expert exhibits. We have Padian, Miller.

MR. GILLEN: Right.

THE COURT: We'll take care of that. But we'll open it up for Friday, for the 28th, and Monday the 31st. And Liz will execute me for saying this, but if worse came to worse, I mean, I can't make you do what you can't do, and if you don't finish by the end of next week, I'm going to let you try your case, and I'll have to do what I have to do, so you understand that.

I'm just trying, as much as I can, given everybody's schedules -- you know, I want to give everybody an opportunity to put their case on, so if we have to go further, we'll go further. But I'd like to try to add days within the weeks that we set rather than to add them --

MR. GILLEN: I appreciate the consideration.

THE COURT: I have my whole docket being compressed back to the end of the year, and I'm supposed to start criminal trials that following week.

MR. GILLEN: I feel like my whole life is being compressed.

THE COURT: I feel similar. All right.

Thanks, fellows.

MR. WALCZAK: Thank you.

MR. ROTHSCHILD: Thank you.

(The discussion at sidebar was concluded.)

THE COURT: All right. The consultation with counsel at sidebar was for the purpose of scheduling. Let me make this announcement. We are now, with the cordial agreement of all counsel, going to -- in addition to the trial date previously scheduled for October the 27th, which is Thursday, we will now sit on Friday for as long as we can. It may be a full-day session or it may not, depending upon the availability of witnesses on somewhat short notice. So we will sit on Friday the 28th.

We will likewise sit on Monday the 31st of October. We're adding that as a trial day next week, as well. I think that is our fourth trial day now next week. I think we had previously scheduled three trial days. Am I correct, Counsel?

MR. GILLEN: Yes.

THE COURT: So that will add day four in an effort to conclude this matter by the end of next week, if at all possible, with the cooperation of counsel and the parties. So we'll have two more trial days this week, one more the following week. We have

a total of three this week and then four next week.

With that, we'll then adjourn today, and we will be in recess until Thursday morning the 27th when we will reconvene at 9:00 a.m. on that day. We'll see you then. Thank you.

(Whereupon, the proceedings were adjourned.)

CERTIFICATION

I hereby certify that the proceedings and evidence are contained fully and accurately in the notes taken by me on the within proceedings and that this copy is a correct transcript of the same.

Dated in Harrisburg, Pennsylvania, this 26th day of October, 2005.

/s/ Lori A. Shuey

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