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

Tammy J. Kitzmiller, et al., :
: :
vs : 4:04-CV-2688
: :
Dover Area School District; :
Dover Area School District :
Board of Directors :

BEFORE: Honorable John E. Jones III
PLACE: Harrisburg, Pennsylvania
PROCEEDINGS: Non-Jury Trial
DATE: Tuesday, October 18, 2005;
1:25 p.m.

AFTERNOON SESSION

APPEARANCES:
For the Plaintiffs: ERIC J. ROTHSCHILD, ESQ.
WITOLD J. WALCZAK, ESQ.
STEPHEN G. HARVEY, ESQ.
RICHARD B. KATSKEE, ESQ.
For the Defendants: PATRICK T. GILLEN, ESQ.
RICHARD THOMPSON, ESQ.
ROBERT J. MUISE, ESQ.

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1 (1:25 p.m., convene.)

2 (Direct examination of Dr. Michael J. Behe
3 continued.)

4 THE COURT: Be seated, please.

5 All right, back to you, Mr. Muise.

6 MR. MUISE: Thank you, Your Honor. May I approach
7 the witness?

8 THE COURT: You may.

9 BY MR. MUISE:

10 Q Dr. Behe, I've handed you what's been marked as
11 defendant's exhibit 220, which is a copy of *Pandas and*
12 *People*, the second edition. Do you see that?

13 A Yes, I do.

14 Q I would like to direct your attention to page 99,
15 please. I would like to read to you and oft-quoted passage
16 in this case thus far. If you'll look at the bottom on page
17 99, it's going to continue onto 100 as well. It says,
18 quote, Intelligent design means that various forms of life
19 began abruptly through an intelligent agency with their
20 distinctive features already intact: Fish with fins and
21 scales, birds with feathers, beaks and wings, et cetera.
22 Some scientists have arrived at this view since fossil forms
23 first appeared in the record with their distinctive features
24 intact and apparently fully functional rather than gradual
25 development.

1 And I would like to get your reaction to that
2 section?

3 A Well, it says -- it says that some scientists have
4 arrived at this view. I think that's a way of saying that
5 this is a matter of disagreement and dispute.

6 I certainly do not think that intelligent design
7 means that a feature has to appear abruptly. And I -- I
8 certainly would have written this differently if I had done
9 so.

10 Q Now, you say you would have written it differently.
11 Is there another reference or another section in *Pandas* that
12 you could direct us to to emphasize that point?

13 A Yes. I wrote the section at the end of *Pandas*
14 which is discussing blood clotting. And on page 144 of the
15 text there's a section entitled "A Characteristic of
16 Intelligent Design." And it begins, "Why is the blood
17 clotting system an example of intelligent design? The
18 ordering of independent pieces into a coherent whole to
19 accomplish a purpose which is beyond any single component of
20 the system is characteristic of intelligence."

21 Q And why did you direct us to that particular
22 section?

23 A Because I think it more clearly conveys the central
24 idea of intelligent design, which is the purposeful
25 arrangement of parts.

1 Q Do you see that then as a, perhaps a better
2 characterization, or more accurate characterization of
3 intelligent design?

4 A Yes, I like this a lot better.

5 Q Now I want to read you a couple of quotes regarding
6 this notion of abrupt, or abrupt appearance. This one is
7 from Ernst Mayr, from *One Long Argument*, which is one of the
8 documents you had referenced in your testimony. It says,
9 quote, Paleontologists have long been aware of a seeming
10 contradiction between Darwin's partial of gradualism and the
11 actual findings of paleontology. Following phyletic lines
12 through time seem to reveal only minimal gradual changes but
13 no clear evidence for any change of a species into a
14 different genus or for the gradual origin of an evolutionary
15 novelty. Anything truly novel always seem to appear quite
16 abruptly in the fossil record, end quote.

17 I want to read you one more quote, and this is from
18 a writing by a gentleman whose last name is Valentine.
19 Quote, It is this relatively abrupt appearance of living
20 phyla that have been dubbed the Cambrian Explosion, end
21 quote.

22 Do you see those -- those references to abrupt that
23 I just read to you comparable to the reference in *Pandas*?

24 A Yes, they seem to be talking about the same things.

25 Q Well, Dr. Padian, if my recollection is correct,

1 testified that the two were speaking of different things,
2 the quotes that I read to you were speaking of abrupt in the
3 sense of geological time whereas *Pandas* is not speaking so
4 much to that effect.

5 MR. ROTHSCHILD: Objection, it's mischaracterizing
6 Dr. Padian's testimony.

7 THE COURT: In what sense?

8 MR. ROTHSCHILD: Dr. Padian is referring to the
9 appearance of fossils in the record, not to the abrupt
10 appearances of creatures for the first time. He's not
11 talking about, in the sense of geological, he's talking
12 about the fossils -- when we find fossils.

13 THE COURT: Well, the precursor to your question
14 assumed that you weren't sure if you had it right. If
15 you're going to cite to Dr. Padian's testimony, you ought to
16 be sure.

17 MR. MUISE: Your Honor, I can ask a question, I
18 think, which I think I have a pretty decent recollection of
19 what it was. But I can ask the question where I don't have
20 to refer to Dr. Padian but I think it will achieve the
21 objective.

22 THE COURT: That might resolve the problem. If
23 you're going to try to paraphrase Dr. Padian without
24 referring to a transcript I think you're going to get
25 potentially some difficulty. So I'll sustain the objection

1 on that basis. You can rephrase.

2 BY MR. MUISE:

3 Q Dr. Behe, do you see -- well, those quotes that
4 I -- that I read to you, and the quote out of *Pandas* which
5 you read, you already testified that you see them similar in
6 a sense. Do you see that they're similar in a sense that
7 abrupt is speaking to this -- a concept in geological time?

8 A Yes. *Pandas* is speaking of the fossil record, from
9 what I read. So how else can we tell about the appearance
10 except the appearance in the fossil record? So I think
11 it's -- it's exactly the same. It's the appearance, the
12 abrupt appearance, as Mayr and James Valentine said, of
13 these things in the fossil record.

14 Q You indicated that intelligent design doesn't
15 require abrupt appearance, is that correct?

16 A Yes, that's right.

17 Q Does it say anything directly about the pace of
18 change?

19 A No. Again, intelligent design simply is the theory
20 that designed features can be detected from the physical --
21 physical evidence of nature, it's seen in the purposeful
22 arrangement of parts, but it does not say anything directly
23 about how fast such a thing might go, how slow such a thing
24 might go, or other interesting questions.

25 Q And if there's an abrupt appearance of fossils in

1 the record, would that be consistent or inconsistent with
2 intelligent design?

3 A It's completely consistent with intelligent design.
4 An abrupt appearance, a slow appearance; intelligent design
5 does not speak to the pace of such things.

6 Q And I believe you testified previously you would
7 have perhaps written that section differently.

8 A Yes. The way I would have put it is the way I did
9 put it in the section on blood clotting.

10 Q I'd like to ask you to turn to page 100 of *Pandas*.
11 I want to continue down on that same section.

12 And it says, quote, This alternative suggests that
13 a reasonable, natural cause explanation for origins may
14 never be found, and then intelligent design best fits the
15 data, end quote.

16 And I'd like to get your reaction to that sentence.

17 A Well, it seems perfectly sensible to me. It seems
18 quite correct. We currently don't have a natural cause
19 explanation. We might never have one. But a natural cause
20 explanation is not being ruled out. And the development of
21 a natural cause explanation in the future is not being ruled
22 out. And you know it's, again, it's likened to the Big Bang
23 theory.

24 The Big Bang theory did not postulate a natural
25 cause explanation for the Big Bang. We don't currently have

1 a natural cause explanation for the Big Bang. We may never
2 have a natural cause explanation for the Big Bang. But
3 nonetheless, the Big Bang theory is thought by physicists to
4 best fit the data that we currently have. And right now I
5 think intelligent design also best fits data that we
6 currently have.

7 Q So Dr. Behe, do you think *Pandas* would be a good
8 book, a good reference book for students to have access to?

9 A Yes, I do.

10 Q And why is that?

11 A Well, because in order to best discern the
12 difference between facts and theories, it's extremely useful
13 to be able to view facts from a couple of different
14 theoretical perspectives. It would help a student separate
15 theory from facts. It would help show a student that the
16 strength of facts, the strength of support that facts lend
17 to a theory can oftentimes depend on a theory -- excuse me,
18 a theoretical perspective somebody committed to a theory
19 might see the facts as more strongly fitting the theory than
20 somebody else. It also might help the student see that
21 difficulties with the theory -- the strengths of the
22 difficulties are also relative to the viewpoints that people
23 bring to the table, that somebody who views a theory as very
24 strongly supported already like, for example, the ether
25 theory of light, will view difficulties with the theory a

1 lot differently and perhaps a lot more permissively than
2 somebody who does not share the same theoretical
3 perspective. So I think it would be very good for that
4 purpose.

5 Q So you're aware that a statement is read to
6 students at Dover High School?

7 A Yes.

8 Q And I would like to read to you the statement, and
9 I'll represent to you this is the statement that was
10 prepared to be read in January of 2005: "The Pennsylvania
11 academic standards requires students to learn about Darwin's
12 theory of evolution, and eventually take a standardized test
13 of which evolution is a part. Because Darwin's theory is a
14 theory, it continues to be tested as new evidence is
15 discovered. Theory is not a fact. Gaps in the theory exist
16 for which there is no evidence. A theory is defined as a
17 well-tested explanation that unifies a broad range of
18 observations. Intelligent design is an explanation of the
19 origin of life that differs from Darwin's view. The
20 reference book *Of Pandas and People* is available for
21 students who might be interested in gaining an understanding
22 of what intelligent design actually involves. With respect
23 to any theory, students are encouraged to keep an open mind.
24 The school leaves the discussion of the origins of life to
25 individual students and their families. As a

1 standards-driven district, class instruction focuses upon
2 preparing students to achieve proficiency on standard-based
3 assessments."

4 Is it your understanding that's the statement that
5 is read to the students?

6 A Yes.

7 Q Did I say anything in that short statement that in
8 your expert opinion would cause any harm to a student's
9 science education?

10 A No, I can't see anything.

11 Q Now, the first paragraph says, "The Pennsylvania
12 academic standards requires students to learn about Darwin's
13 theory of evolution and eventually take a standardized test
14 of which evolution is a part."

15 What does that say to you?

16 A If I were a student it would say that I was going
17 to be tested on evolution, so if I wanted to do well that I
18 should study hard.

19 Q The second paragraph, "Because Darwin's theory is a
20 theory, it continues to be tested as new evidence is
21 discovered. Theory is not a fact. Gaps in the theory exist
22 for which there is no evidence. A theory is defined as a
23 well-tested explanation that unifies a broad range of
24 observations."

25 Is that accurate?

1 A Yes, all those sentences sound exactly accurate,
2 and the students should understand those.

3 Q "Intelligent design is an explanation of the origin
4 of life that differs from Darwin's view. The reference book
5 *Of Pandas and People* is available for students who might be
6 interested in gaining an understanding of what intelligent
7 design actually involves."

8 Do you have any problem with that paragraph?

9 A That sounds like -- sounds fine as well.

10 Q And finally, "With respect to any theory, students
11 are encouraged to keep an open mind. The school leaves the
12 discussion of the origins of life to individual students and
13 their families. As a standards-driven district, class
14 instruction focuses upon preparing students to achieve
15 proficiency on standard-based assessments."

16 What does that say to you?

17 A That sounds reasonable as well.

18 Q And do you think it's good advice to inform
19 students that with respect to any theory they ought to be
20 encouraged to keep an open mind?

21 A I think it's very good advice to pass on.

22 Q Now, Dr. Alters, who testified in this case,
23 reviewing that same one-minute statement that I read to you,
24 said this: Quote, Now, what this policy is doing is saying
25 there is this other scientific view that belongs, it belongs

1 in the game of science, and it's the one that most students
2 will perceive as God friendly. It has as intelligent
3 designer; evolution doesn't. Now, students are going to be
4 in there discussing out in the playground, discussing in
5 their class, among themselves, or whatever, that the unit
6 that they're now about to hear about, the evolution unit
7 that's now coming up, is the one that's not God friendly,
8 the one scientific theory that doesn't mention God; but this
9 other so-called scientific theory, intelligent design, is
10 God friendly, because there's a possibility that God has
11 this other theory. What a terrible thing to do to kids. I
12 mean, to make them have to think about defending their
13 religion before learning a scientific concept. How
14 ridiculous. This is probably the worst thing I ever heard
15 of in science education."

16 What is your reaction to that opinion?

17 A It's strikes me as, what shall I say, histrionic
18 even. It seems utterly unconnected to the text of the
19 statement that you just read a minute ago.

20 I can't see any connection between what Dr. Alters
21 said and the statement that you read. You know, it makes me
22 suspect that the reaction has more to do with Dr. Alters'
23 conceptions and misunderstandings and other things than it
24 has to do with the statement itself.

25 Q Dr. Padian offered his opinion that this one-minute

1 statement would cause confusion for students and have them
2 wondering such things as what good is prayer and why is
3 there suffering.

4 What is your reaction to those claims?

5 A It's hard to -- it's hard to know what to say to
6 something like that. A couple things is -- again, you know,
7 it strikes me as utterly unconnected to the text of the
8 statement that was read, and I can't imagine where Professor
9 Padian is getting this from.

10 I doubt that it's from his paleontological
11 expertise. And, again, it makes me think that -- that it
12 says more about where he's coming from, more about where --
13 what he's thinking, his frame of mind, than it says about
14 the statement itself.

15 Q Sir, you're aware that a newsletter was sent out by
16 the district that discussed some of the biology curriculum?

17 A Yes.

18 Q I want to ask you some section -- ask you some
19 questions about some sections of this. Here is the first
20 one. "Students are told of the theory of intelligent
21 design, ID. Isn't ID simply religion in disguise? No, the
22 theory of intelligent design involves science versus
23 science, where scientists, looking at the same data, come to
24 different conclusions. The theory does not mention or
25 discuss God, Christianity, or the Bible in any way."

1 Is that accurate?

2 A That's exactly right. It's completely accurate.

3 Q And another one, "What is the theory of evolution?
4 The word 'evolution' has several meanings, and those
5 supporting Darwin's theory of evolution use the confusion in
6 definition to their advantage. Evolution can mean something
7 as simple as change over time, which is not controversial,
8 and is supported by most people. However, evolution in its
9 biological sense means a process whereby life arose from
10 non-living matter and subsequently developed by natural
11 means, namely, natural selection acting on random
12 variations."

13 Is that accurate?

14 A Yeah, and that sounds clear. I might have phrased
15 things differently but, you know, it's been my experience
16 that people confuse the different meanings of evolution and
17 think that because there's such a thing as change over time,
18 that Darwin's theory might not necessarily be correct. So
19 yes, that seems perfectly fine.

20 Q Here's another one. Quote, What is the theory of
21 intelligent design? The theory of intelligent design, ID,
22 is a scientific theory that differs from Darwin's view, and
23 is endorsed by a growing number of credible scientists. ID
24 attempts to explain the complexity of the world by
25 interpreting the scientific data now available to modern

1 biologists. Its principal argument is that certain features
2 of the universe are best explained by an intelligent cause
3 rather than undirected causes such as Darwin's theory of
4 natural selection.

5 That's the first paragraph in the answer. Do you
6 have any problem with that section?

7 A That sounds reasonable.

8 Q And then the second paragraph. "In simple terms,
9 on a molecular level, scientists have discovered a
10 purposeful arrangement of parts which cannot be explained by
11 Darwin's theory. In fact, since the 1950s, advances in
12 molecular biology and chemistry have shown us that living
13 cells, the fundamental units of life processes, cannot be
14 explained by chance."

15 What's your reaction to that section?

16 A Well, I think I would have phrased things somewhat
17 differently, but I think for a newsletter, it's fine. It
18 speaks about the purposeful arrangement of parts, which is
19 exactly right, that's the heart of detecting design. So I
20 think it does a good job at getting across the idea.

21 Q Now, if something is in a newsletter, would that
22 necessarily be something that you would endorse to be part
23 of a science class or in a science text?

24 MR. ROTHSCHILD: Objection. He has no basis to
25 testify about that. He's making a -- he's asking for a

1 statement about whether this is or is not part of the Dover
2 science curriculum.

3 MR. MUISE: I don't believe that had anything to do
4 with what my question was, Your Honor. I was asking him
5 about the phrasing of these, whether they would be phrased
6 similarly if he was going to provide similar explanations in
7 a science class or in a science context, would he perhaps do
8 it differently than he would in a newsletter.

9 THE COURT: Well, he objected to the question as it
10 was framed, because he wouldn't have any basis as an
11 expert -- anybody, I suppose, could give an opinion the way
12 you phrased your question. So I'll sustain the objection,
13 but you might be able to get at it through a different
14 question. You'll have to rephrase.

15 MR. ROTHSCHILD: If the question is, you know, take
16 that same language, is this what you'd tell the student --
17 is this what you'd tell the students, I have no objection to
18 the question.

19 MR. MUISE: That's not my question.

20 THE COURT: Well, he tried.

21 MR. MUISE: I'm sorry?

22 THE COURT: He tried.

23 MR. MUISE: He can ask that one on cross, Your
24 Honor; this is my witness.

25 THE COURT: Mr. Muise has the floor, he'll figure

1 it out.

2 BY MR. MUISE:

3 Q Again, Dr. Behe, that last section that I read to
4 you, I believe you testified that you thought that would be
5 fine for a newsletter, is that correct?

6 A Yes.

7 Q Well, as a teacher of science, if you were going to
8 express something similar to that in a science book or in a
9 science text, would you perhaps word it differently?

10 A Yeah, I would rewrite it more carefully, sure.

11 Q In terms for a newsletter you believe it's
12 sufficient for the lay person?

13 A It, as I said, it gets across that core idea of the
14 purposeful arrangement of parts, which I argued about
15 extensively here. So I -- I think that's the most important
16 point, yes, I think that's good.

17 Q And one more, Dr. Behe. Quote, Are there religious
18 implications to the theory of ID? And here's the answer.
19 Quote, Not any more so than the religious implications of
20 Darwinism. Some have said that before Darwin, quote, we
21 thought the benevolent God had created us. Biology took
22 away our status as made in the image of God, end quote, or,
23 quote, Man is the result of a purposeless process that did
24 not have him in mind, he was not planned, end quote, or,
25 Darwinism made it possible to be an intellectually fulfilled

1 atheist, end quote.

2 Is that question and answer accurate?

3 A Yeah, I probably would rewrite that one too. But
4 it certainly is true that scientific theories oftentimes
5 have what people think of as philosophical and theological
6 implications. Philosophers, theologians all the time draw
7 on scientific theories. I think that a number of the
8 experts in this case have written books that impinge on the
9 philosophical and theological aspects of Darwinism. So
10 that's a perfectly -- perfectly correct statement.

11 Q Dr. Behe, should school districts such as the Dover
12 Area School District make students aware of intelligent
13 design as a scientific theory during their class instruction
14 of Darwin's theory of evolution?

15 A I'm sorry, I missed the question.

16 Q I'm sorry. Should school districts such as the
17 Dover Area School District make students aware of
18 intelligent design as a scientific theory during their class
19 instruction of Darwin's theory of evolution?

20 A Yes, I think that's a good idea.

21 Q And why?

22 A Because in order for a student to properly
23 appreciate the difference between fact and theory, one needs
24 at least a couple of different theoretical perspectives to
25 view facts from. If a student is only given one theoretical

1 framework in which to view a theory, then the danger is that
2 the theory will blend into the facts and students will not
3 be able to distinguish the two. Indeed, grown up scientists
4 and philosophers oftentimes have the difficulty.

5 Additionally, the ability to view a set of facts
6 from a different framework allows a student to judge whether
7 some difficulties for one theory are either greater or
8 lesser. It's been my experience that somebody who is
9 convinced that a theory is true will view difficulties as
10 minor annoyances, or maybe ignore them altogether. But
11 somebody who is not convinced of that theoretical framework
12 might see those difficulties as much more telling and
13 weighty than the first person.

14 And the third reason is that the strength of
15 evidence supporting a theory, or even whether facts brought
16 to bear have anything to do with a theory, oftentimes
17 depends on a person's theoretical perspective that a person
18 brings to the table in the first place.

19 Sometimes a person who has a theoretical
20 perspective will view data that is newly obtained as support
21 for the theory, whereas somebody outside of that will think
22 of it as either irrelevant or not -- or not supporting the
23 theory as strongly as the first person.

24 So I think it's very useful for a student to view
25 data from a number of different perspectives. And so I

1 think it would be good for that purpose.

2 Q Does Dover's policy at issue in this case support
3 good science pedagogy?

4 A Yes, I think so.

5 MR. MUISE: Turn over the witness for cross, Your
6 Honor.

7 THE COURT: All right. Thank you, Mr. Muise. And
8 Mr. Rothchild, you may commence cross examination.

9 MR. ROTHSCHILD: If I could have one moment to get
10 organized, Your Honor?

11 THE COURT: Certainly.

12 (Pause.)

13 CROSS EXAMINATION

14 BY MR. ROTHSCHILD:

15 Q Good afternoon.

16 A Good afternoon, Mr. Rothchild.

17 Q How are you?

18 A Fine, thanks.

19 Q Professor Behe, do you have a copy of your
20 deposition and expert report up there with you?

21 A No, I don't.

22 Q And I'm also going to give you a copy of what we've
23 marked as exhibit 718, which is your reply to critics which
24 we'll be referring to throughout the afternoon.

25 A Okay.

1 MR. ROTHSCHILD: May I approach, Your Honor?

2 THE COURT: You may.

3 BY MR. ROTHSCHILD:

4 Q And I saw that you had a copy of *Pandas*, but do you
5 have a copy of *Darwin's Black Box* with you?

6 A No, I don't.

7 Q I am surprised you're ever without one.

8 A Hard copy.

9 Q I have the dog-eared paperback.

10 Professor Behe, there are many many peer-reviewed
11 articles regarding the Big Bang theory, correct?

12 A Yes.

13 Q You commented on the newsletter, and I'm going to
14 ask Matt to pull that up on our screen, it's exhibit 127.
15 And if you would turn to the second page, which is where I
16 would like you to be. And if you could highlight the first
17 full paragraph under, What is the Theory of Intelligent
18 Design. And it says in the last sentence, "Its principal
19 argument is that certain features of the universe are best
20 explained by intelligent cause rather than undirected
21 causes, such as Darwin's theory of natural selection." Is
22 that right?

23 A Yes.

24 Q But you told us earlier today that intelligent
25 design has nothing to do with cause, correct?

1 A No, that's not -- that's not correct. In this
2 sense I mean that it began in -- at some point intelligence
3 was involved in the production of the designed feature.

4 Q Intelligence was the cause?

5 A Intelligence is not the -- well, in order to
6 produce something, one needs a number of different -- of
7 different events. One needs not only intelligence, but then
8 one needs a way to carry it out. For example, similarly,
9 say with the Big Bang, we can see that the universe began in
10 a large explosion, but we do not have a cause for it other
11 than that.

12 Q But here Dover is telling its community,
13 intelligent design is about intelligent causes, correct?

14 A Yes.

15 Q Professor Behe, could you turn back to page 99 of
16 *Pandas*.

17 MR. ROTHSCHILD: And Matt, if you could highlight
18 the text on 99 to 100 that we're all so familiar with.

19 BY MR. ROTHSCHILD:

20 Q And that's the text that says, "Intelligent design
21 means that various forms of life began abruptly through an
22 intelligent agency." Correct?

23 A Yes.

24 Q It talks about the life beginning abruptly, not
25 just appearing abruptly, correct?

1 A Well, that's certainly the word it used, but we can
2 ask, how do we know it began abruptly? The only way that we
3 know it began abruptly is through the fossil record.

4 Q But beginning is different than appearances in the
5 fossil record, correct, Professor Behe?

6 A I don't take it to mean that way, no.

7 Q Now, you said you wouldn't have described
8 intelligent design this way, correct?

9 A Yes.

10 Q But that's how it's being described to the students
11 at Dover who go to look at the *Pandas* textbook.

12 A Well, that's one of the places, yes.

13 Q And would you agree with me that if one substituted
14 the word "creation" for "intelligent design" there, Creation
15 means that various forms of life began abruptly through an
16 intelligent agency with their distinctive features already
17 intact: Fish with fins and scales, birds with feathers,
18 beaks and wings, the statement would be equally apt?

19 A Apt?

20 Q Would make just as much sense as the sentence
21 that's up there?

22 A Well, I think the sentence as it is drafted is
23 somewhat problematic, as I said in my direct testimony, so I
24 would not say that either one was apt.

25 Q That's not a good definition of creation or

1 creationism?

2 A I don't think so, no.

3 Q Would it be a good definition of special creation,
4 Professor Behe?

5 A I don't think so either.

6 Q You don't have a degree in education, do you?

7 A No, I don't. I have a degree in biochemistry.

8 Q And you have not taught at the primary or secondary
9 level?

10 A No, I haven't.

11 Q And other than *Pandas*, you have not prepared a
12 textbook for high school students other than *Pandas*?

13 A That's correct.

14 Q Before we leave *Pandas*, you said this was not a
15 statement you would have signed off on, correct?

16 A Yes.

17 Q But you actually were a critical reviewer of
18 *Pandas*, correct; that's what it says in the acknowledgments
19 page of the book?

20 A That's what it lists there, but that does not mean
21 that I critically reviewed the whole book and commented on
22 it in detail, yes.

23 Q What did you review and comment on, Professor Behe?

24 A I reviewed the literature concerning blood
25 clotting, and worked with the editor on the section that

1 became the blood clotting system. So I was principally
2 responsible for that section.

3 Q So you were reviewing your own work?

4 A I was helping review or helping edit or helping
5 write the section on blood clotting.

6 Q Which was your own contribution?

7 A That's -- yes, that's correct.

8 Q That's not typically how the term "critical review"
9 is used; would you agree with that?

10 A Yeah, that's correct.

11 Q So when the publishers of *Pandas* indicate that you
12 were a critical reviewer of *Pandas*, that's somewhat
13 misleading, isn't it?

14 MR. MUISE: Objection. Assumes that he understands
15 what their purpose for listing him as a critical reviewer.

16 THE COURT: He just answered the question that
17 that's not a critical review, so the objection is overruled.
18 You can ask that question.

19 BY MR. ROTHSCHILD:

20 Q Advertising you as a critical reviewer of this book
21 is misleading to the students, isn't it?

22 MR. MUISE: Objection, that's argumentative.

23 THE COURT: It's cross examination. It's
24 appropriate cross. Overruled.

25 THE WITNESS: I'm sorry, could you repeat the

1 question?

2 BY MR. ROTHSCHILD:

3 Q Telling the readers of *Pandas* that you were a
4 critical reviewer of that book is misleading, isn't it?

5 A I disagree. As I said, that's not the typical way
6 that the term "critical reviewer" is used, but nonetheless,
7 in my opinion I don't think it is misleading.

8 Q Professor Behe, are you aware that a new edition of
9 *Pandas* is being developed called, *The Design of Life*?

10 A Yes.

11 Q Are you an author of that book?

12 A I am not an author of that book.

13 Q Are you aware that William Dembski is one of the
14 authors of that book?

15 A Yes, I've heard such, yes.

16 MR. ROTHSCHILD: Matt, could you pull up exhibit
17 621. And that's the expert report of William Dembski that
18 was submitted in this case before he withdrew as an expert.
19 Could you go to page ten, and highlight the first paragraph
20 *Of Pandas and People*.

21 BY MR. ROTHSCHILD:

22 Q And you see there he's discussing the new version
23 *Of Pandas and People, The Design of Life*?

24 A I'm sorry?

25 Q Do you understand him to be describing his work on

1 a new book called, *The Design of Life*?

2 A Give me a chance to read this please.

3 Q Absolutely.

4 (Pause.)

5 A Yes.

6 Q And Mr. Dembski, who is the author of *Design of*
7 *Life*, described you as a co-author of the book, correct?

8 A That's what he does, yes.

9 Q That's false, isn't it?

10 A Again, I am not an author of the book, but William
11 Dembski, several years ago, asked if I would contribute.
12 And I explained to him that I did not have the time to do
13 so. And he says well, perhaps, you know, in the future he
14 could solicit material from me and then I would be one of
15 the authors of the book. So, that's correct.

16 Q So that makes you a co-author right now, Professor
17 Behe?

18 A I certainly would not have listed myself now as a
19 co-author, however, I think that he was anticipating my
20 future participation in the project.

21 Q So that's a true statement, Professor Behe, that
22 you're a co-author?

23 A It is not now a true statement but it might be in
24 the future.

25 Q Okay.

1 MR. ROTHSCHILD: Matt, could you pull up the
2 deposition of Jon Buell.

3 BY MR. ROTHSCHILD:

4 Q Professor Behe, you know who Jon Buell is, correct?

5 A Yes, I do.

6 Q He's the president of Foundation for Thought and
7 Ethics?

8 A Yes, that's right.

9 Q And they were the publisher of *Pandas* when you
10 participated?

11 A That's correct.

12 Q And you're familiar with who the Foundation for
13 Thought and Ethics is?

14 A Yes.

15 Q And you're familiar with their mission?

16 A I can't say that I'm familiar with the mission. I
17 know Jon Buell, I've spoken with him a number of times and
18 met with him and participated in activities with him, yes.

19 Q And this is a deposition that was taken in this
20 case of Mr. Buell on July 8, 2005.

21 MR. ROTHSCHILD: Matt, could you go to page 129,
22 and highlight lines 11 to 13.

23 Make it easy on you, may I approach the witness?

24 THE COURT: You may.

25

1 BY MR. ROTHSCHILD:

2 Q If you could turn to pages 129 -- to page 129 of
3 the deposition.

4 A Yes.

5 Q And look at line 11. And Mr. Buell is asked, "Who
6 are the authors of *Design of Life* as you understand it?"

7 And can you read his answer?

8 A He says, "Kenyon, Davis, Dembski, Behe and Wells,
9 Jonathan Wells."

10 Q So Mr. Buell thinks you're an author too?

11 A That's correct. I think he's working under the
12 same impression as Bill, that he wanted to get together
13 people who were most involved with the intelligent design
14 movement to have a book which would be authored by them.
15 And again, I told them that right now I was too busy. I
16 told them that a couple years ago. But I said that perhaps
17 in the future I could be involved.

18 Q Mr. Behe, this statement is false, isn't it?

19 A I'm sorry?

20 Q The statement is false, isn't it?

21 A What statement is that?

22 Q The statement that you're an author, and
23 Mr. Dembski's statement is false too, isn't it?

24 A That's not what it says on the screen, sir. It
25 says, "Who are the authors of *Design of Life* as you

1 understand it?" And the way I read that is that he's seeing
2 into the future and seeing when this actually will be
3 published and anticipating that I will participate in the
4 publication of the book at that point.

5 Q Seeing into the future is one of the powers of the
6 intelligent design movement?

7 A I think --

8 MR. MUISE: Objection, argumentative.

9 MR. ROTHSCHILD: I'll withdraw it, Your Honor.

10 BY MR. ROTHSCHILD:

11 Q Towards the end of your testimony today you said
12 that it's good to teach students about intelligent design so
13 that they can look at the facts from several theoretical
14 perspectives, correct?

15 A Yes, that's right.

16 Q Now, in the case of germ theory, you're not aware
17 that students are taught some other theoretical perspective
18 so that they can understand the facts and not confuse germ
19 theory with germ fact, correct?

20 A That's correct.

21 Q And not -- the same would be true for atomic
22 theory, correct?

23 A That's correct.

24 Q The theory of plate tectonics?

25 A But evolutionary theory is in many ways very much

1 more involved than some of the other ones that you
2 mentioned. In particular, as I tried to make clear in my
3 testimony, it has a number of parts which are -- which are
4 together, under an aggregate, considered Darwin's theory of
5 evolution. But again, as I tried to make clear in my
6 testimony, not all of them are as well supported as other
7 parts of the theory.

8 So I think in this particular case, yes, it would
9 make a great deal of sense for students to view the data
10 from a number of theoretical perspectives.

11 Q You're not an expert in germ theory, are you?

12 A No.

13 Q Or atomic theory?

14 A I studied it but I wouldn't call myself an expert.

15 Q Take germ theory, you don't really know the nature
16 of the controversies around germ theory, do you?

17 A I think the nature of the controversies around germ
18 theory are pretty much past. I think it was controversial
19 in the 19th Century, but I don't think there is a
20 controversy in it in the present time.

21 Q Okay. And you don't really know if a germ theory
22 or atomic theory, where there are gaps or unexplained
23 phenomena?

24 A I don't, but I do know evolutionary theory, and I
25 know there are gaps and unexplained problems in that.

1 Q Probably true of all scientific theories, right,
2 Professor Behe?

3 A It might be true of -- yes, it's certainly true of
4 many scientific theories.

5 Q Now, you claim that intelligent design is a
6 scientific theory.

7 A Yes.

8 Q But when you call it a scientific theory, you're
9 not defining that term the same way that the National
10 Academy of Sciences does.

11 A Yes, that's correct.

12 Q You don't always see eye to eye with the National
13 Academy?

14 A Sometimes not.

15 Q And the definition by the National Academy, as I
16 think you testified is, a well-substantiated explanation of
17 some aspect of the natural world that can incorporate facts,
18 laws, inferences and tested hypotheses, correct?

19 A Yes.

20 Q Using that definition, you agree intelligent design
21 is not a scientific theory, correct?

22 A Well, as I think I made clear in my deposition, I'm
23 a little bit of two minds of that. I, in fact, do think
24 that intelligent design is well substantiated for some of
25 the reasons that I made clear during my testimony. But

1 again, when you say well substantiated, sometimes a person
2 would think that there must be a large number of people then
3 who would agree with that. And so, frankly, I, like I said,
4 I am of two minds of that.

5 Q And actually you said at your deposition, I don't
6 think intelligent design falls under this definition.
7 Correct?

8 A Yeah, and that's after I said -- if I may see where
9 in my deposition that is? I'm sorry.

10 Q It's on pages 134 and 135.

11 A And where are you -- where are you reading from?

12 Q I'll be happy to read the question and answer to
13 you. I asked you whether intelligent design -- I asked
14 actually on the top of 133, I asked you whether intelligent
15 design qualifies as a scientific theory using the National
16 Academy of Sciences' definition.

17 A What line is that, I'm sorry?

18 Q That's 133, line 18.

19 A Is that going -- question beginning, "Going back to
20 the National Academy of Science?"

21 Q Yes. And you first said, "I'm going to say that I
22 would argue that in fact it is." And that's 134, line ten.

23 A Yes.

24 Q Okay. And I said, "Intelligent design does meet
25 that?" And you said, "It's well substantiated, yes." And I

1 said, "Let's be clear here, I'm asking -- looking at the
2 definition of a scientific theory in its entirety, is it
3 your position that intelligent design is a scientific
4 theory?" And you said, going down to line 23, "I think one
5 can argue these a variety of ways. For purposes of an
6 answer to the -- relatively brief answer to the question, I
7 will say that I don't think it falls under this." And I
8 asked you, "What about this definition; what is it in this
9 definition that ID can't satisfy to be called a scientific
10 theory under these terms?" And you answer, "Well, implicit
11 in this definition it seems to me that there would be an
12 agreed upon way to decide something was well substantiated.
13 And although I do think that intelligent design is well
14 substantiated, I think there's not -- I can't point to
15 external -- an external community that would agree that it
16 was well substantiated."

17 A Yes.

18 Q So for those reasons you said it's not -- doesn't
19 meet the National Academy of Sciences' definition.

20 A I think this text makes clear what I just said a
21 minute or two ago, that I'm of several minds on this
22 question. I started off saying one thing and changing my
23 mind and then I explicitly said, "I think one can argue
24 these things a variety of ways. For purposes of a
25 relatively brief answer to the question, I'll say this."

1 But I think if I were going to give a more complete answer,
2 I would go into a lot more issues about this.

3 So I disagree that that's what I said -- or that's
4 what I intended to say.

5 Q In any event, in your expert report, and in your
6 testimony over the last two days, you used a looser
7 definition of "theory," correct?

8 A I think I used a broader definition, which is more
9 reflective of how the word is actually used in the
10 scientific community.

11 Q But the way you define scientific theory, you said
12 it's just based on your own experience; it's not a
13 dictionary definition, it's not one issued by a scientific
14 organization.

15 A It is based on my experience of how the word is
16 used in the scientific community.

17 Q And as you said, your definition is a lot broader
18 than the NAS definition?

19 A That's right, intentionally broader to encompass
20 the way that the word is used in the scientific community.

21 Q Sweeps in a lot more propositions.

22 A It recognizes that the word is used a lot more
23 broadly than the National Academy of Sciences defined it.

24 Q In fact, your definition of scientific theory is
25 synonymous with hypothesis, correct?

1 A Partly -- it can be synonymous with hypothesis, it
2 can also include the National Academy's definition. But in
3 fact, the scientific community uses the word "theory" in
4 many times as synonymous with the word "hypothesis," other
5 times it uses the word as a synonym for the definition
6 reached by the National Academy, and at other times it uses
7 it in other ways.

8 Q But the way you are using it is synonymous with the
9 definition of hypothesis?

10 A No, I would disagree. It can be used to cover
11 hypotheses, but it can also include ideas that are in fact
12 well substantiated and so on. So while it does include
13 ideas that are synonymous or in fact are hypotheses, it also
14 includes stronger senses of that term.

15 Q And using your definition, intelligent design is a
16 scientific theory, correct?

17 A Yes.

18 Q Under that same definition astrology is a
19 scientific theory under your definition, correct?

20 A Under my definition, a scientific theory is a
21 proposed explanation which focuses or points to physical,
22 observable data and logical inferences. There are many
23 things throughout the history of science which we now think
24 to be incorrect which nonetheless would fit that -- which
25 would fit that definition. Yes, astrology is in fact one,

1 and so is the ether theory of the propagation of light, and
2 many other -- many other theories as well.

3 Q The ether theory of light has been discarded,
4 correct?

5 A That is correct.

6 Q But you are clear, under your definition, the
7 definition that sweeps in intelligent design, astrology is
8 also a scientific theory, correct?

9 A Yes, that's correct. And let me explain under my
10 definition of the word "theory," it is -- a sense of the
11 word "theory" does not include the theory being true, it
12 means a proposition based on physical evidence to explain
13 some facts by logical inferences. There have been many
14 theories throughout the history of science which looked good
15 at the time which further progress has shown to be
16 incorrect. Nonetheless, we can't go back and say that
17 because they were incorrect they were not theories. So many
18 many things that we now realized to be incorrect, incorrect
19 theories, are nonetheless theories.

20 Q Has there ever been a time when astrology has been
21 accepted as a correct or valid scientific theory, Professor
22 Behe?

23 A Well, I am not a historian of science. And
24 certainly nobody -- well, not nobody, but certainly the
25 educated community has not accepted astrology as a science

1 for a long long time. But if you go back, you know, Middle
2 Ages and before that, when people were struggling to
3 describe the natural world, some people might indeed think
4 that it is not a priori -- a priori ruled out that what
5 we -- that motions in the earth could affect things on the
6 earth, or motions in the sky could affect things on the
7 earth.

8 Q And just to be clear, why don't we pull up the
9 definition of astrology from Merriam-Webster.

10 MR. ROTHSCHILD: If you would highlight that.
11 BY MR. ROTHSCHILD:

12 Q And archaically it was astronomy; right, that's
13 what it says there?

14 A Yes.

15 Q And now the term is used, "The divination of the
16 supposed influences of the stars and planets on human
17 affairs and terrestrial events by their positions and
18 aspects."

19 That's the scientific theory of astrology?

20 A That's what it says right there, but let me direct
21 your attention to the archaic definition, because the
22 archaic definition is the one which was in effect when
23 astrology was actually thought to perhaps describe real
24 events, at least by the educated community.

25 Astrology -- I think astronomy began in, and things

1 like astrology, and the history of science is replete with
2 ideas that we now think to be wrong headed, nonetheless
3 giving way to better ways or more accurate ways of
4 describing the world.

5 And simply because an idea is old, and simply
6 because in our time we see it to be foolish, does not mean
7 when it was being discussed as a live possibility, that it
8 was not actually a real scientific theory.

9 Q I didn't take your deposition in the 1500s,
10 correct?

11 A I'm sorry?

12 Q I did not take your deposition in the 1500s,
13 correct?

14 A It seems like that.

15 Q Okay. It seems like that since we started
16 yesterday. But could you turn to page 132 of your
17 deposition?

18 A Yes.

19 Q And if you could turn to the bottom of the page
20 132, to line 23.

21 A I'm sorry, could you repeat that?

22 Q Page 132, line 23.

23 A Yes.

24 Q And I asked you, "Is astrology a theory under that
25 definition?" And you answered, "Is astrology? It could be,

1 yes." Right?

2 A That's correct.

3 Q Not, it used to be, right?

4 A Well, that's what I was thinking. I was thinking
5 of astrology when it was first proposed. I'm not thinking
6 of tarot cards and little mind readers and so on that you
7 might see along the highway. I was thinking of it in its
8 historical sense.

9 Q I couldn't be a mind reader either.

10 A I'm sorry?

11 Q I couldn't be a mind reader either, correct?

12 A Yes, yes, but I'm sure it would be useful.

13 Q It would make this exchange go much more quickly.

14 THE COURT: You'd have to include me, though.

15 BY MR. ROTHSCHILD:

16 Q Now, you gave examples of some theories that were
17 discarded?

18 A Yes.

19 Q One was the ether theory?

20 A Yes.

21 Q And the other was the theory of geocentrism, right?

22 A That's correct.

23 Q And what you said yesterday was that there was some
24 pretty compelling evidence for observers of that time that
25 that was good theory, right?

1 A Yes, sure.

2 Q Look up in the sky, and it looked like the sun was
3 going around us, correct?

4 A That's right.

5 Q And we know now that those appearances were
6 deceiving, right?

7 A That's correct.

8 Q So what we thought we knew from just looking at the
9 sky, that's not in fact what was happening, right?

10 A That's right.

11 Q So the theory was discarded?

12 A That's correct.

13 Q And intelligent design, also based on appearance,
14 isn't it, Professor Behe?

15 A All sciences is based on appearances. That's --
16 what else can one go with except on appearances?

17 Appearances can be interpreted from a number of different
18 frameworks, and you have to worry that the one that you're
19 interpreting it from is going to turn out to be correct.

20 But in fact since science is based on observation, now
21 that's just another word for appearance. So intelligent
22 design is science, and so intelligent design is based on
23 observation; that is appearance.

24 Big Bang theory is based on observation, based on
25 appearance, so yes, it is.

1 Q The whole positive argument for intelligent design
2 as you've described it, Professor Behe, is look at this
3 system, look at these parts, they appear designed, correct?

4 A Well, I think I filled that out a little bit more.
5 I said that intelligent design is perceived as the
6 purposeful arrangement of parts, yes. So when we not only
7 see different parts, but we also see that they are ordered
8 to perform some function, yes, that is how we perceived
9 design.

10 Q Now, getting back to *Pandas*. You've said this is a
11 good book for students, correct?

12 A Yes.

13 Q And we know you wrote part of it, correct?

14 A Yes.

15 Q And you certainly vouch for that part of it?

16 A I do.

17 Q And we've seen other parts of it that you're not as
18 happy with, correct?

19 A Right.

20 Q Now, one thing you can't vouch for, however, is
21 whether *Pandas* represents the fossil record correctly, can
22 you?

23 A No, I can't, I'm not a paleontologist.

24 Q So, for example, when Dr. Padian testified on
25 Friday that *Pandas* grossly misrepresents scientific

1 knowledge on many issues including the evolution of birds,
2 amphibians and various mammals in the fossil record about
3 those animals, you have no way of responding to that,
4 correct?

5 A That's outside my expertise.

6 Q Now, during the course of your testimony you
7 referred to the writings of a number of scientists to make
8 your case for intelligent design, correct?

9 A Yes.

10 Q You referred to Kirshner and Gearhart's article --
11 or book, I'm sorry?

12 A That was not to make the case for intelligent
13 design, that was to explain how scientific books fit into
14 the scientific community.

15 Q Very well. Dr. DeRosier's article, correct?

16 A Yes.

17 Q Bruce Albert's article?

18 A That's correct.

19 Q Richard Dawkins' book, *The Blind Watchmaker*?

20 A That's correct.

21 Q Francis Crick, we heard a lot about him?

22 A Yes.

23 Q Jerry Coyne?

24 A I'm not sure. Did I refer to him as support for
25 intelligent design?

1 Q You cited to his *New Republic* article on the issue
2 of natural selection.

3 A Yes. That wasn't quite the same thing. I was just
4 trying to make the point that there is only one mechanism
5 that is proposed to be able to mimic design.

6 Q Franklin Harold, you cited him for support?

7 A I cited him to show that in fact Darwinian
8 explanations have not yet been advanced for the complex
9 molecular systems that have been discovered by science.

10 Q That's part of the argument for intelligent design,
11 isn't it?

12 A That's a part of the argument to show that there is
13 no other plausible explanation for what we perceive to be as
14 design.

15 Q Which is part of the argument for intelligent
16 design, correct?

17 A Yes.

18 Q And there actually was an article by Jerry Coyne in
19 *Nature* you relied on?

20 A Yes, it was a review of my book; is that what
21 you're thinking of?

22 Q That's right.

23 A Okay, yes.

24 Q And Andrew Pomiankowski?

25 A Yes.

1 Q Now, none of these scientists that you referred to
2 advocate for intelligent design in those articles or books,
3 do they?

4 A No, they don't.

5 Q Or in any other forum, correct?

6 A That's correct.

7 Q In fact, many of them are vocal opponents of
8 intelligent design?

9 A Yes, indeed, just like, say, John Maddox is an
10 opponent of the Big Bang theory and, for example, Walter
11 Nernst was an opponent of the Big Bang theory and a vocal
12 proponent of the infinity of the universe; yes, that's
13 correct.

14 Q Professor Behe, I can't control your answers, but
15 we're in biology class here, not physics, so let's talk
16 about intelligent design.

17 A Okay, I think these are relevant to an
18 understanding of what I'm trying to do.

19 Q So in any event, all of the scientists that I named
20 that you referred to during the course of your testimony
21 over the past two days are certainly not supporters of
22 intelligent design, most of them are pretty active opponents
23 of it, correct?

24 A That's correct.

25 Q And it's not just Ken Miller?

1 A No, there are many scientists, yes.

2 Q There certainly are, in fact, almost all the major
3 scientific organizations that have taken a position on
4 intelligent design have opposed it, isn't that right?

5 A Yes, a lot of scientific organizations have issued
6 statements opposing intelligent design.

7 Q And, you know, you discussed yesterday that you've
8 attended many seminars, made presentations to various
9 scientific departments and the like, correct?

10 A That's correct.

11 Q So over the past nine, ten years since *Darwin's*
12 *Black Box*, you've certainly gotten a hearing in the
13 scientific community, correct?

14 A I -- I'm sorry, what do you mean by "hearing?"

15 Q Scientists have heard you out, heard your
16 arguments, correct?

17 A A number of scientists have, certainly. I've
18 presented perhaps maybe 20, 30 seminars. I would present
19 seminars pretty much to whoever would invite me. But even
20 20 or 30 seminars times 100 people per seminar or so on
21 average, that's still a fairly small fraction of the
22 scientific community.

23 Q Not nearly as big as, for example, the scientific
24 societies you belong to.

25 A That's correct.

1 Q And you actually have also made numerous
2 presentations on intelligent design in your book to churches
3 and religious groups, correct?

4 A Yes, I try to speak to whoever invites me.

5 Q You mentioned that there have been many scientific
6 organizations who have taken a position, one of those is the
7 National Academy of Sciences, correct?

8 A Yes, that's correct.

9 Q And you testified yesterday that's the most
10 prestigious scientific organization in the United States?

11 A That's correct.

12 MR. ROTHSCHILD: Matt, could you pull up exhibit
13 192.

14 BY MR. ROTHSCHILD:

15 Q Go to page 20. That's the publication, *Science and*
16 *Creationism, A View from the National Academy of Sciences.*

17 A That's correct.

18 MR. ROTHSCHILD: And if you could go to page 25,
19 please, and highlight the third paragraph, first sentence.

20 BY MR. ROTHSCHILD:

21 Q And it says, "Creationism, intelligent design, and
22 other claims of supernatural intervention in the origin of
23 life or of species are not science because they are not
24 testable by the methods of science." That's the National
25 Academy's position?

1 A That's correct, that's exactly the position that I
2 argued against in my article in *Biology and Philosophy*. I
3 disagree with it, as a matter of fact I think it's the
4 inverse of what is true. I think that in fact Darwinian
5 theory is very difficult to falsify, but that intelligent
6 design is easily falsify -- or easy to falsify.

7 Q And I do have some more questions to ask you about
8 that, but before we do that let's go to page 21 of this
9 exhibit. And if you could go to the bottom paragraph, first
10 sentence. It says, "Molecular evolutionary data counter a
11 recent proposition called 'intelligent design theory.'
12 Proponents of this idea argue that structural complexity is
13 proof of the direct hand of God in specially creating
14 organisms as they are today."

15 More rebuttal to intelligent design, correct?

16 A I -- I think that particular sentence is just a
17 wonderful illustration of the massive misunderstanding and
18 mischaracterization of intelligent design. They -- they
19 have this sentence, "Proponents of this idea argue that
20 structural complexity is proof of the direct hand of God in
21 specially creating organisms as they are today." I advocate
22 none of those ideas. None of those ideas are found in my
23 books. None of those ideas are found in my writings. I
24 take this to be a political statement unsupported by any
25 references.

1 If you look in that publication, you do not find
2 any references to anybody in the intelligent design
3 movement. In a number of sections here they certainly seem
4 to have my ideas in mind, and they do not reference my book,
5 they do not quote my book. In their list of readings for
6 teachers, for teachers to understand this controversy, they
7 do not even list a single book by an intelligent design
8 proponent. How is a teacher supposed to understand this if
9 they can't even read, you know, proponents of a theory
10 making their own case in their own way, and they have to
11 rely on mischaracterizations?

12 Q So you don't think that accurately characterizes
13 your work?

14 A No.

15 Q You're not -- you're not all of intelligent design,
16 are you?

17 A That's correct, yes.

18 Q Characterize some other intelligent design
19 proponents' writings?

20 A I disagree, no.

21 MR. ROTHSCHILD: And, Matt, if you could go to page
22 28 of the report, and highlight the paragraph, "Don't many
23 famous scientists reject evolution."

24 BY MR. ROTHSCHILD:

25 Q It says there, "The scientific consensus around

1 evolution is overwhelming." And then it says, "Those
2 opposed to the teaching of evolution sometimes use
3 quotations from prominent scientists out of context to claim
4 that scientists do not support evolution."

5 Do you agree that that's a problem, Professor Behe?

6 A Well, I have a couple things to say about that,
7 those sentences that you just read. First of all, this is
8 another wonderful illustration of the confusion of the
9 different senses of the word "evolution."

10 "The scientific consensus around evolution is
11 overwhelming." What is evolution? Is it Darwin's mechanism
12 of random mutation and natural selection? Do they cite any
13 writings by, say, Stuart Kauffman or the complexity
14 theorists who object to that? I don't see anything there.

15 This is really -- well, let me just go on to the
16 next statement.

17 And it's clear, I think, that many people have
18 written on the question of evolution for it and against it.
19 And if you look at those broad writings, I'm sure you'll
20 find things that might take quotes out of context. But
21 reading this here right now, the phrase that comes to mind
22 to me is the pot calling the kettle black. We just looked
23 at a quotation from that same book in which the National
24 Academy characterized intelligent design in a way that I
25 would consider utterly misleading.

1 Q Mischaracterizes you?

2 A It mischaracterizes intelligent design and
3 certainly me and, like I said -- I hope I'm not being, you
4 know, self centered here, but I think they had me in mind in
5 a couple of these sections.

6 And they don't even list a reference. You know,
7 talk about scholarly malfeasance or some such thing, they
8 don't even reference -- and even these quotations, where are
9 the quotations? Suppose a teacher wanted to show her
10 students an example of these quotations. Where would she
11 find them? The National Academy doesn't say; it just
12 asserts. This is one long assertion.

13 Q Why don't we go onto the next long assertion from
14 the American Academy of Scientists -- American Association
15 of Scientists. And you're familiar with this resolution?

16 A Yes, I've seen it.

17 Q Okay. And this is from the largest scientific
18 organization in the United States, correct?

19 A That is correct, yes.

20 Q And there goes the whole outline, we can stop now.

21 And that statement also condemns the teaching of
22 intelligent design, doesn't it?

23 A I can't read it. Could you blow up the section?

24 MR. ROTHSCHILD: Could you highlight the whereas
25 clauses?

1 THE WITNESS: I'm sorry, could you blow up the next
2 paragraph or the next two paragraphs? Thank you.

3 BY MR. ROTHSCHILD:

4 Q And in the second whereas clause it says, "The ID
5 movement has failed to offer credible scientific evidence to
6 support their claim that ID undermines the current
7 scientifically accepted theory of evolution." And "The ID
8 movement has not proposed a scientific means of testing its
9 claims. Therefore be it resolved, that the lack of
10 scientific warrant for so-called 'intelligent design theory'
11 makes it improper to include as a part of science
12 education."

13 That's the association's position, correct?

14 A That's what it says. And if I might comment, this
15 is a political document. What scientific paper do you know
16 of that says whereas, whereas, whereas, therefore be it
17 resolved? This is a political document. There are no
18 citations here. There's no marshaling of evidence. As I've
19 tried to show in my testimony yesterday and today, if you
20 actually look at these things, we have marshaled evidence,
21 we have proposed means by way our claims can be tested.

22 Like I said in my testimony earlier, not every
23 statement by a scientist is a scientific statement. And
24 that goes also for scientific organizations, not every
25 statement issued by a scientific organization, even on

1 science, is a scientific statement.

2 This is not supported by evidence. This is not
3 worth one paper in the literature. This is a political
4 document.

5 Q In any event, in the ten or 15 or 20 years, or if
6 we go to Paley more than 200 years, intelligent design has
7 failed to make its case to the scientific community,
8 correct?

9 A I disagree. You're going into very, very big
10 problems in the history of science, and one can't settle
11 those in one-sentence answers or one-sentence questions. In
12 the time of Paley, which you referred back to, a lot of
13 people thought there was evidence for intelligent design,
14 one of them was the young Charles Darwin, who remarked a
15 number of times about his enjoyment of Paley's book. Since
16 Darwin's theory was proposed as an explanation for apparent
17 design, many people in the scientific community changed
18 their minds and said, well, perhaps we have an explanation
19 for this strong appearance of design. But science marches
20 on and we have new data these days. And it's -- and
21 observing the new data, we can ask again, is Darwin's
22 explanation, does it continue to be a good explanation for
23 this. And I think we can -- we can again reopen this
24 question and ask -- ask whether -- ask whether it's a good
25 explanation.

1 Q Ask the question, but you haven't convinced the
2 contemporary science community that your idea has any merit,
3 correct?

4 A If you look at these political statements issued by
5 the American Association for the Advancement of Science, if
6 you look at such statements in booklets issued by the
7 National Academy, they are certainly very hostile to the
8 idea of intelligent design. But it's been my experience
9 that a number of people are interested in the idea.
10 Nonetheless, it's the nature of bureaucracy, I think, to
11 issue statements like this. So I do not consider these
12 representative of the scientific community.

13 Q You're not aware of any major scientific
14 organization that has endorsed the science of intelligent
15 design or the teaching of intelligent design, are you?

16 A I'm unaware of any major scientific organization
17 that goes into the business of endorsing scientific
18 theories. When they get stirred up apparently they will
19 oppose something. But, you know, no other scientific
20 theory, you know, after a while is put on a list of the
21 approved -- of approved sciences by any scientific
22 organization that I'm aware of.

23 Q In fact, this isn't just a big scientific
24 organization's bureaucracy that's taken this position, your
25 own university department has taken a position about

1 intelligent design, hasn't it?

2 A Yes, they certainly have.

3 MR. ROTHSCHILD: If you could pull up exhibit 742,
4 Matt, and if you could highlight it.

5 BY MR. ROTHSCHILD:

6 Q This is a statement that was issued by the Lehigh
7 Department of Biological Sciences?

8 A Yes, it is.

9 Q And what it says is, "The faculty in the Department
10 of Biological Sciences is committed to the highest standards
11 of scientific integrity and academic function. This
12 commitment carries with it unwavering support for academic
13 freedom and the free exchange of ideas. It also demands the
14 utmost respect for the scientific method, integrity in the
15 conduct of research, and the recognition that the validity
16 of any scientific model comes only as a result of rational
17 hypothesis testing, sound experimentation, and findings that
18 can be replicated by others.

19 "The department faculty, then, are unequivocal in
20 their support of evolutionary theory, that has its roots in
21 the seminal work of Charles Darwin and has been supported by
22 findings accumulated over 140 years. The sole dissenter
23 from this position" -- and I think they're just referring to
24 your department at this point -- "Professor Michael Behe, is
25 a well-known proponent of 'intelligent design.' While we

1 respect Professor Behe's right to express his views, they
2 are his alone and are in no way endorsed by the department.
3 It is our collective position that intelligent design has no
4 basis in science, has not been tested experimentally, and
5 should not be regarded as scientific."

6 So you've not even been able to convince your
7 colleagues, any of them, Professor Behe?

8 A They all endorse this statement, but I would like
9 to point out, if you would, the entire first paragraph is
10 something that I would completely agree with: Committed to
11 the highest standards of scientific integrity and academic
12 function; unwavering support for academic freedom; the
13 utmost respect for the scientific method; integrity in the
14 conduct of research, and so on.

15 That's a wonderful statement. I agree with it
16 completely. What does it have to do with the arguments that
17 I make?

18 The department faculty is unequivocal in their
19 support of evolutionary theory. What does that mean? To
20 commit one's self to a theory, to swear allegiance to a
21 theory. That's not scientific.

22 If they could point to a paper in the literature,
23 something that, say, Russell Doolittle overlooked which
24 explains how complex molecular systems could be put together
25 by gradual means, by unintelligent means, then I would be

1 happy to agree that Darwinian evolution could explain this.
2 But one can't issue statements and say that a theory is
3 correct if one does not have the papers to back it up.

4 And you'll notice that even in this statement, you
5 see no citations, no citations to explanations for these
6 complex molecular systems. And in the absence of that,
7 while that's fine for them to express their views, it
8 doesn't mean -- it doesn't carry the weight of a single
9 journal paper.

10 Q Journal papers are valuable.

11 A They sure are.

12 Q And they're just referring to the findings
13 accumulated over 140 years, correct?

14 A Well, as I tried to make clear in my testimony,
15 findings accumulated over 140 years that support the
16 contention that Darwinian processes could explain complex
17 molecular systems total a number of zero.

18 And so they -- this is another example of confusing
19 the various aspects of evolutionary theory. It's a very
20 difficult problem, which is why I think students should have
21 it clearly explained to them that evolution is a complex
22 idea, and support for change over time, or support for
23 common descent does not run into supporting natural
24 selection and random mutation.

25 Q Zero papers, Professor Behe?

1 A That's correct.

2 Q Let's turn to your understanding of intelligent
3 design.

4 MR. ROTHSCHILD: And, Matt, if you could return
5 to -- or actually pull up Professor Behe's expert report
6 please.

7 And that's --

8 THE COURT: Mr. Rothchild, we'll go about five more
9 minutes.

10 MR. ROTHSCHILD: This would actually be a great
11 time for a break.

12 THE COURT: Why don't we do that. Let's recess
13 here for about 20 minutes, and we'll return and we'll pick
14 up the new line of cross examination after that. We'll be
15 in recess.

16 THE DEPUTY CLERK: All rise.

17 (Whereupon, a recess was taken from 2:40 p.m.
18 to 3:00 p.m.)

19 THE COURT: Back to Mr. Rothschild on cross
20 examination.

21 BY MR. ROTHSCHILD:

22 Q Professor Behe, right before the break you said
23 that the findings accumulated over 140 years that support
24 the contention that Darwinian processes could explain
25 complex molecular systems total a number of zero, correct?

1 A I'll -- I think I did, yes.

2 Q Okay. And that's a proposition you stand by.

3 A Well, again, you have to look at the papers. And
4 what I meant by that is ones which fully explain how random
5 mutation and natural selection could build a complex system;
6 yes, there are no such explanations.

7 Q Zero papers.

8 A I don't think I said zero papers, perhaps I did,
9 but there are zero explanations.

10 Q And zero is the same number of articles in
11 peer-reviewed scientific journals that argue for the
12 intelligent design of complex molecular systems?

13 A The number of peer-reviewed papers in scientific
14 journals which show that life is composed of molecular
15 machinery that exhibits the purposeful arrangement of parts
16 in detail on term, you know, many many many thousands.
17 There are -- I think there are just one or two that mention
18 intelligent design by name.

19 Q That argue for the intelligent design of complex
20 molecular systems in peer-reviewed scientific journals?

21 A No, I don't think -- now that you mention it, I
22 think that I was thinking of something else.

23 Q And there are zero articles in peer-reviewed
24 scientific journals arguing for the irreducible complexity
25 of complex molecular systems?

1 A There are none that use that phrase, but as I
2 indicated in my direct testimony, that I regard my paper
3 with Professor David Snoke as to be arguing for the
4 irreducible complexity of things such as complex protein
5 binding sites.

6 Q So one, according to your count?

7 A Could you repeat the question, I am afraid --

8 Q I asked you, is it correct that there are zero
9 articles in peer-reviewed scientific journals arguing for
10 the irreducible complexity of complex molecular systems?

11 A I would count some other papers as, as impinging on
12 that, on that topic, but I don't -- they certainly don't use
13 the term irreducible complexity.

14 MR. ROTHSCHILD: Matt, could you pull up Professor
15 Behe's expert report, exhibit 602, and go to pages nine and
16 ten and highlight the five claims identified by Ernst Mayr.

17 BY MR. ROTHSCHILD:

18 Q This is something you discussed in your direct
19 testimony?

20 A Yes, it looks like.

21 Q These are the five claims for evolution identified
22 by Ernst Mayr?

23 A That's right, evolution as such, common descent,
24 multiplication of species, gradualism and natural selection.

25 Q If we could go to page 11 of your report and

1 highlight the underscored text.

2 You say, "Intelligent design theory focuses
3 exclusively on the proposed mechanism of how complex
4 biological structures arose." Correct?

5 A That is correct, yes.

6 Q That's consistent with your testimony today.

7 A Yes, it is.

8 Q Now, the claim that -- if we could go back to Ernst
9 Mayr's list and highlight -- just focus on the common
10 descent. You claim that intelligent design does not take a
11 position on common descent, which is defined here as, "The
12 theory that every group of organisms descended from a common
13 ancestor and that all groups of organisms, including
14 animals, plants, and microorganisms, ultimately go back to a
15 single origin of life on earth." Correct?

16 A I'm sorry, I lost track of the question. What was
17 the question?

18 Q That's how common descent is described here,
19 correct?

20 A Yes, this is Ernst Mayr's definition of common
21 descent, may I add.

22 Q And you're saying intelligent design doesn't make a
23 claim about that proposition.

24 A That's correct.

25 Q Now, if one were to argue for special creation of

1 humans, that would be inconsistent with that proposition,
2 correct?

3 A I'm afraid I don't have a real good understanding
4 of what you mean by the term "special creation."

5 Q Do you have an understanding -- you used the term
6 "special creation" in response to Mr. Muise's question.
7 When you answered those questions, what did you understand
8 "special creation" to mean?

9 A Well, from that I meant the -- I understood the
10 ex nihilo, that is creation appearance from absolutely
11 nothing of some organism.

12 Q So if that kind of creation occurred -- if one was
13 arguing for special creation of humans, that would be
14 inconsistent with the proposition of common descent
15 described up there?

16 A If one were arguing for the ex nihilo creation of
17 humans, that would be inconsistent with common descent.

18 Q And when you say ex nihilo, you're using that
19 synonymously with special creation?

20 A That's the way I understand the term.

21 Q Okay. And then Dr. Mayr also has the claim of
22 gradualism, which says, "According to this theory,
23 evolutionary change takes place through the gradual change
24 of populations and not by the sudden, saltational,
25 production of new individuals that represent a new type."

1 And it's your testimony that intelligent design
2 does not properly make a claim about that proposition in the
3 theory of evolution?

4 A That's correct. It could either -- it could be
5 consistent with a gradualistic or a nongradualistic
6 fossil -- or nongradualistic history of life. It is not a
7 claim that impinges on intelligent design, although it may
8 in fact impinge on theories that purport to explain life
9 without intelligence.

10 Q Let's go back to *Pandas*. If you could open up the
11 book and go to page 98. This is just to prove we're not
12 completely wed to pages 99 to 100, though we may return to
13 them.

14 If you could go down to the first column on page
15 98, under the heading "Sudden Appearance or Face Value
16 Interpretation," it states: "The fossil record shows that
17 most organisms remain essentially unchanged. The conclusion
18 to be drawn is that major groups of plants and animals have
19 co-existed on the earth independent of each other in their
20 origins, which must be explained in some way other than
21 Darwinian evolution."

22 Independent of each other in their origins, that is
23 the opposite of going back to a single origin of life on
24 earth, isn't it?

25 A That is -- in my view, that's an attempt to simply

1 explain what we see in the fossil record, which I understand
2 from the quotations that were read to me by Mr. Muise, that
3 some well-known paleontologists have essentially agreed
4 with, to my thinking. Also --

5 Q Sorry.

6 A I'm sorry. But so it -- so it seems to me that the
7 text here is trying to draw a conclusion that is more
8 consistent with the actual fossil record that -- well, the
9 record that they perceive to be the fossil record, without
10 imposing a theoretical construct on top of it.

11 Q It's drawing a conclusion from the fossil record,
12 isn't it, Professor Behe, it's not just describing the
13 fossil record?

14 A That's right, it says conclusion to be drawn, yes.

15 Q And the conclusion is, separate origins of plants
16 and animals, various types -- groups of plants and animals,
17 correct?

18 A Yes. But if I might point out, this is in a
19 section of the book entitled "Meaning of Gaps in the Fossil
20 Record," which actually begins on page 96, which I discussed
21 in my direct testimony. And this is one of a number of
22 different interpretations which attempt to explain what is
23 described as a noncontinuous or apparently noncontinuous
24 record. The first one is that there is an imperfect record,
25 that is, we haven't got all the fossils, or all the fossils

1 didn't fossilize -- or all organisms didn't fossilize. The
2 second that *Pandas* mentions is incomplete search. The
3 thirds that it mentions is jerky process, which is an
4 inartful way of saying punctuated equilibrium. And the
5 fourth one is the -- is the -- is what they're concluding
6 that in fact the fossil record may indicate that these
7 organisms did appear as they are.

8 Q And that last interpretation is inconsistent with
9 the description of common descent in Ernst Mayr's
10 description, correct?

11 A Yes, that's right.

12 Q And it's called the Face Value Interpretation,
13 correct?

14 A That's correct. And let me just repeat just for
15 context, that *Pandas* says -- if I could find the data
16 that -- or the description, and I can't find it right
17 here -- they say that scientists should not accept the face
18 value interpretation of the fossil record, without also
19 exploring the other possibilities, and even then only if the
20 evidence continues to support it.

21 So the way I read the textbook is that they're
22 trying to tell students that this seems to be what the
23 record shows, and we should look for other explanations, and
24 we might draw this conclusion tentatively, but our tentative
25 conclusion is always subject to revision if new data comes

1 out.

2 Q Okay. Let's go on in the page that I pointed you
3 to, page 98. Go to the second column, and the second full
4 paragraph. And it says, "The intelligent design hypothesis
5 is in agreement with the face value interpretation and
6 accepts the gaps as a generally true reflection of biology
7 and natural history."

8 Nothing tentative about that, is there, Professor
9 Behe?

10 A No, I think it's quite tentative in the context of
11 what I just read. It says the intelligent design hypothesis
12 is in agreement with. The way I'm reading it is that it is
13 not in conflict with the face value interpretation because
14 intelligent design doesn't speak to common descent. It only
15 says that we can detect design in some physical features of
16 life. So it does not conflict with intelligent design -- to
17 the intelligent design hypothesis, as it might with one of
18 the tenants of Darwin's theory as written by Ernst Mayr,
19 gradualism, and perhaps common descent as well.

20 So the way I see that is in fact they're saying,
21 well, there is no conflict between intelligent design and
22 the face value -- or the face value interpretation.

23 Q It doesn't say no conflict, does it, Professor
24 Behe, it says in agreement?

25 A That's correct. But in agreement can mean that --

1 can mean no conflict. It means that there is no reason to
2 rule out intelligent design because of this aspect of the
3 fossil record, although other theories might have difficulty
4 with it.

5 Q It doesn't say intelligent design is also in
6 agreement with the jerky process or punctuated equilibrium
7 as you describe it, does it?

8 A I would have to read those sections again more
9 closely.

10 Q Take a minute.

11 A Well, from scanning them it does not look like it
12 says that. But I do not draw any grand conclusions from
13 that. I would just say that, you know, this is a correct
14 statement that the intelligent design hypothesis is in
15 agreement with the face value interpretation.

16 I would also add that it's in agreement with all of
17 the other -- all of the other topics listed under this
18 section as well.

19 Q That's your interpretation.

20 A Yes, it is.

21 Q Okay. Now having critically reviewed the book?

22 A No, that was my understanding from, from the
23 beginning.

24 Q Let's go back a little further. Let's go down a
25 little further in that paragraph. It says, "A growing

1 number of scientists who study the fossil record are
2 concluding that the structural differences between the major
3 types of organisms reflect life as it was for that era.

4 "This view proposes that only the long-held
5 expectations of Darwinian theory cause us to refer to the
6 inbetween areas as gaps. If this is so, the major different
7 groups of living organisms do not have a common ancestry.
8 Such a conclusion is more consistent with currently known
9 fossil data than any of the evolutionary models."

10 It's taking a side, isn't it, Professor Behe? It's
11 taking a side for the face value interpretation.

12 A It certainly is not. I mean, it's certainly
13 proposing something that a student normally doesn't read
14 about in their biology textbook. But it says that this is
15 what the data is consistent with, and it's -- in their
16 opinion it's more consistent with this data than with
17 other -- I'm sorry, with this model than with other models.

18 And earlier, or perhaps later, I've lost the page,
19 it advises students that we should hold our views
20 tentatively, and if new data turn up which cause -- should
21 cause us to revise our estimation of our views, then we
22 should do so. So I see no inconsistency between this -- I
23 do not see this as advocating, I see it as a description.

24 Q Professor Behe, you described earlier you have nine
25 children?

1 A I do, yes.

2 Q Some of them have been through the ninth grade?

3 A Five boys, four girls.

4 Q Congratulations.

5 A Thank you.

6 Q Some of them have been through the ninth grade, I'm
7 assuming?

8 A Yes, they have.

9 Q Okay. Honestly, any ninth grader reading this is
10 going to understand this book to be taking the position that
11 common ancestry, common descent is wrong, isn't that right?

12 A I -- well, I disagree. I do not think so.

13 I think they are careful to present the ordinary
14 interpretation, or the common interpretation. They're
15 careful to say that is the common interpretation. They're
16 careful to say that there are multiple -- multiple
17 explanations for the data within the common interpretation.
18 Then they say that, well, there's this other interpretation
19 that may be consistent with the data too; we should only
20 hold this interpretation if it continues to be consistent
21 with the data.

22 I think a ninth grader reading this would say to
23 themselves, wow, you know, look at the different ways we can
24 look at the data. Huh, let's decide what the data is and
25 what our interpretation is.

1 I do not view this as, as something that would
2 cause a ninth grader to jump up and say ah-hah, there must
3 not have been common descent. I view it as something that
4 would cause a ninth grader to sit down and say, let's think
5 about this data, let's see if we can really -- if our views
6 are as strongly supported as we thought.

7 Q Well, let's go back to page 99 and 100. Okay?

8 "Intelligent design means that various forms of
9 life began abruptly through an intelligent agency with their
10 distinctive features already intact: Fish with fins and
11 scales, birds with feathers, beaks and wings."

12 That's the definitional statement in this section
13 of the book. That's not consistent with common ancestry,
14 it's directly opposed to it, isn't it, Professor Behe?

15 A Well, as I tried to make clear in my direct
16 testimony, I don't think this was well written. I think
17 it's tentatively phrased. It says "some scientists," and
18 certainly I do not think that that is a definition of
19 intelligent design.

20 And what I see this paragraph trying to say is that
21 we see these things in the fossil record as some eminent
22 paleontologists apparently agreed, and that if we hold this
23 view, this face value view, then we do not have to
24 necessarily come up with some strained explanation, or some
25 explanation which seems ad hoc, perhaps that's the way it

1 happened, because intelligent design can accommodate a
2 fossil record like this.

3 Q And the way it happened is inconsistent with common
4 ancestry, birds, fish, separate, right?

5 A Give me a second to read this, please.

6 No, I disagree. It just means abruptly as seen in
7 the fossil record. Even if one thinks it were through
8 intelligent agency, that -- that event might have been
9 through common descent, through some ancestors in the past
10 giving rise to these things, but that it happened so rapidly
11 that it did not leave traces in the fossil record.

12 And might I add that that is oftentimes an
13 interpretation given to the fossil record by
14 paleontologists, such as, say, Stephen Jay Gould and Niles
15 Eldredge. They said that apparently, and if you look at the
16 fossil record -- from my nonexpert understanding -- that the
17 theory of -- punctuated equilibrium says that things change
18 and then suddenly -- or things stay the same and then
19 suddenly change. And so that in the fossil record you just
20 see rather large changes. But they certainly do not
21 disagree with common ancestry, and I don't think this is
22 arguing for it either.

23 Q Professor Behe, it's one thing to say fossils
24 appeared abruptly, it's another to say life began abruptly,
25 isn't it?

1 A I disagree. In the context of this book, when it's
2 talking about fossils, when it's talking about the fossil
3 record, when it's talking about all the problems that one
4 has in getting fossils, that fossils -- if I can find the
5 correct page -- that there might be an imperfect record due
6 to the fact that fossils form imperfectly, that there might
7 be incomplete search and so on, that this conveys to me, and
8 I think to any -- any ninth grader reading it, that this is
9 the data we have from the fossil records. So that when we
10 say these things began in the fossil -- abruptly, that means
11 that we perceive them to begin in the fossil record.

12 Q That's a pretty charitable interpretation,
13 Professor Behe, but let me ask you this question. Abrupt
14 appearance, you would agree with me that's inconsistent with
15 gradual? Gradual and abrupt, you're not going to tell me
16 those are the same?

17 A That's correct. But I'd like to say that a number
18 of scientists, in my understanding, challenge the gradual
19 evolution and the gradual tenant of Darwin's theory. One
20 person is a lady named Lynn Margulis, who is a professor of
21 biology at the University of Massachusetts-Amherst, and a
22 member in the National Academy of Sciences. Let me just
23 briefly explain to make this point. I don't intend to take
24 much time.

25 She proposed that things that we call mitochondria,

1 which occur in eukaryotic cells, which are cells with
2 nucleus, which include us and everything except bacteria,
3 they occurred when a pre-eukaryotic cell essentially
4 enveloped a smaller bacterium, and the two essentially
5 developed a symbiotic relationship.

6 And her view of this, and other people's view of
7 it, is that this is in fact a saltational event; nongradual
8 development of an entirely new life form. So gradualism is
9 not the -- or abruptness is not the opposite of common
10 descent, and -- well, it's not the opposite of common
11 descent.

12 Q Lynn Margulis is not being taught at Dover, but
13 intelligent design is, and it's your assertion that
14 intelligent design makes no claim about gradualism, but this
15 passage we've read here, it's completely inconsistent with
16 the concept of gradualism. Abrupt appearance or -- life
17 beginning abruptly.

18 A Can I see where -- could you read the --

19 MR. MUISE: Objection, the question
20 mischaracterized the evidence. He says intelligent design
21 is being taught in the class. And I don't believe there's
22 any evidence that that is the case.

23 MR. ROTHSCHILD: I think that's an issue of
24 dispute.

25 THE COURT: Restate your objection.

1 MR. MUISE: I believe he prefaced his question that
2 intelligent design is being taught at the Dover -- in the
3 Dover schools, and I don't believe there's evidence that
4 intelligent design is being taught.

5 THE COURT: Well, I understand. This is a bench
6 trial. You say it's taught; you say it's not taught. I'll
7 take that for what it's worth. The objection is overruled.
8 You can answer the question.

9 THE WITNESS: I'm sorry, could you restate the
10 question?

11 BY MR. ROTHSCHILD:

12 Q It says there, "Intelligent design means that
13 various forms of life began abruptly." That's the
14 opposite -- that is directly contrasting the claim of
15 gradualism made by Ernst Mayr, correct?

16 A The -- how shall I phrase this? The sentence there
17 I read as saying that intelligent design can be consistent
18 with; that the fact that the fossil records seems to have
19 forms of life appearing abruptly, while it might cause
20 problems for Darwinism, it does not cause problems for
21 intelligent design, because intelligent design does not
22 speak to how fast or how slow such things happen.

23 And so I see that as saying essentially an
24 intelligent design proponent can take this data at face
25 value and does not necessarily have to have secondary

1 hypotheses to try to explain it.

2 Q That's how you read the -- something that starts,
3 "intelligent design means."

4 A Well, again, as I said in my direct testimony, I
5 don't think this was written very well, but I think the
6 sense of that sentence is not hard to discern.

7 Q All right. Why don't we continue on the subject of
8 common descent. Could you go to page Roman numeral, small
9 Roman numeral ten. This is in the introduction.

10 A I'm sorry, I don't have a small Roman numeral ten
11 in my book.

12 MR. ROTHSCHILD: May I approach the witness, Your
13 Honor?

14 THE COURT: You may.

15 THE WITNESS: Thank you.

16 BY MR. ROTHSCHILD:

17 Q In the last full paragraph of the page it says, "*Of*
18 *Pandas and People* is not intended to be a balanced treatment
19 by itself. We have given a favorable case for intelligent
20 design and raised reasonable doubt about natural descent."
21 Correct?

22 A Yes, that's right.

23 Q And if you'd go to page 33.

24 MR. MUISE: Your Honor, may I just for purposes of
25 the record, that was actually page nine and not page ten.

1 MR. ROTHSCHILD: Did I say Roman numeral ten? I
2 apologize. Roman numeral nine thank you.

3 THE COURT: The record is corrected.

4 MR. ROTHSCHILD: Thank you.

5 BY MR. ROTHSCHILD:

6 Q And on page 33 under the heading, "A Living
7 Mosaic," it says, "The theories of intelligent design and
8 natural descent both have an explanation for why living
9 things share common structures."

10 A Yes, I see that.

11 Q So there it's actually saying intelligent design is
12 a separate theory from natural descent, correct?

13 A Well, the way I read that phrase is that they're
14 contrasting intelligent design with unintelligent processes,
15 which I think they, again, just use the phrase natural
16 descent as trying to indicate that. But I do not read it as
17 opposing the theory of common descent.

18 Q If you'd go to page 127.

19 A Yes.

20 Q And if you could go to the middle of the second
21 column, the paragraph headed, "Among Organisms."

22 A I'm sorry, where is that?

23 Q The second full paragraph.

24 A Oh thank you, yes.

25 Q Starts "Among Organisms," and going to the second

1 sentence it says, "Design proponents have a realistic and
2 more cautious approach to the use of homologies. They
3 regard organisms which show great structural differences,
4 such as starfish and chimpanzees, as having no common
5 ancestry." Correct.

6 A Yes, that's what it says, but again, I read that as
7 the fact that while other theories such as Darwinisms might
8 make a commitment to common ancestry, a theory of
9 intelligent design can live with what the data shows on that
10 respect, because a theory of intelligent design does not
11 speak to that; it just speaks to the effects of
12 intelligence. So I see this as an accommodating sentence
13 rather than as something that is required.

14 Q And if you could go to page 156.

15 A Yes.

16 Q And if you could look at the first column, the --
17 under the second indented paragraph where it says, "This is
18 precisely."

19 A Yes.

20 Q "This is precisely why a book that questions the
21 Darwinian notion of common descent is so necessary."

22 A Yes, I see that. But --

23 Q Okay, so --

24 A Again, if I can just comment that, again, I see
25 this as telling students or presenting to students that it

1 seems that much of the data in the fossil record, as the
2 writers of *Pandas* perceive it, is being fit into a
3 theoretical framework which is dictated by Darwinian theory.
4 And that if you do not invoke that theory and you look at
5 the data in a different way, then intelligent design can
6 live with whatever the results of that different look shows.

7 Q In your view intelligent design doesn't have to
8 take any position on common descent?

9 A Yes.

10 Q Okay. But here you say, Behe says, intelligent
11 design is making no claim about common descent; and this
12 book says, intelligent design questions the Darwinian notion
13 of common descent. Those are the same thing to you?

14 A I'm sorry, could you just repeat that, please?

15 Q Behe says, intelligent design makes no claim about
16 common descent.

17 A Yes.

18 Q *Pandas* says, intelligent design questions the
19 Darwinian notion of common descent. Those are the same
20 thing to you?

21 A I see this as part of an argument. The -- as I try
22 to make clear in my testimony, intelligent design is seen in
23 the purposeful arrangement of parts, and that is the
24 positive argument for intelligent design. But also, a part
25 of the task of somebody who holds that view is to try to

1 answer other views which claim to -- which claim to explain
2 what intelligent design purports to explain.

3 And one of those is to show where the other theory
4 has problems. And I view this as part of that kind of
5 negative argument that, that while -- that while -- that
6 while intelligent design can live with what data we have,
7 this seems to be a problem for the current theory, as a
8 number of paleontologists have said. And they've tried
9 to -- they've tried to fix it up, and they propose these
10 explanations, and perhaps they're right, but maybe that's
11 not correct. And if it's not correct, well then this other
12 theory, this rival theory is -- is -- has some difficulties,
13 but that intelligent design does not. So I see it as part
14 of a negative argument against a rival to intelligent
15 design.

16 Q And it's a negative argument against the part of
17 that argument called common descent, correct?

18 A That's correct, just as my argument was an argument
19 against natural selection. And when people make claims for
20 natural selection, I have to show why that is a poor
21 explanation for what we see.

22 Q So I think we're in agreement, in *Pandas*,
23 intelligent design is making a claim about common descent in
24 the same way you claim to be making a claim about natural
25 selection?

1 A No, I think that's incorrect. I think the claim of
2 natural selection goes more directly to the question of the
3 purposeful arrangement of parts.

4 The idea of common descent does not go, in my view,
5 so directly to the question of the purposeful arrangement of
6 parts. But nonetheless, as a part of Darwinian theory, it's
7 required much more for Darwinian theory. Nonetheless, that
8 would make that idea less plausible, and therefore that's
9 part of the negative argument.

10 Q Okay. So *Pandas* is making an argument against
11 common descent, but you say intelligent design is not?

12 A *Pandas* is making a negative argument against common
13 descent to show the plausibility to greater -- more greatly
14 enhance the plausibility of the alternative of intelligent
15 design, that's correct?

16 Q Thank you. Now, can we go back to page 11 of the
17 report and highlight again the underscored text.

18 So this is back to the claim that you say
19 intelligent design makes, "Intelligent design theory focuses
20 exclusively on the proposed mechanism of how complex
21 biological structures arose."

22 Please describe the mechanism that intelligent
23 design proposes for how complex biological structures arose.

24 A Well, the word "mechanism" can be used in many
25 ways. In this I was -- and when I was referring to

1 intelligent design, I meant that we can perceive that in the
2 process by which a complex biological structure arose, we
3 can infer that intelligence was involved in its origin.

4 Much like if I might refer back to the Big Bang
5 theory, the Big Bang theory proposes no mechanism for how
6 the universe arose, but nonetheless it infers that, whatever
7 the mechanism, it came by some sort of explosive process.

8 So there are many other questions that these
9 theories leave unaddressed, but they do posit some aspect of
10 the cause which is very useful to have and which is
11 supported by the data.

12 Q So intelligent design is about cause?

13 A I'm sorry, could you say that again?

14 Q I just want to get it clear here, intelligent
15 design is about cause?

16 A Well, cause is a broad word, and when you're trying
17 to explain how something came about, you can say it came
18 about for a variety of reasons. But intelligent design is
19 one reason or one aspect or one cause to explain how the
20 purposeful arrangement of parts that we see did come about.

21 Q Back to my original question. What is the
22 mechanism that intelligent design proposes?

23 A And I wonder, could -- am I permitted to know what
24 I replied to your question the first time?

25 Q I don't think I got a reply, so I'm asking you,

1 you've made this claim here, "Intelligent design theory
2 focuses exclusively on the proposed mechanism of how complex
3 biological structures arose." And I want to know what is
4 the mechanism that intelligent design proposes for how
5 complex biological structures arose?

6 A Again, it does not propose a mechanism in the sense
7 of a step-by-step description of how those structures arose.
8 But it can infer that in the mechanism, in the process by
9 which these structures arose, an intelligent cause was
10 involved.

11 Q But it does not propose an actual mechanism?

12 A Again, the word "mechanism" -- the word "mechanism"
13 can be used broadly, but no, I would not say that there was
14 a mechanism. I would say we have an aspect of the history
15 of the structure.

16 Q So when you wrote in your report that "Intelligent
17 design theory focuses exclusively on the proposed
18 mechanism," you actually meant to say intelligent design
19 says nothing about the mechanism of how complex biological
20 structures arose.

21 A No, I certainly didn't mean to say that. I meant
22 to say what I said in response to that last question, that
23 while we don't know a step-by-step description of how
24 something arose, nonetheless we can infer some very
25 important facts about what was involved in the process,

1 namely, that intelligence was involved in the process.

2 And let me go back one more time to the Big Bang
3 theory. Again, we don't have a mechanism for the Big Bang,
4 but we can infer some important events about what happened,
5 and that was that it happened in some explosive manner, it
6 happened a distinct time ago and so on.

7 So additionally, I might say, that it also focuses
8 on other proposed mechanisms that purport to explain the
9 purposeful arrangement of parts. And so I think it is quite
10 accurate to say that that's exactly where intelligent design
11 focuses.

12 Q So it actually -- it focuses on other proposed
13 mechanisms, by that you mean natural selection, don't you?

14 A No, just a natural selection, complexity theory and
15 so on. But certainly the most widely accepted, and then the
16 one that you would have to convince most people -- or
17 explain to most people is not well supported is the one
18 which is the currently accepted explanation of natural
19 selection.

20 Q Okay. And so in terms of mechanism, it's just a
21 criticism of Darwinian evolution's mechanism and not a
22 positive description of the mechanism?

23 A No, I disagree. I say that while, again, while it
24 does not give you a step-by-step description of how such
25 things occurred, it does tell you something very important

1 about the cause or the way in which these structures arose,
2 and that was through the actions of an intelligent cause.

3 Q So, Professor Behe, why don't we go to your
4 deposition and see how you answered the questions then,
5 okay?

6 A Okay.

7 Q Could you look at page 179 of your deposition.

8 A Yes.

9 Q I asked you, "What is the proposed mechanism of how
10 complex biological structures arose according to intelligent
11 design theory?"

12 A Yes.

13 Q And you answered, "Intelligent design does not
14 propose a mechanism, it simply tries to support the
15 conclusion that intelligent activity was involved in
16 producing the structures."

17 A Yes. And that language, I think, is completely
18 consistent with what I was trying to say here today, that it
19 does not tell you step by step how something was proposed --
20 or how something was produced, but nonetheless it says
21 something very very important about the origin of the
22 structure, and that is that intelligent activity was
23 involved in producing it.

24 Q And then further down the page at line 24 I asked
25 you, "In terms of the mechanism, it's just a criticism of

1 Darwinian evolution's mechanism and not a positive
2 description of a mechanism." And what did you answer,
3 Professor Behe?

4 A I said "that's correct." But again, I think this
5 is completely consistent with what I just said. Again, it
6 does not propose a step-by-step description, but it -- but
7 it proposes or it accounts for some very important features
8 of what was involved in its origin, and that is intelligent
9 activity.

10 Q You have, throughout your testimony over the past
11 two days, criticized the concept of natural selection quite
12 a bit, correct, or the claims made about natural selection?

13 A Well, I think you have to be careful. I think
14 natural selection is real, and certainly explains a lot of
15 things. And what it's -- what it can explain, it explains
16 well. And like I said, it does account for a number of
17 features of life.

18 So I would not say I'm criticizing natural
19 selection. I think that many people infer that natural
20 selection has -- can explain things that I don't think it
21 can, and so I've criticized those arguments and those
22 extrapolations.

23 Q But you obviously agree it is a valid phenomenon,
24 it explains --

25 A Yes, of course. Yes, sure.

1 Q Including -- it explains things at the biological
2 level, at the organism level?

3 A Yes, it certainly does.

4 Q And it also explains things at the biochemical
5 level?

6 A That's correct too, yes.

7 Q For example, antifreeze proteins, that's an example
8 of natural selection operating at the biochemical level,
9 correct?

10 A If by antifreeze protein you mean the particular
11 antifreeze protein that was discovered in antarctic
12 notothenioid fish a few years ago in which a gene for
13 trypsinogen, the five prime region for that gene was found
14 next to a coding region for a simpler one, yes, that's
15 right, I do agree with that.

16 Q You can read my mind.

17 And that -- that evolution through natural
18 selection was demonstrated partly by experiment, partly by
19 explanation, correct?

20 A That's correct, yes.

21 Q And you gave us a nice illustration of hemoglobin
22 yesterday.?

23 A Yes, I showed a slide of hemoglobin.

24 Q Pretty complicated structure?

25 A It certainly is, yes.

1 Q And that is another thing where -- another
2 biochemical system that you acknowledge can be explained
3 through natural processes?

4 A No, you have to be very very careful there. In my
5 book I discuss the example of hemoglobin, and I said -- I
6 discussed it as an example of something that may be amenable
7 to Darwinian explanation. And I was careful to say that if
8 you start at the starting point of a protein similar to
9 what's called myoglobin, which is a single chain protein,
10 and you probably recall yesterday that hemoglobin has four
11 chains stuck together; if you have this single chain
12 protein, myoglobin, which essentially has the very similar
13 structure to hemoglobin, if you start with that, the
14 question is, what does it take to form an aggregate of that
15 structure with the properties of hemoglobin.

16 So I said, for that segment, starting with
17 myoglobin, going to hemoglobin, that I did not see any
18 impediment for natural selection to explain that. But I did
19 not -- there certainly is no literature. There is no
20 experiment. There is no detailed description of how that
21 actually could happen. So I said that for purposes of
22 argument I think that, you know, we can -- we can certainly
23 say for now that perhaps Darwinian mechanisms can explain
24 that.

25 Q Now, before we go in detail into your argument from

1 irreducible complexity, I want to confirm some other aspects
2 of how you understand intelligent design.

3 It does not identify who the designer is, correct?

4 A That's correct. Let me just clarify that. I'm
5 talking about the scientific argument for intelligent design
6 based on physical data and logic, yes.

7 Q You believe it's God, but it's not part of your
8 scientific argument?

9 A That's correct.

10 Q It does not describe how the design occurred.

11 A I'm sorry?

12 Q Intelligent design does not describe how the design
13 occurred.

14 A That's correct, just like the Big Bang theory does
15 not describe what caused the Big Bang.

16 Q Does not identify when the design occurred.

17 A That is correct.

18 Q In fact, intelligent design takes no position on
19 the age of the earth or when biological life began.

20 A That's correct.

21 Q But think it was -- the earth as billions of years
22 old or 10,000 years old.

23 A That's correct.

24 Q It says nothing about what the designer's abilities
25 are.

1 A Other than saying that the designer had the ability
2 to make the design that is under consideration, that's
3 correct.

4 Q It sounds pretty tautological, Professor Behe.

5 A No, I don't think so at all. When you see a
6 structure, even in our everyday world, just think about
7 archaeological structures such as a Sphinx or Easter Island
8 or some such thing, one thing you can say is that these --
9 two things you can say, is that these things were designed,
10 and that the intelligent agent or intelligent agents who
11 designed them had the ability to design them. So I don't
12 think that's tautological at all.

13 Q Archeology is a science that you find very similar
14 to the design argument of biochemical systems?

15 A Well, archeology is a science, and design argument
16 is an argument. But I think in archeology some of the
17 reasoning they employ -- I'm not an archeologist, of course,
18 but I understand that in some of the reasoning they employ
19 is similar to their reasoning that intelligent design
20 proponents such as myself might employ.

21 Q But it is your position that we know the designer's
22 abilities?

23 A I'm sorry, could you say that again?

24 Q It is your position that we know the designer's
25 abilities?

1 A Well, as I think I said in response to the
2 question, we know the designer had the ability to make the
3 design. So, but beyond that, we would be extrapolating
4 beyond the evidence, so we can't say more than that.

5 Q And we know nothing about the designer's
6 limitations.

7 A Well, we have to infer what we have from the data,
8 and the data tell us that a designer can make a certain
9 object. It does not say what the designer might not do. In
10 our everyday world somebody who makes some simple object
11 might be able to make a more complex one or so on.

12 Q Intelligent design says nothing about the
13 intelligent designer's motivations?

14 A The only statement it makes about that is that the
15 designer had the motivation to make the structure that is
16 designed.

17 Q How can intelligent design possibly make that
18 statement, Professor Behe?

19 A I don't understand your question.

20 Q How can it possibly say anything about the
21 intelligent designer's motives without knowing anything
22 about who the intelligent designer is?

23 A Well, I think it's -- that's pretty easy. For
24 example, let's go back to the SETI project, Search for
25 Extraterrestrial Intelligence. Suppose that astronomers in

1 that project one day discerned a signal coming in from outer
2 space that they discerned to be of intelligent origin, maybe
3 even it carried a message or something like that exotic.
4 How would they know the motives of whatever sent that? They
5 might not know them, but nonetheless, they could -- as a
6 matter of fact, the whole project is based on the assumption
7 that they would be able to detect the message without
8 knowing the motives of whatever sent it, without knowing its
9 abilities beyond the ability to send the message, and so on.
10 So I don't think that's a problem whatsoever.

11 Q Let me try and cut this short. It's fair to say
12 that in the case of the intelligent designer and biological
13 or biochemical life, we know nothing about its ability or
14 limitations except from what we conclude from the system
15 that was designed?

16 A Yes. A scientific theory makes -- draws its
17 conclusions from the physical evidence. So the fact that
18 intelligent design draws conclusions from the physical
19 evidence is completely consistent with what any good
20 scientific theory could do.

21 Q Well, I mean, let's take your analogy of human
22 design. I want a nice car, right?

23 A I believe that.

24 Q And you could look at a car and say Eric made that
25 because he wants a nice car, right?

1 A I'm sorry?

2 Q Eric made the car because he wants a nice car,
3 right? That would be an inference about my motives based
4 just on seeing the car in my garage, or that I bought the
5 car?

6 A No, I disagree. What you would say from looking at
7 the car in your garage is that this car was designed, and if
8 it was in your garage and it turned out that somebody was
9 staying at your house that was not you and that was their
10 car, well, then that's consistent with the conclusion of
11 intelligent design. The extrapolation to who the designer
12 was or who purchased the car or anything like that is
13 unjustified by the data. If it was, you know -- well, I
14 could make other examples, but I think the point is clear.

15 Q And just to be -- just to wrap this point up, we
16 know nothing about the intelligent designer's abilities or
17 limitations except for what we can conclude from the
18 specific system or object that we're observing?

19 A Since intelligent design is a scientific theory, it
20 has to draw its conclusions from physical data. So yes,
21 that's how we determine whatever we know about the design
22 and whatever inferences we make to the cause of the design.

23 Q And similarly, we know nothing about the
24 intelligent designer's motives or needs or desires except
25 for what we can conclude from the specific system that we're

1 observing?

2 A Yes. Let me just reiterate that, that in fact a
3 scientific theory depends on physical data. It can't depend
4 on anything else. And so of course it has to draw whatever
5 inferences it can from the physical data that it has
6 available.

7 Q Okay, and in this case that's just the system we're
8 look at, the bacterial flagellum?

9 A Well, if you're considering the bacterial
10 flagellum, then yes, that would be it, you could consider
11 other things as well.

12 Q Now, you've told this Court that intelligent design
13 does not involve supernatural action, correct?

14 A That's correct. I -- no, I said that it -- it's --
15 intelligent design is a scientific theory that focuses
16 exclusively on physical data and logical inferences. And so
17 since any scientific theory does not infer from beyond the
18 data, then we cannot say anything about whether some
19 structure was produced by supernatural means.

20 Q Could you open *Darwin's Black Box*, which is
21 plaintiff's exhibit 647.

22 A What page?

23 Q I'm sorry. Page 193.

24 A 193, thank you.

25 MR. ROTHSCHILD: Matt, could you highlight on page

1 193, the first paragraph.

2 BY MR. ROTHSCHILD:

3 Q Could you read that paragraph, Professor Behe?

4 A Can I read from the book here?

5 Q Yes, please.

6 A Okay. "There is an elephant in the roomful of
7 scientists who are trying to explain the development of
8 life. The elephant is labeled intelligent design. To a
9 person who does not feel obliged to restrict his search to
10 unintelligent causes, the straightforward conclusion is that
11 many biochemical systems were designed. They were designed
12 not by the laws of nature, not by chance and necessity,
13 rather, they were planned. The designer knew what the
14 systems would look like when they were completed, then took
15 steps to bring the systems about. Life on earth at its most
16 fundamental level, in its most critical components, is the
17 product of intelligent activity."

18 Q They were designed not by the laws of nature,
19 correct, Professor Behe?

20 A That is correct.

21 Q Professor Behe, if you could turn to exhibit 718,
22 which is *Reply to My Critics*.

23 MR. ROTHSCHILD: And, Your Honor, we'll have it up
24 on the screen, but if it's easier to look at paper, I have a
25 copy.

1 THE COURT: No, if you're going to put it up,
2 that's fine.

3 BY MR. ROTHSCHILD:

4 Q And Professor Behe, it's fair to say that this is
5 one of your most significant published works on the subject
6 of intelligent design since *Darwin's Black Box*?

7 A Well, this is where I, as the title implies, I try
8 to address criticisms that have been raised against the
9 intelligent design proposal.

10 Q One of your more important pieces of work on this
11 subject?

12 A I consider it to be, yes.

13 Q Could you turn to page 696 of that article.

14 A Yes.

15 MR. ROTHSCHILD: And, Matt, if you could go to the,
16 I guess the first full paragraph, which begins "In such a
17 view," and highlight the passage that begins "By intelligent
18 design" midway through the page.

19 BY MR. ROTHSCHILD:

20 Q And here you say, "By 'intelligent design' I mean
21 to imply design beyond the simple laws of nature. That is,
22 taking the laws of nature as given, are there other reasons
23 for concluding that life and its component systems have been
24 intentionally arranged."

25 And going further down the page you say, "In my

1 book, and in this article, whenever I refer to intelligent
2 design, I mean this stronger sense of design-beyond-laws."

3 And those are natural laws, correct, Professor
4 Behe?

5 A Yes. And if you read that sentence that you
6 skipped over there, it says, By intelligent design I mean --
7 I'm sorry, let me see -- I kind of got lost here. I mean to
8 design -- "I mean to imply design beyond the simple laws of
9 nature. That is, taking the laws of nature as given, are
10 there other reasons for concluding that life and its
11 component systems have been intentionally arranged, just as
12 there are reasons beyond the laws of nature for concluding a
13 mousetrap was designed."

14 What I was intending by that passage was something
15 much less grand than the design of the laws of nature, to
16 which I was contrasting my position. I was likening it to
17 the design that is involved in simple mechanical objects
18 such as the mousetrap. And as I explained in my testimony,
19 that is exactly the basis for how we detect design, when we
20 perceive the purposeful arrangement of parts.

21 So that is the sense of design in which I meant.
22 It's actually a more modest sense of design than design of
23 the laws of nature.

24 Q Mechanical design of a mousetrap is beyond the laws
25 of nature, Professor Behe?

1 A It requires intelligent activity. It's beyond
2 unintelligent -- the operation of unintelligent laws. There
3 is no law of nature that explains a mousetrap.

4 Q They are designed by natural actors, correct?

5 A That's correct, but how they act is not described
6 by any law that I know of, and I have -- I have never read
7 any law that describes how a mousetrap comes about.

8 Q Well, why don't we go on to page 700. If you could
9 highlight the question that Professor Behe is asking on this
10 page. "Is it plausible that the designer is a natural
11 entity?" in the first full paragraph.

12 That is the question you ask. "Is it plausible
13 that the designer is a natural entity?"

14 MR. ROTHSCHILD: And then if, Matt, if you could
15 actually go to the next two full paragraphs and highlight
16 those.

17 BY MR. ROTHSCHILD:

18 Q And you say, "The problem is the following.
19 Currently we have knowledge of only one type of natural
20 intelligent designer even remotely capable of conceiving
21 such structures as are found in the cell, and that is a
22 human. Our intelligence depends critically on physical
23 structures in the brain which are irreducibly complex.
24 Extrapolating from this sample of one. . . " -- that's
25 humans, correct?

1 A Yes, that's right.

2 Q ". . . it may be that all possible natural
3 designers require irreducibly complex structures which
4 themselves were designed. If so, then at some point a
5 supernatural designer must get into the picture.

6 "I myself find this line of reasoning persuasive.
7 In my estimation, although possible in a broadly permissive
8 sense, it is not plausible that the original intelligent
9 agent is a natural entity. The chemistry and physics that
10 we do know weigh heavily against it. If natural
11 intelligence depends on physical organization, then the
12 organization seems likely to have to be enormously complex
13 and stable over reasonable periods of time. While simpler
14 systems may perform the tasks that irreducibly complex
15 systems perform a terrestrial life, they would likely
16 perform them more slowly and less efficiently, so that the
17 complexity required for intelligence would not ultimately be
18 achieved. Thus, in my judgment it is implausible that the
19 designer is a natural entity."

20 You don't absolutely rule it out, but you're not
21 taking it very seriously, are you?

22 A Well, I've said that quite a number of times. I
23 think I said that at the beginning of my testimony
24 yesterday, that I think in fact from -- from other
25 perspectives, that the designer is in fact God. But if you

1 turn back to page 699, there's a section entitled, "Is it
2 possible that the designer is a natural entity?" And I
3 won't quote from it, but I come to the conclusion there that
4 sure it's possible that it is, but I do not -- I myself do
5 not find it plausible.

6 Let me again liken this to the Big Bang theory. Is
7 it possible that there was some event in nature that caused
8 such a thing? Yes, it's possible. We know of no such
9 event, we don't -- you know, we haven't known of such an
10 event since the Big Bang theory was first proposed something
11 like 75 years ago; but it's certainly possible. It's also
12 possible that it wasn't.

13 And the distinction that I was trying to make
14 throughout my testimony is that when we use scientific
15 reasoning, and when we constrict ourselves to physical
16 evidence and logical reasoning, we can only go so far. We
17 can say we don't have a natural -- we don't have an
18 explanation for this event right now. We cannot -- and the
19 history of science shows this time and time again, we cannot
20 say that because we don't have a natural or an explanation
21 for a certain event now, that we won't have one in the
22 future. Intelligent design I think is in the same category
23 as the Big Bang on that point.

24 Q And I know you're fond of the Big Bang, but let's
25 be clear, you're not an expert in physics, correct?

1 A That is correct.

2 Q And nor an expert in astrophysics?

3 A That's right.

4 Q Okay. And you're making a pretty scientific
5 argument here, physics, chemistry, they pretty much rule out
6 a natural designer; that's what you're trying, right?

7 A No --

8 Q Not absolutely, but makes it pretty implausible?

9 A That's what implausible means. Yes, but again, the
10 conclusion from this evidence does not lead one to an
11 explanation beyond nature.

12 With this I was also relying on my other -- on
13 considerations other than scientific ones, from
14 philosophical, theological and historical beliefs. So
15 again, arguing from scientific data only takes you so far.
16 It takes you to the point of the fact that we do not have an
17 explanation for this event right now. But to go beyond that
18 requires a reasoning beyond just scientific reasoning.

19 Q So in *Darwin's Black Box* you said beyond nature, in
20 this article you said beyond nature, but that's just your
21 theological hat?

22 A Well, as my discussion of John Maddox's editorial
23 from yesterday *Down with the Big Bang* which occurred in
24 *Nature*, and my discussion of Arthur Eddington's writings,
25 and my discussion of Walter Nernst's comments, many people

1 saw in the Big Bang implications for theology and philosophy
2 and things beyond nature.

3 So I think that -- that nonetheless we would all
4 agree that the Big Bang is a scientific theory in the same
5 way intelligent design, in my view, is a scientific theory,
6 even if somebody like John Maddox sees for this theory that
7 it has implications beyond science.

8 Q Now, you've said in your testimony today and
9 yesterday you personally believe the designer is God.

10 A Yes.

11 Q And in this article in fact you say for purposes of
12 the discussion I'm going to assume the supernatural entity
13 is God, right?

14 A Yes.

15 MR. ROTHSCHILD: And, Matt, if you could turn to
16 page 705 of the article. If you could highlight the top
17 paragraph, until the sixth line.

18 And you write here, "What if the existence of God
19 is in dispute or is denied? So far I have assumed the
20 existence of God. But what if the existence of God is
21 denied at the outset, or is in dispute? Is the plausibility
22 of the argument to design affected? As a matter of my own
23 experience the answer is clearly yes, the argument is less
24 plausible to those for whom God's existence is in question,
25 and is much less plausible for those who deny God's

1 existence."

2 It's a God friendly theory, isn't it, Professor
3 Behe?

4 A Let me respond in a couple of ways to that. First,
5 let me clarify for context that this is a journal called
6 *Biology and Philosophy*. So not only am I speaking about
7 scientific matters here, but I'm also talking about
8 nonscientific matters here in an academic forum. Academics
9 embraces more than just science. This is an academic forum
10 which also embraces philosophy, and so I addressed
11 philosophical issues as well.

12 And again, my statement as written is certainly
13 correct. And it's happened time -- many times in science,
14 and, again, I'll just refer back to John Maddox's article
15 *Down With the Big Bang*. He didn't like the Big Bang theory.
16 And it wasn't because the data were inconsistent with it,
17 it's because it was philosophically unacceptable. Walter
18 Nernst hated the idea of a beginning to the universe. It
19 was unscientific. So -- and other people have said similar
20 things.

21 So it's clearly true that people make decisions
22 even about a scientific theory, based not only on the
23 science itself, but what they perceive as other
24 ramifications of the theory.

25 But I argue, I've argued a number of places, that

1 it's the proper role of a scientist to leave aside those
2 other considerations as much as possible and focus simply on
3 the scientific data.

4 Q That's what you try to do as a scientist?

5 A Yes, I do.

6 Q The year you wrote *Darwin's Black Box* was also the
7 year that the Center for the Renewal of Science and Culture
8 at the Discovery Institute was founded, correct, 1996?

9 A Is that -- I'm fuzzy on the date of the
10 establishment of the Center for Renewal, yeah.

11 Q You were one of the Center's fellows from the
12 beginning, correct?

13 A Yes, that's correct. I was asked to join by Bruce
14 Chapman, who was the president of the Discovery Institute.

15 Q And you've remained a fellow since that time,
16 correct?

17 A Yes, I'm still a fellow.

18 Q And even before the Discovery Institute was
19 founded, you participated in the Pajaro Dunes conference?

20 A Yes, that was a private conference which was
21 organized by a man named Phillip Johnson.

22 Q And in addition to Mr. Johnson, yourself, Stephen
23 Meyer was there?

24 A Yes, Steve Meyer was there too.

25 Q William Dembski?

1 A He was there too.

2 Q Paul Nelson?

3 A Yep.

4 Q Dean Kenyon?

5 A Him too.

6 Q Okay, and you all discussed your ideas?

7 A Yes, that was the purpose of the conference, to
8 talk with each other and to bounce ideas off of each other
9 and so on.

10 Q And all of the individuals I've mentioned,
11 including yourself, became fellows or officers of the
12 Discovery Institute's Center for Renewal of Science and
13 Culture, correct?

14 A I'm not sure. I'll take your word for it, though.

15 Q Okay. And you have no reason to doubt that?

16 A I don't, no.

17 Q And you accept funding from the Center for Renewal
18 of Science and Culture?

19 A As -- over the past years, and there was a time
20 about -- a period of three years, about eight years ago, up
21 to about five years ago, where I was given a grant by the
22 Discovery Institute -- well, actually I wasn't given a
23 grant, the Discovery Institute gave a sum of approximately
24 8,000 to \$10,000 per year to the university to release me
25 from some teaching obligations so that I could write and

1 think about intelligent design issues.

2 Q And that happened for about five or six years, is
3 that right?

4 A No, three years.

5 Q Three years, okay.

6 And in fact the Discovery Institute's Center for
7 Renewal of Science and Culture heralded your work in a
8 document it prepared called *The Wedge Strategy*, didn't it?

9 A I'll have to refresh my memory, but I think they
10 did, yes.

11 MR. ROTHSCHILD: Matt, if you could put up 140.

12 May I approach the witness, Your Honor?

13 THE COURT: You may.

14 BY MR. ROTHSCHILD:

15 Q This is a document that you've been aware of for
16 some time?

17 A I heard about it. I wasn't aware about it until I
18 heard about it being discussed on the Internet. Apparently
19 somebody purloined this document, or took the document from
20 the Discovery Center and posted it on the web, and there was
21 a discussion of it then. That's when I became aware of it.

22 Q And you read it?

23 A Yes, I think I did after it came out.

24 Q And if you could turn six pages in, and it actually
25 has handwriting that says page four on it. And you see

1 there's a section called the "Five Year Strategic Plan
2 Summary."

3 A Yes.

4 MR. ROTHSCHILD: If you could highlight that first
5 paragraph there, Matt.

6 BY MR. ROTHSCHILD:

7 Q What it said here was, "The social consequences of
8 materialism have been devastating. As symptoms, those
9 consequences are certainly worth treating. However, we are
10 convinced that in order to defeat materialism, we must cut
11 it off at its source. That source is scientific
12 materialism. This is precisely our strategy. If we view
13 the predominant materialist science as a giant tree, our
14 strategy is intended to function as a 'wedge' that, while
15 relatively small, can split the trunk when applied at its
16 weakest points. The very beginning of this strategy, the
17 'thin edge of the wedge' was Phillip Johnson's critique of
18 Darwinism begun in 1991, in *Darwinism on Trial*, and
19 continued in *Reason in the Balance* and *Defeating Darwinism*
20 *by Opening Minds*. Michael Behe's highly successful *Darwin's*
21 *Black Box* followed Johnson's work. We are building on this
22 momentum, broadening the wedge with a positive scientific
23 alternative to materialistic scientific theories, which has
24 come to be called the theory of intelligent design. Design
25 theory promises to reverse the stifling dominance of the

1 materialist world view, and to replace it with a science
2 consonant with Christian and theistic convictions."

3 You were aware of this passage in the document when
4 you read it?

5 A I assume I did read it, yes, roughly at that point.

6 Q And you were aware that your work was described in
7 this context?

8 A Yeah, I saw it mentioned there, yes.

9 Q Okay. And you were a fellow at the time you became
10 aware of this document?

11 A That's correct. I did not -- I did not -- I was
12 not aware of it before it was placed on the Internet. I
13 don't know the source of the document, who wrote it, whether
14 it was some -- somebody's draft of something, whether it was
15 a fundraising letter, whether it was, you know, something
16 else, but I did not know.

17 Q A strategy document? You don't know?

18 A I don't know, no. You know, again, if one doesn't
19 see who wrote it, I don't know what to make of this.

20 If this was written by somebody who had no
21 particular importance in the organization, or who had in
22 mind something that would not, you know, be approved by
23 people in charge or some such thing, then there was no
24 particular reason to pay attention to it.

25 Q But you continued on as a fellow after seeing this?

1 A You bet I did. I -- you know, I very much enjoy my
2 association with the Discovery Institute. I think that
3 people associated with it are very helpful in my --
4 developing my ideas. And yes, I'm -- I place much value on
5 my contacts there.

6 MR. ROTHSCHILD: Your Honor, I'd just like to
7 discuss one more exhibit with Professor Behe, and that might
8 be a good time to break, and it will be brief.

9 THE COURT: After that?

10 MR. ROTHSCHILD: Yes.

11 THE COURT: All right, I'll let it to your
12 discretion.

13 MR. ROTHSCHILD: Thank you.

14 BY MR. ROTHSCHILD:

15 Q You testified that you had been invited to write
16 articles about intelligent design several times for *The New*
17 *York Times*?

18 A I'm sorry?

19 Q You testified yesterday that you have been asked on
20 several occasions to write articles for *The New York Times*.

21 A I was invited several times to contribute op-ed
22 pieces on various news items -- or on various topics in the
23 news at that time for *The New York Times*, yes.

24 Q And let me show you exhibit 723.

25 A Thank you.

1 Q This was an article you wrote in 1996?

2 A That's right. The occasion was that Pope John
3 Paul II, had issued a letter to the Pontifical Academy of
4 Sciences concerning evolution, and it was very much in the
5 news at that point. And *The New York Times* had just
6 reviewed my book earlier in the summer, and so they knew
7 that I was a Catholic scientist and that I might be an
8 appropriate person to write commentary on that event.

9 Q And in the second full paragraph, beginning, "I
10 grew up," you write, "I grew up in a Catholic family and
11 have also believed in God. But beginning in parochial
12 school I was taught that He could use natural processes to
13 produce life. Contrary to conventional wisdom, religion has
14 made room for science for a long time. But as biology
15 uncovers startling complexity in life, the question becomes,
16 can science make room for religion."

17 That's what you wrote, correct?

18 A Yes, that's right.

19 Q And then you went on to discuss your proposition of
20 intelligent design as set forth in *Darwin's Black Box*,
21 correct?

22 A And if I could just say that by that phrase, "can
23 science made room for religion," I had in mind reactions
24 like that of John Maddox and that of Arthur Eddington and
25 that of Walter Nernst, who were thinking that science

1 necessarily had to rule out things whose philosophical or
2 other implications did not disturb them.

3 Q And those names are nowhere in this article.

4 A I had, I think, 900 words to talk about this. So
5 there are many many other things that I could have included
6 in writing on the topic like this, which I did not have the
7 room to do.

8 Q Big Bang was between the lines here.

9 A Actually, I mention the Big Bang as often as I can.
10 I'm surprised I didn't have it in here.

11 Q Maybe we could take this as a precedent.

12 And if you could go to the second page. And the
13 second to the last paragraph, you write, "Intelligent design
14 may mean that the ultimate explanation for life is beyond
15 scientific explanation. That assessment is premature. But
16 even if it is true, I would not be troubled. I don't want
17 the best scientific explanation for the origins of life; I
18 want the correct explanation."

19 That's what you wrote, correct?

20 A I certainly did write that, and I think it's a
21 quite reasonable statement.

22 The Big Bang might ultimately be beyond scientific
23 explanation. We have no explanation for the Big Bang right
24 now. Many people, including people who don't like it, see
25 theological and philosophical implications in the Big Bang

1 theory. I put intelligent design in the same category, as
2 I've mentioned before in my testimony.

3 We do not have any unintelligent explanation for
4 life. We don't have any current explanation. We don't rule
5 it out, but ultimately we might not have one. And
6 ultimately it might not have -- might not receive a
7 scientific explanation. And if that's the case, well then
8 that's the case, we just have to follow the evidence where
9 it leads.

10 Q Just so we're clear, the Big Bang has been accepted
11 by significant portions of the scientific community?

12 A That was about three decades or so after it was
13 first discussed by George Lemaitre, a Belgium priest, who
14 first proposed it based on observations of the red shift of
15 the galaxies and apparent expansion of the universe. But
16 for the first several decades it was extremely controversial
17 and not well accepted.

18 Q But the answer is yes, it has been well accepted?

19 A After three decades it became accepted.

20 Q And intelligent design, now after several decades
21 of its modern era, has not been accepted, in fact, it's
22 regularly rejected?

23 A Intelligent design certainly is not the dominant
24 view of the scientific community, but I'm very pleased with
25 the progress we're making. As I've tried to make clear in

1 my testimony, although some -- many scientists do not like
2 it, if you look at their statements, you do not see any
3 scientific evidence which, when examined closely, is -- when
4 examined closely, shows that intelligent design is
5 incorrect.

6 Q Okay. It's not been well accepted or indeed
7 accepted by anything but more than a small minority of
8 scientists.

9 A Well, again, I'm afraid I'm -- I think the
10 situation is a whole lot more complex than perhaps you do.

11 Statements of large scientific organizations do not
12 represent the views of their members, other than -- much
13 like statements of other organizations might represent all
14 the views of all their members. And I think that if you
15 actually surveyed a large number of scientists and you ask
16 them carefully what they thought about how one could explain
17 life, I think that a significant fraction would indeed say
18 that something like intelligent design was plausible.

19 Q That's just speculation on your part?

20 A Well, it's based on some experience that I've had
21 talking with scientists in many of these discussions that I
22 have. Many scientists have misimpressions of intelligent
23 design, and when they I speak with them, they oftentimes see
24 that it's more -- has a more compelling argument than is
25 oftentimes presented in publications, magazines, and so on.

1 So it's based on some experience.

2 MR. ROTHSCHILD: This would be a good time to
3 break, Your Honor.

4 THE COURT: Are you going to pick up more cross
5 tomorrow?

6 MR. ROTHSCHILD: Yes.

7 THE COURT: All right. We'll recess then for the
8 day at this point, the hour being almost at 4:30, and we
9 will reconvene at 9 a.m. tomorrow and continue with
10 Mr. Rothschild's cross examination of the witness.

11 We're in recess. Thank you.

12 THE DEPUTY CLERK: All rise.

13 (4:28 p.m., court adjourned.)

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s/Joan D. Spearing
Joan D. Spearing, RMR
Official Court Reporter

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