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1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE MIDDLE DISTRICT OF PENNSYLVANIA
3 - - - - -X
4 TAMMY KITZMILLER, et al., :
5 Plaintiffs, : Case No.:
6 vs. : 04-CV-2688
7 DOVER AREA SCHOOL DISTRICT AND :
8 DOVER AREA SCHOOL DISTRICT : (Hon. Judge Jones)
9 BOARD OF DIRECTORS, :
10 Defendants. :
11 - - - - -X

12
13 Deposition of JOHN F. HAUGHT, PH.D.,
14 Washington, D.C.
15 Wednesday, June 1, 2005
16 9:05 A.M.

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18
19 Job No.: 1-55231
20 Pages: 1 - 297
21 Reported by: Dana R. Craddock, RPR
22

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1 Deposition of JOHN F. HAUGHT, PH.D., held
2 at the offices of:

3
4 Pepper Hamilton, LLP
5 600 14th Street, Northwest
6 Hamilton Square
7 Washington, D.C. 20005
8 (202) 220-1200
9

10 Pursuant to agreement, before Dana R.
11 Craddock, RPR, Court Reporter and Notary Public in and
12 for the District of Columbia.

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1 A P P E A R A N C E S

2
3 ON BEHALF OF THE PLAINTIFFS:
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20
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1 P R O C E E D I N G S
2 JOHN F. HAUGHT, PH.D.,
3 having been sworn, testified as follows:
4 EXAMINATION BY COUNSEL FOR THE DEFENDANTS
5 BY MR. THOMPSON:
6 Q Good morning, Professor Haught. As you
7 know, my name is Richard Thompson, and we've met
8 previously, and I would like to ask if you've ever
9 been deposed before in a court case.
10 A No, this is my first time.
11 Q Okay. And you've just been sworn to tell
12 the truth, the whole truth and nothing but the truth?
13 A Yes.
14 Q You understand the meaning of that oath?
15 A Yes.
16 Q It's the same as if you were in a
17 courtroom --
18 A Yes.
19 Q -- in front of a judge. Because of the
20 importance of telling the truth, the whole truth and
21 nothing but the truth, I would like you to just follow
22 a few rules I think that are basically common to all

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1 depositions. And that is, you have to speak orally;
2 you can't shrug or nod your head because the court
3 reporter cannot take down a shrug or a nod of the
4 head; that if you don't understand a question that I
5 ask you or don't hear it, please ask me to repeat the
6 question or rephrase it and I will try my best to do
7 that. Do you understand that?

8 A Yes.

9 Q You understand that the deposition is a way
10 of the defendants finding out the basis of your expert
11 opinion?

12 A Yes.

13 Q And that the answers that you give me will
14 be answers that we may use in court?

15 A Yes.

16 Q The rules take a -- regarding depositions
17 are a little more lenient than the rules in actual
18 court testimony, and, so, the basis is that you answer
19 the questions I ask you unless your lawyer directs you
20 not to answer it. At that time you follow the
21 direction of your lawyer. If you need to take a break
22 at any time, please say you need to take a break. I'm

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1 sure we will take periodic breaks anyway, but if you
2 need to take a break, please first finish the
3 question -- answering the question, and then we can
4 take the break then.

5 Are you taking any kind of medication or
6 drugs that would in any way detract from your ability
7 to understand the questions?

8 A No.

9 Q Okay. Is there any reason that you can
10 think of that you will not be able to truthfully
11 answer the questions?

12 A No.

13 Q Okay. So if you answer a question that I
14 ask, then I will assume that you've heard the question
15 and understood it; is that correct?

16 A Yes.

17 MR. WILCOX: Objection. He might not
18 have understood it the way you understood it.

19 MR. THOMPSON: Right.

20 BY MR. THOMPSON:

21 Q During the deposition your counsel will
22 object, and that is for the Record, and normally you

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1 will continue to answer the question unless your
2 counsel directs you not to.

3 The reason why you're here this morning is
4 because you have prepared an expert report in support
5 of the plaintiffs' case; do you understand that?

6 A Yes.

7 Q And the plaintiffs are several parents who
8 have filed a lawsuit against the Dover School
9 District; do you understand that?

10 A Yes.

11 Q And the Dover School District is considered
12 the defendant in this case; do you understand that?

13 A Yes.

14 Q Have you talked to anyone in preparation for
15 your deposition this morning?

16 A No.

17 MR. WILCOX: Excuse me. You talked
18 with me.

19 THE WITNESS: I thought you meant this
20 morning did I talk --

21 BY MR. THOMPSON:

22 Q Well --

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1 A -- did I talk to anyone --

2 Q -- "this morning" --

3 A -- this morning.

4 Q In preparation for your deposition this
5 morning --

6 A Oh, okay.

7 Q -- have you talked to anyone? It could have
8 been yesterday or the day before.

9 A Yes, I talked to Mr. Wilcox.

10 MR. THOMPSON: I would like to have
11 marked as Defendants Exhibit 1 a document entitled,
12 John F. Haught Curriculum Vitae, and I've made copies
13 for you and you.

14 (Defendants Deposition Exhibit Number 1 was
15 marked for identification and attached to the
16 transcript.)

17 BY MR. THOMPSON:

18 Q I want to show you Defendants Exhibit 1 and
19 ask if you could identify that?

20 A Yes.

21 Q And what is it?

22 A It's my curriculum vitae.

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1 Q And you prepared that?

2 A I prepared this, yes.

3 Q Okay. Would you please review it, and I'm
4 going to ask you whether that is an accurate depiction
5 of your history -- of your career and the books that
6 you've written?

7 A As far as I know, yes.

8 Q Okay. You were born on November 12th, 1942?

9 A Yes.

10 Q Okay. And you're married?

11 A I'm married.

12 Q And what was the date of that marriage, if
13 you recall?

14 A September 4th, 1967.

15 Q Okay. And you have two children?

16 A Two children.

17 Q And what are their ages?

18 A Thirty -- one was born in 1970 and the other
19 1973, so 34 and 32.

20 Q Okay. Do you recall whether they went
21 through a public high school or whether they went to a
22 private school?

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1 A They both went to private high schools,
2 public grade schools.

3 Q Okay. Private high schools, do you remember
4 the name of the high schools?

5 A The older son went to Gonzaga High School in
6 Washington and the other son went to Bishop O'Connell
7 in Arlington, Virginia.

8 Q Are those both Roman Catholic?

9 A Both of those are Roman Catholic schools.

10 Q Have you ever been a party to a lawsuit
11 before?

12 A No.

13 Q Okay. Have you testified -- have you ever
14 testified in a trial --

15 A No --

16 Q -- before?

17 A -- I haven't.

18 MR. WILCOX: Just off the Record for a
19 second.

20 (Discussion off the Record.)

21 BY MR. THOMPSON:

22 Q What is your current occupation?

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1 A I am a writer and speaker -- lecturer. I
2 have just retired from teaching at Georgetown.
3 Q And what was the date of that retirement?
4 A It will be -- well, the official date was
5 May -- no, I'm sorry, August of 2000 and -- what's
6 the -- 2004.
7 Q 2004?
8 A Uh-huh.
9 Q Prior to your retirement from Georgetown,
10 what was your position there?
11 A I was the Healey Professor of Theology,
12 Thomas Healey Professor of Theology.
13 Q And how long had you held that position?
14 A That particular chair only one year.
15 Q And before then?
16 A Before that I was the Landegger
17 Distinguished Professor from 1996 to 2002.
18 Q And that was also as a professor of
19 theology?
20 A Yes.
21 Q Okay. When were you contacted by the
22 plaintiffs to be an expert in this case?

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1 A I believe it was in February of 2005.
2 Q And who --
3 A Possibly earlier. I don't remember.
4 Q Who contacted you?
5 A Steve Harvey.
6 Q And do you know who he is?
7 A He's a lawyer for Pepper Hamilton.
8 Q Had you had any prior relationship with
9 Mr. Harvey?
10 A None whatsoever.
11 Q Okay. What were you asked to do by
12 Mr. Harvey?
13 A To be a witness for this particular case.
14 Q Did he ask you to be a witness in any
15 particular area of the case or just be a witness in
16 this case?
17 A Well, to -- to be a witness against -- in
18 the Civil Liberties or ACLU case against the Dover
19 School Board.
20 Q And did he tell you how you could help in
21 that case?
22 A I'm not sure that he ever said so

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1 explicitly; I can't recall. But my assumption was he
2 thought that I could be a -- a witness in making a
3 case against the Dover School Board's advice that
4 students be exposed to intelligent design theory as an
5 alternative to evolutionary biology as usually taught
6 in the schools.

7 Q Well, why did you agree to do that?

8 A I did it out of principle that -- a deep
9 principle that I have that the school board was
10 implicitly confusing issues in science and religion
11 that should be carefully distinguished and that, in
12 effect, the school board was proposing that science
13 classrooms in Pennsylvania and presumably elsewhere
14 should, in the interest of what they referred to as
15 balanced treatment, give the students exposure to what
16 they consider to be alternatives to evolutionary
17 biology but which I consider to be not alternatives to
18 biology but alternatives to a specific ideology.

19 Q Did you come to that conclusion prior to
20 agreeing to be an expert?

21 A Yes, I had written about intelligent design
22 and its relationship to the science and religion issue

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1 for a number of years, particularly starting in 1995,
2 but more recently in my books God After Darwin and
3 Deeper Than Darwin as well as in many lectures and
4 other articles and book chapters that I've
5 contributed.

6 Q Is it an accurate statement, then, that you
7 became involved in a substantial degree with the issue
8 of intelligent design theory in 1995?

9 A I started probably before that, but
10 especially since 1995, yes.

11 Q How long before that had you become familiar
12 or involved in studying the issue of intelligent
13 design theory?

14 A Well, since I've taught science and religion
15 for 35 years, I have been implicitly and less
16 intensely, but, nonetheless, substantively involved in
17 discussions of intelligent design for many years.

18 Q How many years?

19 A I would say probably 20 -- 15 to 20.

20 Q At the earliest part of your interest in
21 intelligent design theory 15 to 20 years ago, who were
22 the proponents of intelligent design at that time?

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1 A Well, the term intelligent design theory was
2 not in vogue at that time, but substantively there
3 have always been what we would call proponents of
4 natural theology going back a number of centuries, in
5 fact, but I can't recall specifically what the names
6 of the people were because it was just one general
7 alternative in a wide spectrum of approaches in
8 science and religion.

9 Q When is the first article or book you
10 published that touched upon intelligent design theory
11 in any way?

12 MR. WILCOX: Objection, vague. Could
13 you use a more specific phrase than "touched upon"?
14 Do you mean mentioned intelligent design?

15 MR. THOMPSON: Thank you.

16 BY MR. THOMPSON:

17 Q Mentioning intelligent design.

18 A I believe the first explicit mention of that
19 formal term was in my book *God After Darwin*; although,
20 it's possible -- I don't recall that I mentioned it in
21 an article published in a book by the Vatican Press or
22 the -- a book published jointly by the Center for

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1 Theology and Natural Sciences and the Vatican
2 Observatory. I can't remember the title of the
3 collection, but it was only a year or so before the
4 *God After Darwin* book came out, and I substantively
5 made that particular essay a chapter in my book *God
6 After Darwin*.

7 Q When was *God After Darwin* authored?

8 A It was published in 1999.

9 Q Now, you mentioned before that you had
10 discussed the concept, I guess is the word, of
11 intelligent design without using the words intelligent
12 design theory; is that what you said earlier?

13 A Yes. I'm not sure that I actually wrote
14 about it, but I discussed it in my classes for 20 or
15 so years as one approach in a whole spectrum of
16 approaches to evolution.

17 Q What kinds of classes were they?

18 A I taught a course in science and religion
19 for almost 35 years now, and it's in that course
20 especially.

21 Q Did you use any particular textbook?

22 A I used a book -- well, I used -- before 1995

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1 I used five or six different books. One of them was a
2 book called -- this goes back to the '70s -- called
3 Chance and Necessity by Jacques Monod, who represents
4 a materialist interpretation of evolution, but who was
5 implicitly criticizing the intelligent design approach
6 without calling it that back as early as 19 -- late
7 1960s. I used that book.

8 I used a book by Ian Barbour -- that's I-A-N
9 B-A-R-B-O-U-R -- called Issues in Science and
10 Religion.

11 Q Do you remember when that was published?

12 A That was published, I believe, also in the
13 late '60s. I'm going way back here trying to refresh
14 my memory. I used a book by Julian Huxley, Religion
15 Without Revelation. I used --

16 Q When was that published, if you know?

17 A That was published probably back in the
18 '50s. And then most important I used a book by Alfred
19 North Whitehead called Science and the Modern World,
20 and it was probably that text more than any others
21 that led me to an approach which would eventually be
22 opposed to the intelligent design movement.

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1 Q And when was that book published?

2 A First published in 1925.

3 Q And you became aware of it when?

4 A Oh, I became aware of it in the early 1970s.

5 Q Now, you indicated that book was the
6 catalyst for your feelings about intelligent design?

7 A For my feelings about the inadequacy both
8 theologically and scientifically of intelligent
9 design, yes.

10 Q Did any of these other authors that you
11 mentioned -- were they all against intelligent design
12 theory?

13 A Yes. I failed -- I have another book that
14 I -- I didn't finish my list of books.

15 Q I'm sorry. Sure.

16 A Another major book or actually several books
17 were authored by the Catholic geologist and
18 paleontologist Teilhard de Chardin. That's
19 T-E-I-L-H-A-R-D, and then D-E, Chardin, C-H-A-R-D-I-N.
20 And he's been deeply informative or formative, I
21 should say, for my own approach to science and
22 religion as a Roman Catholic, and he would also have

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1 been opposed to the intelligent design approach.

2 Q Now, I think Chardin --

3 A Teilhard.

4 Q How do you pronounce it?

5 A Teilhard. He goes by the name of Teilhard
6 de Chardin.

7 Q Teilhard de Chardin. He was a Jesuit
8 priest; is that correct?

9 A He was a Jesuit priest.

10 Q And he was -- I'm not sure of the right word
11 to use. He was sort of not in the mainstream of the
12 church at the time?

13 A You could say that, yes. He was not allowed
14 to publish his own works in his own lifetime. His
15 religious essays. His scientific essays were not
16 controversial, so he published those. He was one of
17 the top two or three geologists of the Asian continent
18 during his life, but he could not publish his
19 religious writings.

20 Q Now, you also are an author of a newer book
21 on science and religion?

22 A My book Science and Religion was published

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1 in 1995 --

2 Q Okay.

3 A -- God After Darwin in 1999 and Deeper Than
4 Darwin in 2003.

5 Q Are you --

6 A And --

7 Q Well, go ahead. I'm sorry.

8 A And presently I'm working on a book which is
9 going to be called Is Nature Enough, which is a
10 critique of scientific naturalism.

11 Q How far along are you in that book?

12 A I'm pretty far along. I should be finished
13 by the end of the summer.

14 Q Does it deal with intelligent design?

15 A Yes, it does in passing, but my book Deeper
16 Than Darwin has a whole chapter on intelligent design,
17 but this book deals with it in passing. I mention it
18 quite often in the book as an inadequate response to
19 the threat of secular -- of naturalism, rather, in
20 intellectual life today.

21 Q Does the book discuss Darwin's Theory of
22 Evolution?

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1 A Yes.

2 MR. THOMPSON: I would like a copy of
3 the manuscript under the same justification that the
4 plaintiffs have asked for a copy of the manuscript of
5 Bill Dembski's new book, Revising of Pandas and
6 People.

7 MR. WILCOX: Is there a reference in
8 the report to it?

9 MR. THOMPSON: No.

10 MR. WILCOX: I don't think the analogy
11 is quite apt, but I will take it under advisement and
12 discuss it with the witness.

13 THE WITNESS: It's still in the process
14 of being written, so it's not my final thoughts on
15 these issues.

16 BY MR. THOMPSON:

17 Q Have your thoughts been evolving --I hate
18 to use that word -- through time?

19 A Of course. Of course.

20 Q Looking back on the three books that you
21 have published so far, would you change any of the
22 conclusions that you've written?

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1 A I would change some emphases; for example, I
2 have a chapter on information in God After Darwin
3 which has been somewhat coopted, I think erroneously,
4 by Michael Behe and also more recently by William
5 Dembski to be somehow supportive of their position. I
6 would be more careful to phrase my position
7 differently -- a little bit differently today than I
8 did in that book because it -- the way I have it there
9 it could possibly lead to misunderstandings of my
10 basic position.

11 Q Any other changes that you would make in any
12 of the books that you have written, the three books
13 that you've mentioned?

14 A No substantive changes that I can think of
15 at the moment.

16 Q When did you first become interested in the
17 theory of evolution?

18 A Back when I was about 23 years old when I
19 first read Teilhard de Chardin whose view was that
20 nothing in biology can be understood apart from
21 evolution, a view which had also been expressed by
22 Theodosius Dzhohzhansky, a Russian Orthodox scientist.

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1 MR. THOMPSON: I would like to have
2 this marked Defendants Exhibit 2.

3 (Defendants Deposition Exhibit Number 2 was
4 marked for identification and attached to the
5 transcript.)

6 BY MR. THOMPSON:

7 Q Professor Haught, would you look at
8 Defendants Exhibit 2 and see if you can identify that?

9 A This is the report that I submitted in the
10 proceedings in the United States District Court for
11 the Middle District of Pennsylvania, Tammy Kitzmiller,
12 et al. versus Dover Area School District and Dover
13 Area School District Board of Directors.

14 Q Is this what we would call your expert
15 report?

16 A It's an abstract of what would be much more
17 detailed.

18 Q And this was the report you prepared in
19 response to the request of attorney Steve Harvey?

20 A Yes.

21 Q Okay. And you are aware that this report
22 could be used by a judge to make a decision in this

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1 case?

2 MR. WILCOX: Objection.

3 THE WITNESS: Yes, I am.

4 MR. WILCOX: Objection.

5 BY MR. THOMPSON:

6 Q First a couple of general questions. Does
7 this report contain a complete statement of all the
8 expert opinions you intend to give in the court case?

9 A Probably not. As I said, this is just a
10 sketch of my -- of what would be a more substantive
11 and more detailed testimony.

12 Q So this is not a complete --

13 A This is not -- not --

14 Q -- opinion that you would --

15 A Of course not.

16 Q -- venture?

17 A No.

18 Q Have you written any supplemental reports?

19 A In relation to this case?

20 Q Yes.

21 A No.

22 Q Have you written any rebuttal reports to any

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1 of the experts that the defendants have provided?

2 A I have not written any, no.

3 Q Okay. Have you seen any of the reports that
4 the expert -- experts for the defendants have written?

5 A Yes, and I read through most of them; some
6 of them more hurriedly than others.

7 Q When did you do that?

8 A I started doing that about two weeks ago.

9 Q Okay. So your expert report, Exhibit 2, was
10 written prior to the time you saw any of the other
11 expert reports?

12 A Yes, I had seen no others at the time.

13 Q Okay. What about the experts on your side,
14 the expert opinions that the plaintiffs had; have you
15 seen any of their reports?

16 A I've read hurriedly Pennock's. I'm already
17 familiar with Kenneth Miller's approach. For many
18 years I've studied his work. Who else is there?

19 Q Barbara Forrest?

20 A I read through hers, also, yes.

21 Q Okay. Any others? Shallit, Professor

22 Shallit?

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1 A No, I did not read Shallit's.

2 Q His is a rebuttal report.

3 A I can't remember.

4 Q Okay. At the time that you prepared this
5 report, were you aware of the other expert reports,
6 both plaintiffs' and defendants'?

7 A No, I knew vaguely that some people had been
8 solicited to write other expert reports, but I did not
9 know who they were or what they were going to say.

10 Q Did you contact any of the other experts
11 prior to writing this report?

12 A I did not.

13 Q Okay. So you cannot say today or you said
14 to the contrary that this report does not contain all
15 of your opinions that you would venture in this case?

16 A No, I've written a number of pieces; more
17 recently a book called Debating Design. I have a more
18 thorough discussion of intelligent design there than I
19 do here. In my book Deeper Than Darwin I discuss
20 intelligent design in much more depth than I do here.
21 This is only a kind of, as I said, very sketchy
22 representation of what I would say if I had time to

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1 develop this in book-length form.

2 Q Okay. Whether in book-length form or not,
3 I'm interested in what you would be testifying as an
4 expert in court regarding this issue. You're saying
5 that your opinions would be much broader than the
6 opinions that you give in this report?

7 MR. WILCOX: Objection. What he will
8 testify to will be in response to those questions that
9 are put to him, naturally, and those questions will be
10 posed by counsel. To the extent that defense counsel
11 wishes to bring out even further material by
12 cross-examining, defense counsel can do that. But for
13 the witness to sit here today and predict what he will
14 be asked and what he might be asked on
15 cross-examination, I think, is asking too much of the
16 witness.

17 BY MR. THOMPSON:

18 Q Well, you've indicated your opinion would be
19 much broader than what you've prepared in your report;
20 is that correct?

21 A The opinions that I have about intelligent
22 design have been developed -- developing for a number

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1 of years.

2 Q I'm talking about your expert report.

3 A My expert report I would say is accurate but
4 not adequate as far as my own understanding of and
5 criticism of intelligent design is concerned.

6 Q What about as it relates to the particular
7 case that we're involved with?

8 MR. WILCOX: Objection, vague.

9 BY MR. THOMPSON:

10 Q Do you think it's -- do you think this -- do
11 you think your report is adequate for the particular
12 case that we are involved with today?

13 MR. WILCOX: Objection. That calls for
14 a legal conclusion as to what's required under Rule
15 26. This expert is not here as a legal expert.

16 MR. THOMPSON: I didn't ask a legal
17 conclusion.

18 BY MR. THOMPSON:

19 Q I asked your own opinion as an expert in
20 this area.

21 A Is it adequate?

22 Q Yes.

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1 MR. WILCOX: Objection.

2 THE WITNESS: As I've been saying --
3 well . . .

4 BY MR. THOMPSON:

5 Q Go ahead and answer it unless your --

6 A As I've been saying, it's an accurate but
7 not an adequate representation of the full view of the
8 opinions that I have about the topic.

9 Q Okay. What about the bases; have you
10 provided all the bases that you have for your opinion
11 that you've written in this expert report?

12 A No, because I did it in such a way as to
13 make it readable and presentable to people who are not
14 experts in theology, so I've left out a considerable
15 amount of theological background out of which I am
16 issuing this report.

17 Q And you say you left out a considerable
18 amount?

19 A I left out most of my theology of evolution
20 in this report.

21 Q How long did it take for you to write this
22 report?

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1 A About a week. I was not working at it
2 steadily, but I had it pretty well worked out within a
3 week.

4 Q Did you refer to any other documents as you
5 prepared this report?

6 A Did I consult any --

7 Q Yes, or consult or refer.

8 A -- consult any other documents?

9 Well, I had -- I consulted some sections of
10 Pandas and People that had been brought to my
11 attention.

12 Q By whom?

13 A By Steve Harvey whose --

14 Q Did you read the entire book?

15 A I did not read the entire book. I can tell
16 you that I have the book, but I started to read it and
17 immediately considered it to be a waste of my time.

18 Q Why is that?

19 A Because there are much more sophisticated
20 presentations of the intelligent design position that
21 I was already familiar with.

22 Q In preparing for the report did you look at

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1 any other documents that were provided for you by
2 Mr. Harvey or the law firm representing --
3 A Not that I recall --
4 Q -- the plaintiffs?
5 A Not that I recall at the moment.
6 Q Okay. Did you look at the complaint that
7 was filed in the lawsuit?
8 A I did read the complaint.
9 Q Okay. Did you look at the answer?
10 A And the answer as well.
11 Q Did you look at the policy itself?
12 A Was that -- if that was included in the
13 document that I was given, I -- I'm assuming that I
14 did. I read the whole document that -- that was -- I
15 don't know whether the policy -- whether --
16 Q Did you look at a particular document that
17 was -- that was a two-paged document that was
18 entitled -- in fact, let's just mark it.
19 MR. THOMPSON: Would you mark this?
20 (Defendants Deposition Exhibit Number 3 was
21 marked for identification and attached to the
22 transcript.)

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1 THE WITNESS: I read everything that
2 Steve gave me.
3 BY MR. THOMPSON:
4 Q Okay. I want you to look at that. It's
5 Defendants Exhibit 3. It's entitled Board Press
6 Release for Biology Curriculum, 11-19-04, Re-posted
7 12-14-04.
8 A (Witness reviews document.) I can't recall
9 right now whether I actually read this or not.
10 Q Okay.
11 A But if it was included in the packet of
12 material that Steve Harvey made available to me, then
13 I did read it because I read everything in that
14 packet.
15 Q When were you given that packet?
16 A I think it was in February, some time in
17 February or -- yes, February or March. I can't
18 remember exactly.
19 Q Can you describe the packet in any greater
20 detail?
21 A I just read the -- what I recall in the
22 packet was the complaint and the -- the answer.

00034

1 Q Okay. You don't recall this Defendants
2 Exhibit Number 3?

3 A No.

4 Q Okay. You indicated it took you about a
5 week to write the report but not every hour of the
6 week. How many hours would you say you spent on it?

7 A Maybe 15.

8 Q Okay. Did you receive any compensation for
9 your expert opinion?

10 A No compensation.

11 Q Did you ask for any?

12 A I did not ask for any.

13 Q Why not?

14 A I didn't ask for it because I felt that it
15 was my duty as someone who is a -- considered to be an
16 expert in this area to educate the parties involved as
17 well as -- as well as the public who will read about
18 this case in what I consider to be important
19 distinctions in the field of science and religion,
20 evolution and theology, that are being left out, that
21 are not being made by various parties involved in the
22 case.

00035

1 Q In preparation for your report, did you
2 speak to any school board members of the Dover Area
3 School District?

4 A I did not.

5 Q Did you speak to any of the parents --

6 A I did not.

7 Q -- who are the plaintiffs in the case?

8 A I did not.

9 Q Did you speak to any of the teachers?

10 A I did not.

11 Q Did you talk to any of the students?

12 A I did not.

13 Q Did you read the biology textbook that was
14 being used by the ninth grade biology course?

15 A I did not.

16 Q Did you read any court opinions dealing with
17 the teaching of evolution or intelligent design?

18 A I did not read them in preparation for this
19 particular statement, but I had read over court
20 statements that had been made in the past, in the
21 Arkansas creation trial, for example, and I'm familiar
22 with the ideas of Michael Ruse and Langdon Gilkey, a

00036

1 theologian who was involved in the case, in the
2 Arkansas case, and who was at that time a professor of
3 theology at the University of Chicago but who later
4 came to Georgetown University at my invitation when I
5 was chair of the department.

6 Q Did you read the case of Aguillard versus --
7 MR. WILCOX: Edwards v. Aguillard.

8 BY MR. THOMPSON:

9 Q -- Edwards versus Aguillard?

10 A I did not read -- I don't recall whether I
11 read it or not.

12 Q That's a United States Supreme Court case
13 that was decided in 1987; do you remember reading that
14 at all?

15 A Not with reference to this case. I probably
16 read it in the past because I've been interested in
17 the issue.

18 Q Okay. But you would not consider yourself a
19 constitutional law expert, would you?

20 A No.

21 Q Did anyone assist you in writing this expert
22 report?

00037

1 A No one -- no, no one.

2 Q Okay. In preparation for your expert
3 opinion did you read any of the Pennsylvania Academic
4 Science Standards?

5 A No.

6 Q Since this report has been written you
7 indicated you read some of the other expert opinion
8 reports from your side.

9 A Yes, I read them very quickly.

10 Q Okay. Do you recall if you disagreed with
11 any of the conclusions?

12 A I did not disagree substantively with any of
13 them. I do have some differences in terms of
14 vocabulary, for example. I do not refer to
15 intelligent design as creationism whereas others do,
16 and I would have emphasized perhaps more clearly than
17 Pennock and Forrest the distinctions between
18 intelligent design and creationism.

19 Q Were there any other disagreements that you
20 could remember?

21 A No.

22 Q Now, do you know any of these people

00038

1 personally, Pennock or Forrest?

2 A I've never met Pennock. I did meet Barbara
3 Forrest when I made a speaking trip to Louisiana just
4 this past month of April after both of us had
5 submitted our reports.

6 Q Where was that? Where did you have that
7 speech?

8 A I gave a talk at Southeastern Louisiana
9 University where she's a professor.

10 Q And what was the title of your speech?

11 A God After Darwin.

12 Q Okay. Now, in your classes at Georgetown,
13 what year students did you have?

14 A All four years.

15 Q Okay. And did you teach more than one
16 class -- one subject matter in those courses? I'm not
17 sure I'm asking that question correctly. Was there
18 more than one course you taught?

19 A Each semester during most of my career at
20 Georgetown we were required to teach three courses, so
21 I taught a course called The Problem of God. I taught
22 a number of other courses which are listed in my

00039

1 resume.

2 Q Okay.

3 A But my main focus throughout my career at
4 Georgetown, and increasingly so as my career went
5 along, was to deal with issues in science and
6 religion.

7 Q Well, do you consider yourself an expert in
8 the field of biology?

9 A No, I'm not an expert in any particular
10 science. I'm not a scientist. I'm a theologian.

11 Q Okay. So I want to go down a list so I make
12 sure. You don't consider yourself an expert in
13 microbiology?

14 A No.

15 Q Chemistry?

16 A No, not -- by "expert" could you clarify
17 what you mean?

18 Q An expert that can -- that either deals with
19 it as a subject matter they teach; that is someone
20 that is involved in the actual field, such as
21 chemistry labs; a man like Behe being involved with
22 studying under a microscope.

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1 A I have no formal postgraduate training in
2 any of the natural sciences. My knowledge of these
3 comes from my own reading of presentations by
4 scientists of their field.

5 Q Okay. Would you consider yourself an expert
6 in mathematics?

7 A No.

8 Q Probabilities?

9 A No.

10 Q Would you consider yourself an expert in the
11 philosophy of science?

12 A I'm more familiar with that and more expert
13 in that than I am with science.

14 Q Are you a member of any organizations of
15 scholars who are philosophers of science?

16 A I'm a member of the International Society
17 for Science and Religion, which includes some of our
18 best philosophers of science.

19 Q But that's not necessarily --

20 A I'm a member --

21 Q Okay. Excuse me.

22 A -- the American Academy of Religion, of the

00041

1 Catholic Theological Society of America. I'm a member
2 of The Center for Process Studies, which includes a
3 lot of philosophies of science.

4 Q Those are organizations that philosophers of
5 science may belong to but those are not organizations
6 primarily for philosophers of science; is that
7 correct?

8 MR. WILCOX: Objection.

9 THE WITNESS: That's correct.

10 BY MR. THOMPSON:

11 Q Okay. What about philosophy of education;
12 do you consider yourself an expert in the philosophy
13 of education?

14 A I'm not an expert, but because of my reading
15 of Alfred North Whitehead, I have definite opinions on
16 what would constitute good education.

17 Q And those opinions are primarily based on
18 your reading of that one book?

19 A The one book of Whitehead's? No, I've read
20 many books of Whitehead.

21 Q Okay. But those -- the books of
22 Whitehead --

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1 A Yes.

2 Q -- are the basis for your expertise in
3 education?

4 A I didn't use the term expertise. I said my
5 knowledge, my understanding of what would constitute
6 good education.

7 Q Okay. Do you consider yourself an expert on
8 genetics?

9 A No.

10 Q Okay. Would you consider Michael Behe a
11 scientist?

12 A Yes, I do.

13 Q Would you consider Bill Dembski a scientist?

14 A I think he would be a mathematician more
15 than a scientist.

16 Q What is your definition of a scientist, I
17 guess I should ask?

18 A A scientist is someone who is trained in
19 scientific method and who applies it in teaching,
20 writing and experimentation.

21 Q Do you know Bill Dembski?

22 A I have met him and had amiable conversations

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1 with Bill Dembski.

2 Q You've been jointly interviewed, as I
3 recall?

4 A Yes. We were together at Oxford University
5 several summers ago, and we had a joint presentation
6 in which we presented our own positions and then
7 afterwards we conducted an interview for theology and
8 science.

9 Q Based upon your contacts with Mr. Dembski,
10 do you consider him a credible mathematician?

11 A Yes.

12 Q Based on your contacts with Michael Behe, do
13 you consider him a credible biologist?

14 A When he's doing his biology, I consider him
15 credible. When he's doing philosophy of science, I do
16 not.

17 Q Okay. He has written a book review on one
18 of your books. I'm not sure which one it was now.

19 A It was God After Darwin.

20 Q God After Darwin. And as I recall, he
21 basically -- one of the conclusions he had was that
22 you're a -- you're an intelligent design theorist.

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1 A Well, as I said earlier, he focused in on
2 that chapter which I would -- if I had a chance to do
3 it over, I would probably change some of the wording
4 so that he would not see myself as an advocate of
5 intelligent design.

6 Q What was the basis for his opinion?

7 A The basis for his opinion was that I had
8 presented the informational aspect of nature as
9 distinct from the material and energetic components of
10 nature, and since "information" is a term that can
11 easily be conflated, I think quite wrongly, with what
12 intelligent design means by design, he considered my
13 approach to be not far from his camp. And I did
14 respond to that article, that review that he wrote,
15 and in my response I referred to my Whiteheadian
16 approach as one that would introduce the notion of
17 novelty along with the notion of order as
18 indispensable to understanding the natural world.

19 Q That was back in 1999 as I recall; is that
20 correct?

21 A 1999 or 2000. I can't remember exactly the
22 date.

00045

1 Q In fact, that exchange between you and Behe
2 was quite civil as I recall reading?

3 A I try to be civil in all my exchanges.

4 (Recess -- 9:54 a.m.)

5 (After recess -- 9:58 a.m.)

6 BY MR. THOMPSON:

7 Q Are you familiar with the book written by
8 Michael Behe entitled Darwin's Black Box?

9 A Yes, I've read that book.

10 Q And, in fact, isn't that a book that you
11 recommend to your students?

12 A I don't have them read the book, but I have
13 them read essays that reflect the content of that
14 book.

15 Q Okay. Could you describe what the book
16 really is about?

17 A Very briefly it's an attempt to show the
18 Darwinian theory is incapable of adequately explaining
19 certain biochemical phenomena, subcellular phenomena
20 that possess what Behe refers to as irreducible
21 complexity.

22 Q And you are familiar with that phrase

00046

1 irreducible complexity?

2 A Yes.

3 Q And what does it mean to you?

4 A Irreducible complexity is the characteristic
5 of any system made up of multiple components in which
6 if any particular component were absent the particular
7 system could not function in such a way as to be able
8 to be selected by natural selection. The idea of the
9 book -- the argument of the book is one that appeals
10 to a statement by Charles Darwin himself; that if it
11 could be shown that evolution occurs in any other way
12 than by minute, incremental, gradual steps, that his
13 theory would fall apart. And Behe's point is that
14 subcellular mechanisms which exhibit irreducible
15 complexity could not possibly have been put together
16 by small, gradual, incremental, minute stages of
17 development, and, therefore, some other explanation
18 than Darwinian explanation is needed to explain the
19 irreducible complexity.

20 Q One of the biological matters that he talks
21 about is the bacterial flagellum; is that correct?

22 A Yes.

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1 Q And he talks about the bacterial flagellum
2 as a biologist; is that correct?

3 A As a biochemist.

4 Q Biochemist, right. And do you recall what
5 he says about that?

6 A Well, he sees it as analogous to an outboard
7 motor; that the parts are coordinated in such a way
8 that the only conclusion he can draw as far as
9 explaining it is that some form of what he calls
10 intelligent design was operative in its manufacture.

11 Q And he also discusses other biological --

12 A Phenomena.

13 Q -- phenomena; is that correct?

14 A Yes.

15 Q In this book, in this book.

16 A Yes.

17 Q Do you remember the others?

18 A The eye blood-clotting mechanism in
19 particular.

20 Q And he discusses those in scientific terms;
21 is that correct?

22 A He does discuss them in scientific terms up

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1 to a point, but he explains them in nonscientific
2 terms ultimately.

3 Q And the explanation in nonscientific terms
4 is what?

5 A Is the use of the word intelligence in
6 intelligent design, which is not considered to be by
7 conventional science an explanatory category at least
8 as far as the self-limiting discipline of natural
9 science is concerned.

10 Q Now, as I recall, in response to his review
11 of your book, *God After Darwin*, you responded back and
12 indicated that you enjoyed reading Darwin's *Black Box*;
13 is that accurate?

14 A Yes, I enjoy reading Friedrich Nietzsche and
15 atheistic tracts, as well.

16 Q However, you also said, and I quote, I make
17 sure that my students become familiar with its
18 argument and I suspect that discussion of it has
19 enriched many science and religion courses in the last
20 few years --

21 A Yes.

22 Q -- end of quote?

00049

1 A Yes.

2 Q Is that a statement that you made?

3 A Yes. Can I explain that statement?

4 Q Yes, please do.

5 A In the same sense -- enriched in the same
6 sense as my students in *The Problem of God* course are
7 enriched by reading the writings of atheists like
8 Sigmund Freud, Albert Camus and Jean-Paul Sartre,
9 because it invokes a critical sense in the students
10 that enriches their lives. So the enrichment refers
11 not to the possibility that they're enriched by the
12 specific content, that they appropriate that content
13 as their own thinking, but that it places them in
14 conversation with other positions that allows them to
15 develop a critical sense and develop their own
16 positions.

17 Q That's the purpose of education, is it not?

18 A That's one of the purposes of education.

19 Q Yes. It encourages critical thinking?

20 A Yeah. You have to remember I'm doing this
21 in a theology class and not a science class. In
22 science classes I would not consider it appropriate to

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1 bring in intelligent design as an alternative -- as a
2 scientific alternative or allegedly scientific
3 alternative to evolutionary biology.

4 Q Wouldn't it provide the same kind of
5 critical thinking mechanism?

6 A It would if it were done in a course on
7 critical thinking, but it could be very confusing to
8 students if it were presented as an alternative to
9 scientific ideas.

10 Q Well, is critical thinking only a matter of
11 concern for educators in courses on critical thinking?

12 A No, but there are different kinds of
13 critical thinking following different methods. One
14 example of critical thinking is learning to
15 distinguish between scientific method and
16 philosophical and ideological and theological
17 assumptions of beliefs.

18 Q Well, we'll get to that in a moment, but
19 didn't Darwin himself in The Origin of Species discuss
20 intelligent design?

21 A Implicitly, yes.

22 Q And he was comparing and contrasting

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1 intelligent design with his own theory of evolution,
2 was he not?

3 A He considered the biological record to be
4 one that placed in question a certain type of natural
5 theology represented by William Paley and earlier by
6 other philosophers and theologians. He did not deny
7 the existence of design; adaptive design was something
8 that he was able to detect as a science -- scientist.
9 But in explaining adaptive design, he no longer
10 considered it essential to refer to directly
11 theological divine intervention as its immediate
12 explanation.

13 Q Well, Paley talked about the blind -- talked
14 about the watchmaker; is that correct?

15 A Yes.

16 Q Okay. And on the basis of the watchmaker
17 analogy, he came to the conclusion there was a design.
18 On the other hand, Darwin looked at that and said, it
19 is not design; it's natural selection; correct?

20 A What Darwin was able to discover was that
21 the immediate proximate explanations of the adaptive
22 design included many, many years, first of all, deep

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1 time -- lots of time had to be involved. There had to
2 be persistent law, which he referred to as natural
3 selection, and there had to be variations which
4 provided the raw material for natural selection, and
5 these variations as far as he could tell are random in
6 the sense that they are not directed by any
7 intelligent design.

8 Q And, again, going back to the question that
9 started all of this, is Darwin actually in his book to
10 prove natural selection many times made reference to
11 design?

12 A Uh-huh. Yes.

13 Q Okay. And you see something wrong with that
14 in classes today --

15 MR. WILCOX: Objection.

16 BY MR. THOMPSON:

17 Q -- this analytical thinking that would go
18 on?

19 MR. WILCOX: Objection. You should
20 answer.

21 THE WITNESS: Okay. The Origin of
22 Species, like many discursive scientific texts, often

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1 includes philosophical asides which are not strictly
2 part of scientific experimentation but which are
3 interpretations, and I have no doubt that what --
4 Darwin himself, because he was -- his -- he cut his
5 theological teeth on William Paley and natural
6 theology, was mixing in philosophical and sometimes
7 theological statements with the empirical information
8 that had led him to his evolutionary theory. And at
9 times he is stepping out of his shoes as a strict
10 scientist and he is presenting his ideas in the
11 context -- in a larger intellectual context, that of
12 the discussion that was going on at the time between
13 advocates of William Paley on the one hand and
14 advocates of a more -- more or less agnostic or
15 naturalistic understanding of evolution on the other.

16 BY MR. THOMPSON:

17 Q Assuming that that's what he was doing, did
18 that in any way affect the validity of his theory?

19 A You can distinguish -- if you can read the
20 book carefully, you can distinguish the scientific
21 aspects from the philosophical interpretations that
22 sometimes he gets in -- philosophical discussions that

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1 he sometimes becomes involved in.

2 Q He, in fact, mentioned the creator, did he
3 not, in his last paragraph of the book?

4 A Yes, he did, and that's a good example of
5 what I mean of his stepping out of the shoes of a
6 strict scientist in making such a statement. That is
7 not a scientific statement. That's a reflection by a
8 deep and sensitive man on the implications, the wider
9 implications of what he had discovered.

10 Q Well, because he makes that one statement at
11 the end of the book, would you then indicate that that
12 book does not belong in a science class?

13 A Darwin himself regretted making that
14 statement later on.

15 Q Okay. But I am asking you the question.

16 A Yes. I do not think that a science class or
17 scientific method should ever bring in the notion of
18 God. That's not to say that a wider education
19 shouldn't bring it in, but science and science classes
20 themselves should not bring in theological ideas
21 including intelligent design.

22 Q Well, that gets me to what your definition

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1 of science is. What is it?

2 A Science is a self-limiting method which
3 seeks to understand natural phenomena at a certain
4 level of observation and understanding, and it's a
5 method which self-consciously leaves out any -- any
6 invoking of notions of value, meaning, purpose, God or
7 intelligence and attempts to understand events in
8 terms of their efficient and material causes resorting
9 to hypotheses and theories to make sense of the data
10 that is experienced in any particular field,
11 subjecting these hypotheses and theories to ongoing
12 inquiry and criticism as new data come in from those
13 who are working in the field.

14 Q That has not always been the definition of
15 science, has it?

16 A People are free to define terms the way they
17 want to. There are people who talk about, for
18 example, a sacred science. Theology was sometimes
19 referred to as a science from the Latin word scientia,
20 which means knowledge, but increasingly in modern
21 times, since the 17th century, what we refer to as
22 natural science, I think, is pretty close to the

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1 definition that I just gave.

2 Q Some philosophers of science say that those
3 kinds of definitions are arbitrary demarcations. Do
4 you know of any of those philosophers of science?

5 A There are some philosophers of science who
6 are experts in what they call the field of sociology
7 of knowledge which emphasize the historical and
8 cultural and specifically conditioned -- culturally
9 conditioned, historically conditioned character of all
10 human knowledge. What these philosophers are saying
11 applies not to science but to any kind of knowledge;
12 that we want to understand the knowing process today,
13 we have to take into account the historical, social,
14 cultural context of knowledge, and that includes the
15 natural sciences.

16 Q So the way you would distinguish science
17 from not science is the methodological activities?

18 A We --

19 MR. WILCOX: May I have it understood
20 that when you are now using the word science you're
21 referring to natural science; you're not referring to
22 social science, economic science?

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1 BY MR. THOMPSON:

2 Q I'm not sure. I guess that's a part of the
3 point of what is science.

4 A I'm referring to the natural sciences
5 because that's the issue involved in this particular
6 case. I'm not talking about social sciences.

7 Q Well, let's go -- let's talk about natural
8 science. What about Larry Laudan; are you familiar
9 with him?

10 A No.

11 Q Okay. Science is a search for truth; is
12 that too general?

13 A That's entirely too general. So is theology
14 a search for truth, so is philosophy a search for
15 truth, so is poetry.

16 Q Do you agree or disagree with the statement
17 that science is argumentation?

18 A All of our disciplines flow from what I
19 would call the desire to know, but after we have said
20 that, we have to recognize that the desire to know
21 reality flows down different channels, and one method
22 will leave out things that others bring in.

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1 One of the characteristics of natural
2 scientific method is that it self-consciously leaves
3 out certain kinds of questions that people ask, such
4 as what is the meaning of my life; why is there
5 anything at all rather than nothing; is there purpose
6 in the universe?

7 Science -- natural science -- and by
8 "science," I mean natural science -- science
9 deliberately and self-consciously, since the 17th
10 century in the case of a vast majority of people who
11 call themselves scientists, has deliberately and
12 self-consciously and methodologically left out certain
13 types of questions which would confuse and interfere
14 with what is specifically scientific method. And one
15 of the things that they leave out is the notion of
16 intelligence as an explanatory category.

17 This is not to deny that intelligence at
18 some level could be brought in in a different kind of
19 search for understanding; for example, I, myself,
20 believe that at a certain level of understanding and
21 inquiry we can and I believe we should appeal to some
22 notion of divine intelligence -- I would prefer to say

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1 divine wisdom in making the universe the kind of
2 universe that it is, but it is definitely not the
3 business of science itself -- natural science itself
4 to enter into that discussion.

5 Q But there's some people, let's say, as Bill
6 Dembski and Michael Behe who disagree with that
7 definition of science; is that true?

8 A Yes, that's because they are seeking to
9 redefine science in what I consider to be a
10 prescientific way. They're conflating science with
11 simple search for truth, and while science is one way
12 of searching for truth, it's not the only way. They
13 are ending up conflating -- by that by which I mean
14 confusing -- a broader quest for truth, which is
15 legitimate, which is something I myself am involved
16 in, with the kind of self-limiting search for truth
17 that's characteristic of scientific method.

18 Q Can you use a scientific method to prove a
19 scientific method?

20 A Certainly not. Scientism, which is the
21 belief that science is the only road to truth, is an
22 ideology. It's a belief. It's a belief, moreover,

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1 which often leads to materialism, which is also a
2 belief, a belief that matter is all there is. Those
3 are ideologies which are not part of science which
4 should not be part of a scientific classroom either.

5 Q Would it be a fair statement to say, then,
6 the scientific method that you have proposed is also a
7 hypothesis?

8 MR. WILCOX: Objection. That's so
9 vague. When you say the scientific method that he has
10 proposed, I have no idea what you're --

11 THE WITNESS: Scientific -- yeah,
12 that's a confusing way to put it.

13 BY MR. THOMPSON:

14 Q Well, you defined science in a couple of
15 long paragraphs.

16 A Science is a method which resorts to
17 hypotheses, but you don't identify the method with the
18 hypothesis.

19 Q Well, again, because there is no scientific
20 way to prove what science is -- what natural science
21 is; is that correct?

22 MR. WILCOX: Objection.

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1 BY MR. THOMPSON:

2 Q It's a self-limiting -- it's what scientists
3 themselves have decided to limit their inquiry in?

4 A The method -- the establishment about the
5 rules for science is not itself the product of
6 science, but it's the foundation of science.

7 Q Who devised this rule in the first place?

8 A The -- the rules themselves came from the
9 fruitfulness that resulted from the application of
10 this method starting with people like Galileo who
11 said, let's not use scripture; let's not resort to
12 church authority; let's not resort to aristotelian
13 ideas; let's resort to experiment and see what we can
14 find out about the natural world.

15 He found out lots of things about the
16 natural world which philosophical, theological and
17 other kinds of religious assumptions had not allowed
18 us to see as clearly, and he set science, therefore,
19 methodologically on a different sort of cognitional
20 foundation from religions and philosophies.

21 And what we're trying to do and what natural
22 scientists are trying to do to this day is to preserve

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1 the purity of that empirical, experiential mode of
2 inquiry that began with Galileo, especially, and
3 earlier on Francis Bacon and others.

4 Q Is this the same as methodological
5 materialism?

6 A You could say, I think, without objection
7 that science is not only methodologically -- I would
8 say physicalist, not materialist, because materialism
9 is a term that is too crude to represent what
10 scientists themselves are finding about the natural
11 world. You could say it's methodologically reductive.
12 You could say it's methodologically, even, atheistic
13 in the sense that it does not allow for the
14 introduction of theological terms, theological
15 explanations in the self-limiting process of looking
16 at the natural world in the manner of scientific
17 method.

18 Q Well, I guess the question, then, comes out,
19 if a scientists like Michael Behe finds that this
20 method cannot explain things like the bacterial
21 flagellum, doesn't he have the right to say, well, the
22 hypotheses now has to be something else and develop a

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1 theory that will explain some of the complexities of
2 the cellular structure that he examines; doesn't he
3 have a right to do that?

4 MR. WILCOX: Objection.

5 THE WITNESS: He has the right as a
6 person to widen the field of searching for the
7 intelligibility of the world that he lives in. He
8 does not have the endorsement of scientific -- the
9 scientific community to bring in what most scientists
10 consider to be a theological explanation to questions
11 that still can be addressed and still have a whole
12 future ahead of them in terms of further scientific
13 specification. To do that as a scientist is
14 objectionable. To do that as a person I do not
15 consider that objectionable at all. In fact, I do
16 that myself.

17 BY MR. THOMPSON:

18 Q Well, my question was what he was doing as a
19 scientist. And I'm saying that he, as a scientist,
20 decided that the theories that science uses, the
21 materialism -- natural materialism cannot fully
22 explain the things that he is seeing under the

00064

1 microscope, so he is developing a new definition of
2 science. As a scientist can he not challenge the
3 hypotheses that the science community has propounded
4 since the 17th century?

5 A Everyone is free to define science the way
6 they want to, but the way in which 99 percent, I would
7 say, of the scientific community understands science
8 is violated by his proposal that science itself can
9 resort to the hypothesis of intelligent design.
10 That's not the business of science itself to do that.

11 As a person, as someone interested in truth,
12 as someone interested in wider explanation, I
13 personally believe that he's certainly justified in
14 doing that, but he's not -- he should not present this
15 as scientific inquiry but as a philosophical and
16 theological inquiry.

17 Q What he is looking at, the bacterial
18 flagellum, the cilium and some other -- the eye and
19 saying that this is evidence of design, is he not?

20 A Yes.

21 Q And because it's evidence of design, there
22 had to be an intelligent designer. That's his theory.

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1 A That's his theory.

2 Q I'm not saying you agree with that.

3 A It's not a scientific theory, but it's his
4 belief.

5 Q Now, evolutionists on the other hand will
6 look at it and say, yes, it does have the appearance
7 of design, do they not?

8 A Evolutionists, many of them, at least, would
9 say that many of the phenomena in life give the
10 appearance of design.

11 Q But they will say that that design is not
12 by -- not caused by an intelligent designer, but
13 caused by natural selection, will they not?

14 A Let me make some distinctions here.

15 Q Okay.

16 A When they -- when they claim that
17 intelligence or wisdom was not a factor at all,
18 absolutely absent in the bringing about of natural
19 phenomena, that's a philosophical, a quasi-theological
20 statement. They, too, scientists themselves, in the
21 same way that intelligent design advocates, sometimes
22 slip into philosophical and metaphysical statements.

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1 There is no basis in science itself for
2 either including or excluding the notion of
3 intelligent design as the ultimate explanation of
4 phenomena. That's my own opinion.

5 Q But there are several prominent Darwinists
6 who do say that the total explanation of this item
7 looking like design is natural selection?

8 A In my book Deeper Than Darwin I take to task
9 not only intelligent design advocates but many of the
10 scientific community who themselves slip into such
11 metaphysical and empirically unsupportable statements
12 as to say that Darwinian mechanisms alone are
13 sufficient to explain totally and exhaustively natural
14 phenomena. When they say that, my emphasis is that is
15 not a scientific statement but a philosophical or a
16 metaphysical assumption.

17 However, the answer for that is not to
18 propose another ideology, which is what intelligent
19 design does. When intelligent design -- people talk
20 about balance treatment in the classroom. What
21 they're trying to balance is one ideology with another
22 that evades the whole discussion of scientific

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1 explanation, which is the appropriate thing to bring
2 out in scientific classrooms.

3 Q Why don't you name some of the evolutionists
4 or Darwinists who subscribe to the idea that natural
5 selection explains all?

6 A Yes, there are many, but the most -- the
7 most well known is Richard Dawkins. He has quite a
8 few followers in the scientific community; E.O.
9 Wilson, Michael Ruse, Michael Rose. I think I would
10 say probably, although I can't be sure of this because
11 I haven't read his books, that Nigel Franks might be
12 inclined to that direction. But, again, I object just
13 as much to the absolutism and metaphysical assumptions
14 of these people because they, too, are leaving science
15 behind when they make these statements. They're
16 speaking as philosophers.

17 Whenever somebody says that science is the
18 only road to truth, for example, that's a metaphysical
19 statement or it's a belief, not something that's
20 scientifically provable. Whenever anybody says that
21 Darwinian mechanisms are the sole, final and deepest
22 ultimate explanation of living phenomena, that's not a

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1 scientific statement. That's a metaphysical,
2 quasi-religious statement. That does not belong in
3 the classroom either.

4 Q If someone says -- or if a book, a biology
5 textbook says that living things develop randomly and
6 by chance, is that a metaphysical statement?

7 A No. It could be. It could be either a
8 metaphysical statement or a scientific statement.
9 When they say this scientifically, what they mean is
10 that there's no observable direction or source of
11 direction of certain phenomena that happen in nature.
12 They are stochastic -- that's S-T-O-C-H-A-S-T-I-C --
13 phenomena or phenomena that occur without any
14 specifiable directionality, intelligent or otherwise.

15 Q What about if they use the word undirected?

16 A Undirected is what they mean when they say
17 random, especially in evolutionary theory.

18 Q Isn't that a statement that there is no God?

19 A No, not necessarily at all. It's -- in
20 fact, in my own theology the whole idea of a loving
21 God requires a universe in which accidents are
22 plentiful, and even St. Thomas Aquinas back in the

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1 13th century said that from a theological point of
2 view a world without accidents is inconceivable
3 because try to imagine a world without accidents. It
4 would be so frozen, so stiff, so deterministic
5 everything would have been settled from the very
6 beginning. Such a universe would be a puppet in the
7 hands of God rather than a universe distinct from God.

8 So in many ways what we call accidents,
9 random events or philosophically contingent events,
10 these events are completely consistent with the notion
11 of a God who wants the universe to develop into
12 something that can dialogue with God rather than be
13 simply a passive, putty in the hands of the creator.

14 Q So God would not know what is going to
15 happen?

16 A It's quite possible that the creator is
17 waiting to be surprised and takes delight in what
18 happens in the universe. This is a theological
19 position that not everybody would accept, but it is
20 one that has been accepted by a number of different
21 theologians.

22 Q So God can be surprised? Is it -- I mean,

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1 it's your theory or your opinion God can be surprised?

2 A It's not just my opinion. It's a position
3 which has been developed by a number of contemporary
4 theologians including some evangelicals.

5 Q So the concept or a characteristic of a God
6 as all-knowing is not an adequate explanation, then?

7 A I haven't denied the existence of an
8 all-knowing God. God knows whatever can be known.

9 Q But he doesn't know accidents?

10 A I don't know how deeply you want me to get
11 into theology here, but since you asked me, a God who
12 knows everything, as the medieval theologians would
13 say -- and there was a big discussion of this in the
14 Middle Ages which was never resolved between the
15 Banezians and the Molinists, and finally a pope
16 stepped in and said the Jesuits and Dominicans should
17 stop fighting about this issue.

18 But it was never resolved, and today the
19 discussion that's happening between those that think
20 God knows all, and, therefore, controls everything is
21 inconsistent with the God of love; there are those who
22 say this. And then there are others who say that,

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1 well, God does control everything, and God's
2 foreknowledge has predestined everything to be what it
3 is.

4 In many ways the encounter with evolutionary
5 thought in the last century and a half has caused a
6 kind of re-thinking on the part of many theologians of
7 what God is, and this is one of the things that I
8 develop in my book God After Darwin.

9 Q Could you describe the discipline of
10 theology?

11 A Theology is systematic reflection usually
12 employing philosophical conceptualities to articulate
13 the meaning of religious faith.

14 Q And when you say systematic theology, is
15 that a subdiscipline in theology or is that just a
16 description in general of theology?

17 A There is systematic theology. There's
18 practical theology or ethics, and there's historical
19 theology, and there are subdisciplines in those as
20 well. But what ties them all together is they are
21 attempts to understand religion and the object of
22 religious devotion, God, in a way that moves beyond

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1 spontaneous or what we call naive, symbolic or mythic
2 religious understanding.

3 Q So the issues that get into God, touch upon
4 God, then you would say would be the area that
5 theologians should discuss or should be involved with?

6 A Not -- not necessarily just theologians.
7 Everyone has the opportunity and the right to reflect
8 on the meaning of the idea of God.

9 Q I'm talking about the various academic
10 disciplines, though. It seems to me as you discuss
11 what science is and then you discuss what theology is
12 you're trying to make a demarcation --

13 A No, I --

14 Q -- that you move from science and you go up
15 so far and then you have to now get into theology.

16 A One of the things that systematic theology
17 does is lay out or -- good -- what I would consider to
18 be good systematic theology lays out distinctly the
19 way in which theology is different from, say, the
20 natural sciences and philosophy. And the difference
21 consists theologically of the fact that the systematic
22 thought that's involved here goes beyond what can be

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1 known by science, and science methodologically
2 speaking does not talk about God. Systematic theology
3 talks about God in a formal sense, and because of that
4 distinction -- it's because of that distinction that I
5 am very sensitive to texts, books, articles by alleged
6 scientists who suddenly slip into a theological mode
7 of discourse that belongs to another discipline.

8 Q If we had a powerful enough microscope and
9 we looked at the smallest infinitesimal matter and we
10 saw "Made by God" on that matter --

11 A Uh-huh. Yes.

12 Q -- would you say scientists have no right to
13 look at that and make a conclusion that this was made
14 by God?

15 A Your assumption there is, I think, erroneous
16 that by looking at the minutia of nature that we
17 sometimes get down to the fundamental levels; of
18 nature. Some scientists make that same -- have that
19 same assumption, which I think is an erroneous one.

20 You're talking about a kind of physics which
21 isolates the most basic or the most minute aspects of
22 nature, but science is really -- that kind of approach

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1 actually abstracts from, leaves out all the rest of
2 reality. So it's not even conceivable that that kind
3 of approach would ever find at that level that you're
4 talking about anything that says, "Made by God."

5 Now, it's possible that as you step out of
6 the shoes of strict science as a human being
7 interested in the deeper truths of reality that you
8 will arrive at that conclusion, and I think quite
9 legitimately, but you don't bring in "Made by God"
10 while you're doing science.

11 Q Well, but that's the question I -- the
12 reason I asked that question is to see how far this
13 demarcation would go, what is science and what is not.
14 When you say it's not conceivable, we don't know what
15 science is going to find out in the next ten years, do
16 we?

17 A We know this; that science is not wired,
18 let's put it that way, as a detection system. Science
19 is not wired to pick up any signals of transcendence
20 of God. Now, if you want to rewire science to pick
21 that up, what you have done is slipped into theology,
22 and this, I think, is what the intelligent design

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1 people are doing.

2 Q So what is the big deal about what is
3 science and what is not? If you're all seeking --

4 A The big --

5 Q -- the truth --

6 A -- deal --

7 Q If you're all seeking the truth, why do we
8 have to say, well, this is science and this is
9 theology, this is philosophy, this is chemistry?

10 A The big deal is that science quite rightly
11 seeks to have a future, to have indefinite horizons of
12 exploration ahead of it. This is what excites
13 scientists. This is what gets them up in the morning.

14 To bring in an ultimate explanation, a
15 theological explanation here and now at this moment in
16 the history of scientific inquiry is implicitly to
17 tell the scientists your work is done; we have finally
18 figured out what is the ultimate and final explanation
19 for your study of natural phenomena.

20 And what theology -- what good theology
21 should do is open up and support the scientific search
22 for endless horizons of understanding; for example,

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1 simply to say that irreducible complexity is caused by
2 an intelligent design has the effect of being what's
3 called a science-stopper. It seems to make irrelevant
4 any further scientific, physical understanding or
5 evolutionary understanding of how these phenomena
6 could have come about.

7 Q Well, Michael Behe believes in intelligent
8 design yet he continues to do his lab work; isn't that
9 correct? Isn't that right?

10 A You see, I don't know whether he's doing
11 that or not. I have -- I have the sense that what
12 Behe is doing is implicitly theological when he
13 resorts to the notion of intelligent design, and
14 perhaps that belief, which I think is perhaps
15 ultimately correct that somehow intelligence lies
16 behind the phenomenon, can have the effect of
17 energizing science. So theology, a theological sense
18 that there is some ultimate rationality that
19 undergirds the whole of the natural world, can have,
20 and I think has had, the effect of, in a sense,
21 legitimating the whole scientific enterprise by
22 telling scientist, go for it, there's rationality out

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1 there. If a scientist said deep in his gut, there's
2 no rationality out there, then there would be no
3 incentive to seek further clarification of this
4 rationality.

5 My point is not that it's wrong to appeal to
6 the notion of intelligent design or intelligence,
7 rather. I would not say intelligent design. I don't
8 like the term design. It's not wrong, and it's even
9 energizing, I think, to the scientific enterprise to
10 appeal to the notion of intelligence as the ultimate
11 foundation of reality. Again, I would say wisdom
12 rather than intelligence because that opens up the
13 possibility -- the prospect that we can keep on going
14 deeper and deeper into this intelligibility.

15 The problem is that the intelligent design
16 people want to bring that intelligence into science
17 itself rather than making that intelligence the
18 ultimate foundation of reality.

19 Q Well --

20 A And that's -- that's why I think it's so
21 important to distinguish between scientific method and
22 systematic theology or theology of any stripe.

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1 Q Intelligent design theorists can conclude
2 there is intelligent design without going into the
3 characteristics of the designer; is that correct?

4 MR. WILCOX: Other than that there's an
5 assumed intelligence?

6 THE WITNESS: Yes. In fact, this is
7 why I think their thought is so theological; they're
8 appealing to something that they can't get their minds
9 around. That's why I call it religious.

10 I define religious in my report in
11 three different ways, and the appeal to intelligence,
12 as your question suggested, is the appeal to something
13 that is indefinable; whereas what science itself tries
14 to do is define causes as much as it possibly can.

15 BY MR. THOMPSON:

16 Q Well, if a scientist says something is
17 designed -- intelligently designed and that scientist
18 then goes out and figures out what the design is, as
19 Bill Dembski says, then they can do some reverse
20 engineering; is that correct?

21 A Yes.

22 Q And then correct whatever flaw they perceive

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1 in that particular biological structure.

2 A Well, evolutionists themselves do reverse --

3 MR. WILCOX: Excuse me. There was no
4 question.

5 BY MR. THOMPSON:

6 Q Isn't that true?

7 MR. THOMPSON: Thank you.

8 MR. WILCOX: Isn't which true?

9 THE WITNESS: Yes, it's true. They can
10 do reverse engineering, but so also do evolutionary
11 biologists. That's not really controversial in
12 itself.

13 What is controversial is they're taking
14 an assumption which can be the intellectual and
15 cultural context for scientific inquiry -- they're
16 taking their assumption that intelligence or
17 rationality underlies the totality of nature. They're
18 taking that assumption and they're making that part of
19 science rather than foundational to the science.

20 BY MR. THOMPSON:

21 Q As I recall in your book, I think Deeper
22 Than -- Deeper Than -- Deeper Than Darwin --

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1 A Uh-huh.
2 Q -- you discuss the analogy of reading a --
3 reading Moby Dick?
4 A Yes.
5 Q Okay. And you have a monkey try to do it
6 and you have a two-year-old child, a 14-year-old and a
7 mature adult.
8 A Right.
9 Q Everyone is reading the same book --
10 A Right.
11 Q -- and they're getting different meanings
12 from it --
13 A Right.
14 Q -- correct?
15 A They're reading at different methodological
16 levels.
17 Q At a different level?
18 A Uh-huh.
19 Q And from that I got that, you know, the
20 scientists read the book at a certain level --
21 A The book of nature.
22 Q The book of nature at a certain level, and

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1 then that's as far as they can go --
2 A As scientists.
3 Q -- as scientists, and then you go to the
4 next level, which I assume is theology or
5 metaphysical -- metaphysical level?
6 A Let me just explain that. In order to move
7 from one level of adequacy -- one reading level to the
8 other, I believe as a theologian that you need to
9 undergo a personal transformation and not just a
10 sharpening of your wits in order to be sensitive to
11 the deepest levels -- what I consider to be the
12 deepest levels of reality, including divine
13 creativity. But that -- that personal transformation
14 is something that moves you from one level to the
15 other; it's not something that should be brought in as
16 a characteristic at a particular reading level like
17 that of science.
18 Q And, as I understand, your criticism is that
19 intelligent design theorists bring in the concept of
20 intelligent design too early in the game?
21 A Yes. And, in effect, they are saying to
22 their fellow scientists, you should go through the

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1 same kind of personal transformation that led me to
2 the idea, to the belief, that there is some ultimate
3 rationality that underlies this process. That's not
4 fair to scientists. Science as science is not in the
5 business of religious conversion.

6 Q But Michael Behe is looking at the bacterial
7 flagellum and coming to the conclusion that this is a
8 machine that has an intelligent design?

9 A Yes, he is doing that but --

10 Q Okay. So it is not a --

11 A But he's doing it -- that is exactly what I
12 mean by a shift from one level of reading to another.
13 Whereas at the level of reading that's appropriate to
14 science, the level of reading of nature, making sense
15 of nature, the kind of personal transformation as a
16 Roman Catholic that allowed Michael Behe so easily to
17 say, and perhaps quite rightly to say, that there's
18 some ultimate rationality that underlies this process,
19 that statement, that process, is not part of science
20 itself. That's something that's extrascientific.

21 Q But he is looking at the empirical data. He
22 is looking at the bacterial flagellum saying that

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1 there are 40 different moving parts and this concept
2 of irreducible complexity could not have been achieved
3 by natural selection. There would have been no
4 improvement in the bacterial flagellum and its purpose
5 until the whole thing came together at one time.
6 There was not an adaptive process that could have
7 created this. Isn't that his theory?

8 A He is making an improper either/or. He's
9 saying that this phenomenon, this irreducible
10 complexity, came about by intelligent design rather
11 than by natural processes.

12 Q But that's the point. He is -- that is his
13 conclusion after looking at the empirical data. It is
14 not looking at the Bible.

15 A Right.

16 Q It is not looking at the magisterium of the
17 church. It is looking at the bacterial flagellum
18 under a powerful microscope. Isn't that true?

19 A He's starting --

20 MR. WILCOX: Objection. Isn't which
21 true?

22 MR. THOMPSON: All of the above.

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1 MR. WILCOX: Then I object as compound.

2 MR. THOMPSON: Okay.

3 BY MR. THOMPSON:

4 Q Isn't it true that he comes to that
5 conclusion by looking at the bacterial flagellum under
6 the microscope?

7 A Every good theologian, and I'm not saying --

8 Q Answer the question yes or no.

9 MR. THOMPSON: Objection.

10 THE WITNESS: Well, he's starting --
11 yes, he's starting out by observing, but so does
12 theology.

13 BY MR. THOMPSON:

14 Q Okay.

15 A Theology starts out by observing empirically
16 certain phenomena, and then it reasons -- in the terms
17 of looking for an ultimate explanation of those
18 phenomena it ultimately concludes that there has to be
19 something extranatural, supernatural, but deeper than
20 nature, to give it full explanation, and that's what
21 Behe is doing. He's doing theology.

22 Q He's looking at -- theologians, I don't

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1 think, look at the bacterial flagellum, do they?

2 A Of course we do.

3 Q You do?

4 A Natural theology has always looked along
5 with science. Science can be very helpful to theology
6 in detailing and reading the natural world.

7 Q So when you look at the bacterial
8 flagellum --

9 A Uh-huh.

10 Q -- you can come to the conclusion based on
11 the empirical data that this machine could not have
12 been -- could not have been caused by natural
13 selection.

14 MR. WILCOX: Objection. There's no
15 question.

16 BY MR. THOMPSON:

17 Q Is that true?

18 A Behe has drawn this conclusion. I would not
19 because I do not make the distinction -- I do not see
20 theology as in competition with science, with natural
21 causes. In fact, as a theologian I want scientists to
22 push natural explanations as far as they possibly can

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1 because they don't compete with one another.

2 Q On the other hand, there are other
3 scientists, other people in the biology field that
4 will say, no, you see this design in this bacterial
5 flagellum, but it's not -- it's merely elusory that
6 this was done by or caused by natural selection; isn't
7 that true?

8 MR. THOMPSON: I'm sorry. Could you
9 read that back? This may not be the question you
10 meant to ask.

11 (The Record was read as requested.)

12 MR. THOMPSON: Right.

13 THE WITNESS: That's a very confusing
14 way of putting the question, I think.

15 BY MR. THOMPSON:

16 Q Simplify it.

17 A Okay. As scientists following scientific
18 method they are not permitted methodologically to
19 bring in the notion of divine intelligence or
20 intelligent design as an explanation, as a
21 self-limiting way of looking at natural phenomena.
22 What they are committed to is making sure that we have

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1 exhausted every possible physical, historical, natural
2 explanation of that phenomena -- for that phenomenon.

3 If they say that scientific method gets us
4 to the ultimate explanation of this phenomenon, then
5 they are making a quasi-theological statement. They
6 are jumping out of scientific method themselves, as
7 sometimes they do. That does not give the intelligent
8 design people an excuse to bring in a quasi-religious
9 answer to the question of how to explain that
10 particular phenomenon like the flagellum too soon. To
11 do so is to cut off that process of indefinitely
12 expanding our natural understanding of phenomena.

13 Q But the Darwinists say, we have a definition
14 for it; it's natural selection.

15 A Let me -- let me --

16 Q Isn't that true? That's what they say; it's
17 caused --

18 A Yes.

19 Q -- by natural selection?

20 A Yes, and rightly so. Let me --

21 Q Let me ask the question and you can answer
22 the next question. But there's a disagreement between

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1 Behe and the evolutionists; isn't that true?

2 A There's a difference between Behe and the
3 evolutionists because Behe is not playing the game of
4 science. He's slipping into another game. Let me
5 explain.

6 Q Well, I want to -- I have a follow-up
7 question. So you think science is a game?

8 A I'm using that as a metaphor. The game is
9 something that has certain rules that one has to
10 follow.

11 Q Okay. Where were those rules developed?

12 A Those rules --

13 MR. WILCOX: Objection.

14 THE WITNESS: -- were developed by a
15 historical process of sifting and filtering out ways
16 of learning and ways of discovery that are not
17 fruitful in terms of opening up the universe to deeper
18 and deeper exploration.

19 BY MR. THOMPSON:

20 Q But there are no -- there's not like the Ten
21 Commandments handed down by some holy scripture that
22 these are the rules that you have to play by, is

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1 there?

2 A No, but there are occasionally philosophers
3 of science who are skilled in science who discuss
4 these rules and who come to a certain sense of what
5 constitutes good science.

6 One philosopher does not always agree with
7 the other, but what most philosophers of science do
8 have in common is that science is not theology and
9 that science has to have an empirical dimension, that
10 is, experiential dimension rooted in our senses and in
11 instruments that refine our sensible awareness; that
12 have to try as far as possible to quantify things
13 mathematically, and good scientists do this and good
14 evolutionists do this, even good social scientists
15 try --

16 Q Let me stop you right there. Bill Dembski
17 has attempted to do this with his probabilities.

18 A Well, you have to have the right balance of
19 empirical observation and mathematical organization.
20 In my opinion you can be a great mathematician without
21 having submitted yourself to the empirical imperative,
22 and I think this is certainly true of all of the

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1 intelligent design people.

2 Q What is the empirical imperative?

3 A To open your senses as much as possible to
4 the data; for example, in evolution. Evolution is a
5 theory that's made up of a number of observational
6 disciplines such as paleontology; a comparative of
7 that would be biogeographical explorations, genetics,
8 radiometric dating. All of these are ideas that are
9 found by opening our senses to the full range of the
10 natural world. And without that empirical element,
11 there would be no basis for evolution, so mathematics
12 is not enough. But I think Dembski is very good at
13 mathematics, at least my impression is, but like other
14 intelligent design people, he's completely ignored the
15 empirical data that is the basis for evolutionary
16 theory in the scientific community.

17 Q There are a lot of gaps and problems in
18 Darwin's theory, is there not?

19 A Every scientific theory, if it's a good
20 scientific theory, leaves itself open to modification
21 and to improvement, and that would certainly be true
22 of Darwinian theory.

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1 Q So your answer is, yes, there are gaps and
2 problems in Darwin's Theory of Evolution?

3 A What do you mean by "gap"?

4 Q Things that he cannot explain.

5 A Such as?

6 Q How life began.

7 A Can I give an example of --

8 Q Well, answer my question.

9 A -- with reference -- there are always things
10 that science has not yet explained.

11 Q And Darwin's Theory of Evolution has not
12 explained?

13 A There is much left in the living phenomena
14 of life that needs further explanation beyond what
15 Darwin has taught us.

16 Q Well, you mentioned paleontology. Isn't
17 there some problems there between the Cambrian
18 explosion where all at once you see life figures and
19 then disappearance; isn't that a problem for Darwin's
20 theory?

21 A There are always problems with collecting
22 fossils because only one in, what, 5 billion bones

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1 ever gets fossilized. And there are apparently what
2 people call gaps in the fossil record in the sense
3 that one would expect perhaps more transitional forms,
4 but we're filling these in especially --

5 Q So --

6 A -- with reference to --

7 Q So there are gaps --

8 MR. WILCOX: Excuse me. You're
9 interrupting his answer.

10 MR. THOMPSON: Okay. I'm sorry.

11 BY MR. THOMPSON:

12 Q So there are gaps --

13 MR. WILCOX: Would you finish your
14 answer?

15 THE WITNESS: With reference to human
16 phenomena, the gaps have been filled in fairly well.
17 The evolution of humans has been detailed quite well
18 by paleontologists. Whales, for example, during the
19 Eocene, we're increasingly finding transitional forms
20 there.

21 The problem is that transitional
22 forms -- whenever there is an experimentation with a

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1 new kind of phenomenon, such as, for example, a new
2 automobile in human technology, there are only a few,
3 comparatively, attempts at -- at viable, adaptable
4 types of existence, and because of the falsity of data
5 at certain junctures in the fossil record, some
6 people, like the intelligent design people and
7 creationists, draw the conclusion that the Doctrine of
8 Special Creation by God is an alternative to the
9 evolutionary view of things.

10 But you have to remember the Cambrian
11 explosion took place over a period of several million
12 years.

13 BY MR. THOMPSON:

14 Q Still a short span when you look at the
15 earth as 4 billion years old; is that correct?

16 A Yes, and the theory of punctuated
17 equilibrium might be one approach to explaining how
18 that works.

19 Q Well, the theory of punctuated equilibrium
20 is something that really is contrary to what Darwin
21 thought; is that correct?

22 A Darwin did not, as far as I know, have a

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1 definitive position on that. He was aware that the
2 fossil record is spotty, but it was enough -- there
3 was enough directionality there as you move from the
4 lowest levels of fossil record to higher complexity
5 increases.

6 Q But he thought everything would be very slow
7 and gradual; isn't that correct?

8 A Right, as all evolutionists do.

9 Q Right. But punctuated equilibrium is
10 contrary to that slow and gradual process?

11 A It's slow -- it's faster, but it's still
12 very slow. 2 million years is a long time.

13 Q Not when there's 4 billion years; is that
14 correct?

15 A The development of the human brain from our
16 hominid ancestors took place over a very small period
17 of time, comparatively just several million years. So
18 there can be kind of runaway processes that do occur
19 at times, but they don't in any way violate the laws
20 of natural selection.

21 Q Which animal did the humans come from?

22 A We have a common ancestor. We did not come

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1 from any known species, but the primates, chimpanzees,
2 baboons, monkeys and so forth and we have a common
3 ancestor, and the record of that is found in the human
4 genome itself.

5 Q Who is the common ancestor?

6 A Who --

7 Q Yeah, or what.

8 A -- or what?

9 Q Yeah.

10 A Yeah, we haven't found that yet.

11 Q So that's a weakness in Darwin's theory?

12 MR. WILCOX: Objection.

13 THE WITNESS: No, it's not a weakness.

14 BY MR. THOMPSON:

15 Q So you don't have to explain that?

16 A We still don't have the answer to the
17 question of how to unify the electromagnetic with
18 weak, strong and gravitational forces either. That's
19 a weakness you might say in physics, but it's one that
20 opens up the possibility of further specification;
21 likewise, with evolution, evolution is a good science
22 because it's open to further progress in

00096

1 understanding.

2 Q Well, would you say -- if you don't want to
3 use the word weakness, would you say there's a gap in
4 Darwin's theory, then?

5 A It's -- it's -- I would say -- I wouldn't
6 use the term gap. I would say it's the knowable
7 unknown that still remains in Darwin's theory.

8 Q Well, I'm quoting from the biology textbook
9 that the high school students are using in Dover, and
10 it says, Research still debates such important
11 questions as precisely how new species arise and why
12 species become extinct. There's also uncertainty
13 about how life began.

14 Do you agree with that?

15 A Yes, oh, of course.

16 Q Okay. Does Darwin's theory explain how life
17 came out of matter?

18 A Darwinian theory doesn't do that, but you
19 can explain biochemically, but you can also explain it
20 at different levels. I would want to leave room for a
21 theological explanation of life, but, you see, a
22 theological explanation of life does not compete with

00097

1 a natural explanation of life.

2 Let me give you an example. Suppose there's
3 a pot of water boiling on your stove. Someone comes
4 up and says, explain to me why that water is boiling.
5 One very good answer to that question is to say it's
6 boiling because the water molecules or H₂O molecules
7 are moving around very excitedly, and you carry that
8 explanation around as far as you can; that's a good
9 explanation. But you could also explain it by saying,
10 it's boiling because my wife turned the gas on. You
11 could also explain it by saying, it's boiling because
12 I want tea. All three of these are explanations, but
13 they can't be mapped onto each other. They don't
14 compete with each other.

15 Likewise with the origin of life. I can say
16 the origin of life came about because of RNA
17 replication or some other biochemical phenomenon.
18 When I'm doing biochemistry, I explain it at that
19 level, and that's a very good explanation, possibly.
20 It's open to revision, of course. I can also explain
21 it at the level of astrophysics. I could say life
22 came about because the initial conditions and

00098

1 fundamental constants of the universe were such as
2 eventually to give rise to life. I could also explain
3 it by appealing to the theory of emergence; that life
4 is one stage in some 28 different stages of emergence.

5 All those explanations are good. At the
6 same time I could also say life came about because of
7 the generosity of a transcended reality that wanted
8 the universe to spontaneously respond to divine love
9 and persuasion. Those are not contradictory, but they
10 can't be mapped onto each other.

11 When I'm giving one explanation -- if I try
12 to introduce, for example, I want tea, at the same
13 time I'm doing a molecular explanation of the boiling
14 of water, that's a violation of explanation.

15 And that's exactly what the intelligent
16 design people are doing. The intelligent design
17 people are bringing in, I want tea, at the level of
18 explanation in terms of molecular motion. They're
19 bringing in intelligent design at the point in human
20 inquiry where there's still room for purely
21 naturalistic understanding of things.

22 My own view as a theologian is ultimately

00099

1 this universe is grounded in the love of God, but
2 precisely because that's a level of explanation
3 comparable to, I want tea, I don't want that
4 particular explanation to intrude onto the particular
5 kind of reading level, if you will, that evolutionary
6 biologists are working at.

7 Q I think you're getting at the issue of
8 various levels of causation --

9 A Yes.

10 Q -- is that correct?

11 A Uh-huh.

12 Q Now, Aristotle also talked --

13 A Aristotle had plurality.

14 Q -- talked about the various causes --

15 A Uh-huh, the levels.

16 Q -- of the -- of --

17 A Four causes.

18 Q Okay. Is it accurate to say that Aristotle
19 held that to be scientific one must deal with causes,
20 one must use logical demonstrations and one must
21 identify the universals which inhere in the
22 particulars of sense?

00100

1 A The use of the term science in the quotation
2 that you just read is different and wider -- different
3 from and wider than the understanding of science
4 that's practiced by natural scientists today.

5 Natural scientists today don't -- in my view
6 don't contradict Aristotle, but they leave out his
7 discussion of final cause and formal cause as
8 irrelevant to scientific understanding, and they focus
9 on his two other causes, efficient cause and material
10 cause, as appropriate to scientific exploration.

11 There's nothing wrong with that
12 self-limiting method. What's wrong is when a person
13 says that self-limiting method gives you exhaustive
14 understanding of reality, even the reality of a
15 flagellum.

16 MR. THOMPSON: Can we take a break?

17 (Recess -- 11:09 a.m.)

18 (After recess -- 11:21 a.m.)

19 BY MR. THOMPSON

20 Q I want to go back to the Cambrian explosion.
21 This is one of the events that apparently casts some
22 weakness in Darwin's theory; is that correct?

00101

1 MR. WILCOX: Objection.

2 THE WITNESS: I don't think so
3 personally, no.

4 BY MR. THOMPSON:

5 Q Well, isn't it true that the fossil evidence
6 suggests that many of the phyla first appeared without
7 evident precursors over the five to ten million years
8 that we're talking about in the Cambrian rocks?

9 A Without precursors being detected so far,
10 possibly so.

11 Q Okay. So that --

12 A By the way, when you say -- could I ask for
13 a clarification?

14 Q Sure.

15 A When you say weakness in Darwinian theory,
16 that's a bit vague, too, because what today is known
17 as Darwinian theory is not exactly the same thing as
18 Darwin himself held. There have been a lot of
19 developments in evolutionary theory supported
20 especially by genetics. So when people refer to
21 Darwinian evolution today, they're referring to a much
22 richer understanding of life than Darwin himself had.

00102

1 Q And we'll get into, you know, the full
2 explanation of Darwin's theory, but there is this
3 weakness that we can't find the precursors to the
4 animal phyla that first appeared in the Cambrian
5 rocks; is that correct?

6 A Again, I would not call that a weakness. I
7 would say that's a territory to be explored.

8 Q Okay. Is it a gap?

9 A Every science -- every science has a
10 weakness in the sense that no science has ever wrapped
11 up fully and bottled and capped its field of inquiry;
12 it's an ongoing process of specification and detail.
13 And Darwinian theory, like any other scientific
14 theory, has a long way to go in terms of its future
15 discoveries.

16 Q Well, would you indicate that that's --
17 there's a lack of evidence in that that supports
18 Darwin's theory?

19 A I would not say evidence. I would say
20 there's room for increasing data. Data is not exactly
21 formally the same thing as evidence.

22 Q Well, if we're scientists, we have to look

00103

1 at the data.

2 A Right.

3 Q And the data is missing right now.

4 A That's -- the empirical imperative directs
5 us to look for as much data as we possibly can.

6 Q And we haven't found the data as it relates
7 to the Cambrian explosion; is that correct?

8 A We found lots of data that relate to the
9 Cambrian explosion.

10 Q No. I mean that relate to the precursors to
11 the phyla that were found in the Cambrian explosion.

12 A Again, I'm -- I'm not as much of an expert
13 in this as biologists -- formal biologists are, but my
14 own understanding is that there are precursors to the
15 kind of explosion that took place in the Cambrian
16 explosion; although, they were not as explosive, let's
17 say, as you find in the Cambrian explosion. There has
18 been a general directional transformation of living
19 stuff into more and more complex forms of living stuff
20 over the process of 3.8 billion years.

21 Q And what were the precursors to the Cambrian
22 fauna, then. You say there were. What were they?

00104

1 A I don't recall, but I recall reading
2 recently in some scientific publication that the
3 Cambrian explosion is not an absolute beginning of
4 biological complexity.

5 Q Do you regard the Cambrian explosion as a
6 challenge to common descent?

7 A Oh, not at all.

8 Q When you see so many different phyla all at
9 once appear?

10 A We might be descendents of one of those
11 phyla without being the descendents of others. But
12 those phyla themselves, you see, were descendents of,
13 ultimately, probably one unicellular form of life that
14 originated as much as 4 billion years ago.

15 Q Have we found that unicellular form of life?

16 A You're never going to find it directly
17 because it's gone, but you can reason to it on the
18 basis of our understanding of genetics and metabolism
19 and other kinds of physical processes that have formed
20 the building blocks of living stuff ever since.

21 Q So you can utilize reason to take the place
22 of actual data?

00105

1 A In science reason doesn't take the place of
2 data; reason organizes the data into intelligible
3 structures.

4 Q Okay. So what is wrong with reason
5 organizing the bacterial flagellum into intelligent
6 design?

7 A Nothing's wrong with that provided you don't
8 call that science. It's more of a theological and
9 philosophical reasoning. There are different levels,
10 as I was explaining to you while ago, of formally
11 structuring data, and the way in which theology and
12 philosophy structure their data in such a way as to
13 constitute material for that kind of discourse is such
14 as to bring in, for example, to use an aristotelian
15 term, notions of formal and final causality that are
16 left out in scientific inquiry.

17 Q Do you have any idea at all what phyla the
18 octopus belongs to?

19 A No, I don't.

20 Q What about the starfish?

21 A No, I don't know that. I don't have that
22 detailed knowledge of biology.

00106

1 Q Isn't it true that Darwin himself remarked
2 that if it could be demonstrated that some complex
3 structure could not possibly have come about by
4 numerous, successive, slight modifications that his
5 theory would absolutely break down?

6 A Darwin himself did say that.

7 Q Yes. And would Michael Behe's description
8 and conclusions relating to the bacterial flagellum
9 then be responsible for the breakdown of Darwin's
10 theory?

11 A Well, as I said a while ago, Darwinian
12 theory today is not the same thing as Darwin himself
13 thought evolution to be, so let's say evolutionary
14 biology -- I would say the flagellum does not cause
15 the breakdown of evolutionary biology.

16 Q Has there been any explanation in
17 evolutionary biology for the complex -- the
18 irreducibly complex bacterial flagellum?

19 MR. WILCOX: Objection.

20 THE WITNESS: A number of biologists
21 have responded to Behe by proposing ways in which
22 these allegedly irreducible phenomena could have

00107

1 evolved more gradually, and in most cases, I believe,
2 they performed -- the precursors of these allegedly
3 irreducible -- irreducibly complex phenomena performed
4 functions that are quite different from and perhaps
5 unrelated to the particular function that the
6 flagellum and its rotary motor perform now.

7 BY MR. THOMPSON:

8 Q Do you accept those explanations?

9 A I'm not a scientist, but I want -- what I
10 want to accept is the openness of scientific inquiry
11 to push those gradualistic explanations as far as they
12 possibly can go.

13 Now, it should be said that there are other
14 sciences that are supportive of biology that allow for
15 the self-organization of material processes in ways
16 that Darwin and even perhaps some contemporary
17 Darwinian biologists are not fully apprised of.

18 Stuart Kauffman, for example, has written a lot about
19 the self-organizing character of material processes
20 that could perhaps have a subordinate or at least a
21 complementary explanatory role in explaining what Behe
22 refers to as irreducible complexity. But, you see,

00108

1 these are scientific ideas, not theological ideas.

2 Q And they're really just guesses at this
3 point, are they not?

4 A In studying any historical phenomenon,
5 whether it's human history or natural history, a lot
6 of our present understanding has to be hypothetical.

7 Q As that also applies to Darwin's Theory of
8 Evolution?

9 A It applies to every theory including
10 Darwin's Theory of Evolution.

11 Q I'm trying to find the exact quote, but at
12 some point in your book Deeper Than Darwin you
13 basically criticize the evolutionists -- some group of
14 evolutionists who came up with a lot of stories,
15 metaphoric descriptions about particular events which
16 was not truly science. Do you remember that part in
17 the book?

18 A I don't think I criticized the so-called
19 "just so" stories. I criticized other aspects of
20 evolutionary thought in the wider sense. Evolutionary
21 materialism is really what I criticize, which is not
22 really science but another form of belief system.

00109

1 Q Right. I'll try to find that because it
2 might be in a different article that you wrote.

3 What factors would you consider have to be
4 present for something to be a science?

5 A There has to be observation -- an
6 observational method which obeys what I called earlier
7 the empirical imperative; to open our minds as far as
8 possible and our senses as far as possible to the
9 world around us, there has to be that. That's not
10 enough by itself. There have to be frameworks for
11 organizing that data into hypotheses and eventually
12 theories. These are conceptual and usually
13 mathematical. And, thirdly, there has to be an
14 obedience to the imperative to be critical; there has
15 to be a willingness to persistently examine whether
16 your hypotheses and theories correspond to the data.
17 So those three ingredients.

18 Q Okay. Are there any others?

19 A There are -- there are factors that are
20 present in what I would call a subscientific way that
21 I mentioned earlier. There have to be -- for example,
22 there has to be a belief on the part of the scientist

00110

1 that truth is worth seeking. That, again, is not part
2 of science, but it is foundational to science. There
3 has to be, also, a belief that the human mind is of
4 sufficient stature to grasp the truth when it comes
5 across it.

6 These are tacit elements that are present in
7 the actual work of science, underlying the work of
8 science, of which perhaps many scientists themselves
9 are even unaware that they're necessary for the whole
10 process of science to get off the ground.

11 Q Any other factors?

12 A For natural science, of course, there has to
13 be the data of the natural world itself, but those are
14 the main ones that I would emphasize.

15 Q Okay. Is there any concept that you're
16 aware of that requires a majority vote by scientists
17 of what is a scientific theory and what is not?

18 A I don't think it's -- it has to be a formal
19 vote, but over the years a certain conventional
20 approach develops in such a way that those who become
21 apprenticed to what's called scientific method have to
22 learn. They have to learn -- it's a skill. It's a

00111

1 skill that requires a certain asceticism on the part
2 of the human mind that it will refrain from doing
3 certain things or having certain preoccupations while
4 you're doing science.

5 Symbolized by the white coat, we purify our
6 minds of desires for our experiments to conform to
7 what's necessary to get tenure or whatever in the
8 university. We have to learn that skill, and it's --
9 as I say, it's a kind of asceticism, a discipline,
10 that doesn't come automatically but requires a
11 training process within a community which has a
12 certain authority structure to it, not unlike
13 religious communities. In the wide sense there are
14 certain rules that one has to learn and apply, and if
15 one disobeys those rules, then one is not considered
16 part of this community.

17 And one of the rules of this community which
18 we call science is that we should not resort to
19 aristotelian final causes in order to explain things.
20 And it seems that intelligent design people violate
21 those norms, and that's perhaps why they are rightly
22 disciplined, for not conforming to this community's

00112

1 skills.

2 Q When you say "disciplined," what do you mean
3 by that?

4 A Yeah. Well, you have to purify your mind of
5 tendencies to explain things, for example, in terms of
6 purpose. It's hard to do that, but that's what's
7 required. That's what -- since the beginning of
8 the -- since the middle of the 17th century --

9 Q I misunderstood, then. I thought they were
10 disciplined in some way by the science community
11 itself?

12 A By "discipline" I mean a set of standards
13 that don't necessarily come spontaneously to us. I
14 mean, our common sense way of looking at the world is
15 always looking at it for purposes, but science says,
16 let's -- let's -- it's kind of like a game of soccer,
17 you know. You decide when you play soccer, I'm not
18 going to use my hands and I'm going to see what I can
19 accomplish athletically by just using my feet. So
20 science says, now, let's see what we can accomplish
21 here cognitively by leaving out discussions of
22 purpose, God, intelligence, see what we can find by

00113

1 looking at the natural world in this way.

2 Q But tomorrow the science community or over a
3 period of time can change those rules; is that
4 correct?

5 A That would be completely different. If that
6 happens, it would not be science anymore. It would be
7 something else.

8 Q Well, if they say it's science, it's going
9 to be science; right?

10 A Well, I'm using the term science as I just
11 described it a while ago, and as I've been describing
12 it all morning, as having to conform to what's
13 empirically available.

14 Q Right. But these are rules that are
15 man-made; correct?

16 A To say that they're man-made does not
17 adequately represent these rules. These rules are --
18 are things that come about as a result of a complicity
19 of the human mind and the structures of the natural
20 world. So it's not just arbitrary. It's not just a
21 wild guess. To say it's just a theory, for example,
22 is to miss the whole point of a scientific theory.

00114

1 Q Well, it's a -- well, it is scientific and
2 it is not testable by scientific methods, though?

3 MR. WILCOX: What's the antecedent of
4 "it"?

5 THE WITNESS: When you say "it," you
6 mean scientific method is not provable by scientific
7 method?

8 BY MR. THOMPSON:

9 Q Right.

10 A Right. No, it's not.

11 Q Again, you used the soccer analogy. If
12 tomorrow you wanted to change the rules of soccer, you
13 can change the rules of soccer; isn't that correct?

14 A Sure.

15 Q And you can do the same thing with the rules
16 of science; isn't that correct?

17 A It would not be called soccer anymore. It
18 would be called some other sport.

19 Q Well, it still could be called soccer.
20 You've just changed the rules.

21 MR. WILCOX: You could --

22 BY MR. THOMPSON:

00115

1 Q Could it not?

2 MR. WILCOX: You could call it
3 football.

4 BY MR. THOMPSON:

5 Q Could you not?

6 A You can change the rules, but since rules
7 specify the identity of a particular game or a
8 particular kind of intellectual inquiry, then if you
9 change the rules of science, for example, to include
10 appeal to the hypothesis of intelligent design, then
11 you've changed the whole definition of science into
12 something that most scientists since the beginning --
13 since the middle of the 17th century would not
14 recognize as science.

15 Q Okay. But up to the 17th century scientists
16 thought it was science?

17 A In the Middle Ages the word scientia was
18 used by people like Thomas Aquinas to refer to the
19 gathering in of understanding about the world in many,
20 many different ways, including theological and
21 philosophical. But the way the word science has been
22 defined in modern scientific -- so-called scientific

00116

1 disciplines is such as to leave out things that before
2 the 17th century were considered to be science. For
3 example, aristotelianism was rampant at the time of
4 Galileo, and Aristotle was interested in learning
5 about the purpose of things.

6 Galileo and Bacon before him had said, okay,
7 it's all right to talk about the purpose of things,
8 but we're going to get this new approach to
9 understanding the world in which we leave out
10 questions about purpose. For example, Aristotle
11 understood gravity as the desire on the part of the
12 center of the earth for objects. Desire. Desire
13 cannot be quantified mathematically, so one of the
14 important things that modern science did was to
15 explain gravity, for example, in terms of a
16 mathematical formula, and that mathematical formula is
17 essential to the discipline of natural science.

18 Q One of the criteria of science, though, is
19 that it is always tentative; is that correct?

20 A Yeah, that should be the criterion of
21 religion, theology and all human knowledge.

22 Q So that conceivably ten years from now the

00117

1 idea of science could be totally different; is that a
2 possibility?

3 A It's possible that people can develop
4 methods of understanding things. For example, in the
5 20th century development an empirical method was
6 developed in philosophy known as phenomenology, and,
7 so, there can be -- there's plenty of room for the
8 development of different kinds of method. For
9 example, I, myself, in the book that I'm writing now
10 and in other contexts, have referred to a wider
11 empiricism that goes beyond what science deals with.

12 For example, we all know that we are
13 subjects. Each one of us has an insideness that we
14 experience palpably and immediately. That's part of
15 the natural world, too. But science has deliberately
16 decided that we're not going to talk about
17 subjectivity.

18 Well, they're not going to talk about
19 subjectivity, so let's -- what I'm proposing is that
20 there be a wider or more radical kind of empiricism
21 that takes into account data that science
22 methodologically leaves out. But I don't call it

00118

1 science.

2 Q Well, I was --

3 A I call it wider empiricism.

4 Q Well, it could --

5 A Out of my respect --

6 Q Excuse me. Go ahead.

7 A Out of my respect for the community and
8 tradition of involving several centuries of refining a
9 particular method and referring to it as science, I
10 want to let science be science, but that doesn't mean
11 that science is -- is the only way of empirically
12 coming into contact with the natural world.

13 Q Let me suggest to you that what you said,
14 however, may be the beginning of a new understanding
15 of science; isn't that possible?

16 A Well, I'm not the vetter of this. I'm
17 following several major philosophers; Teilhard de
18 Chardin, Bernard Lonergan, Henri Bergson, Alfred North
19 Whitehead, all of who are -- William James, all of
20 whom have developed a wide empiricism --

21 Q But that empiricism --

22 A -- but they don't call it science.

00119

1 Q Right. But that empiricism will affect the
2 way or could affect the way scientists view science;
3 isn't it true?

4 A I don't know. I -- if it does -- if it does
5 lead to something else, I'm not sure that I would call
6 it science, and I'm almost certain that most of the
7 present scientific community would not call it science
8 either.

9 Q Well, see, at one point, you know, when
10 Darwin came up with his theory, the attack on him was
11 that it was not science; isn't that true?

12 A Well, some would say that and some still say
13 it.

14 Q Well, I mean, but at the time his
15 contemporaries attacked him as not being science;
16 isn't that true?

17 A Some of them did. In fact, his fellow
18 scientists were more critical even than the clergy
19 were toward him.

20 Q Right. But I -- but that proves --

21 A Some of his fellow scientists, not all of
22 them.

00120

1 Q But, see, attack -- but history has a way of
2 repeating itself, and it seems that the attack on
3 Darwin as not being science -- Darwin's Theory of
4 Evolution as not being science could be compared to
5 the attack on the intelligent design theorists today
6 who are attacked as not being scientists.

7 MR. WILCOX: Objection, argumentative.

8 THE WITNESS: I don't think that's a
9 valid comparison, because as I've been saying all
10 morning, intelligent design people are bringing in
11 kind of explanatory or resorting to a kind of
12 explanatory level or reading level that is
13 inappropriate to what we refer to as natural
14 scientific method. It might be a valid -- it might be
15 a valid approach to appeal to the notion of
16 intelligence at some level in your understanding of
17 phenomena, but that doesn't mean that science itself
18 is going to resort to such a notion because to do so
19 while you're doing science is to close off the road to
20 further naturalistic inquiry.

21 BY MR. THOMPSON:

22 Q You would agree that on occasion theories

00121

1 which were ridiculed by the contemporary scientists --

2 A Yes.

3 Q -- have then developed to be the workable or
4 the explanatory theory later on?

5 A Yes.

6 Q Okay.

7 A Yes.

8 Q And, so, that just because a particular
9 theory is held by a few or a minority of scientists
10 does not in any way affect the validity of the theory
11 itself --

12 A That's correct.

13 Q -- is that true?

14 A That's correct. The relativity theory would
15 be a good example.

16 Q And because of that, do you have any concern
17 that the community of scientists themselves who have
18 vested a lot of their career on the theory of
19 intelligent design may be attacking -- a career on
20 evolution, excuse me, may be attacking the theory of
21 intelligent design for other than pure scientific
22 motives?

00122

1 A A particular scientist as a person can, and,
2 I think, inevitably this has occurred, has attacked
3 intelligent design because of kind of a temperamental
4 opposition to anything that smacks of religion.

5 Richard Dawkins is a good example. He's
6 constantly attacking certain ideas, not for scientific
7 reasons, but because they don't fit into his world
8 view. We're all capable of doing that. But that is,
9 in a sense, to commit the genetic fallacy; that is, to
10 understand things in terms of how they originate
11 rather than in terms of their ostensible, logical
12 veracity. And, so, the theory of evolution has to be
13 weighted in terms of its intrinsic cognitional
14 explanatory power rather than in terms of why it might
15 appeal to this person or that. And the same thing
16 would be true of many scientific ideas. We have to
17 distinguish.

18 Q And does that also lead to a fair statement
19 that you should not look at the motivation of the
20 scientist but actually the scientific theory that he
21 is or she is espousing?

22 A Yes, when you're talking about a scientific

00123

1 theory, motivation should be bracketed. When you're
2 talking about theological theories, that's something
3 else.

4 Q Well, putting it another way, the validity
5 of a scientific theory --

6 A Right.

7 Q -- should not be determined by the
8 motivation of a scientist who is proposing that
9 theory; is that correct?

10 A In the field of science, I would say that
11 that's correct.

12 Q And, so, some of the anti-intelligent design
13 advocates out there attack the theory of intelligent
14 design based upon the motivation of its proponents
15 rather than the theory itself; do you agree with that?

16 A I suspect that that's true at times, yes.

17 Q Well, isn't Barbara Forrest one of them?

18 A I don't know. I can't say.

19 Q Okay. But in the scientific world or in the
20 academic world, you would want to look at the validity
21 or the invalidity of the theory and not so much as to
22 the person who was advancing the theory.

00124

1 A That's -- I would say that's the -- that's
2 true in the case of science but not necessarily in the
3 case of philosophy and theology.

4 Q Why do you make that distinction, science
5 versus philosophy and theology?

6 A Because when you're talking about a world
7 view as distinct from a scientific fact, you're
8 talking about something in which the personal
9 coefficient of that particular world view is
10 inseparable from the world view itself.

11 Q But I assume even yourself as a theologian
12 attempt to eliminate whatever personal bias or
13 prejudices you may have as you attempt to solve
14 whatever problem you're looking at.

15 A What you try to eliminate is any theory or
16 any set of ideas which flows from any other desire
17 than the desire to know the truth.

18 We all have desires; desire for pleasure,
19 desire for meaning, desire for power and so forth. We
20 need to be suspicious of any idea that flows from
21 those particular desires. But the desire to know is a
22 deeply personal desire, desire to know the truth, and

00125

1 I can't disassociate my -- my own theological view of
2 the world from -- from what is deeply personal to me.
3 Whereas in science, you want to -- as far as possible
4 you want to keep subjectivity and personality out of
5 the method, which is one of the reasons why
6 intelligent design is so problematic, because it's --
7 when you're talking about intelligent design, you're
8 talking about something that is much more deeply
9 personal than, say, the theory of natural selection.

10 Q Deeply -- well, other than people like
11 Richard Dawkins, would you agree, who --

12 A Right.

13 Q -- who has a --

14 A Well, when Dawkins is doing biology, I have
15 no problem. When he gets into his polemic against
16 religion, then his personality, his own temperament,
17 his own biography, his own personal bad experiences
18 with religion and so forth, all that all comes to the
19 surface; whereas when he's doing science, he leaves
20 that behind or at least he should leave it behind.

21 Q There are very few -- strike that.

22 Is there -- can -- can the truth of theology

00126

1 contradict the truth of science?

2 A No, no, just as the water is boiling because
3 I want tea does not contradict the water is boiling
4 because of molecular motion.

5 Q According to Gould, the philosophical
6 message of Darwinism cannot be disengaged from
7 Darwin's science. Do you agree with that statement?

8 A I think I wrote that statement.

9 Q Yeah.

10 A Yes. I do agree with it, yes.

11 Q Okay. And, so, even though you want to --

12 A That's what Gould says. That's not what I
13 believe.

14 Q Right. Yeah. But even though you believe
15 that the science should be separated from the
16 philosophy --

17 A Correct.

18 Q -- many Darwinists don't do that --

19 A Exactly.

20 Q -- because they believe it shouldn't be;
21 isn't that correct?

22 A Some of them do, correct.

00127

1 Q Okay. Ah, I found the statement I was
2 looking for, and I want to ask you what you mean by
3 this. Okay. It's not a verbatim; it's a paraphrase,
4 but -- this is in your book Deeper Than Darwin: The
5 evolutionary explanation employs a metaphoric and
6 narrative mode of expression not found in physics or
7 biochemistry. The inevitable fuzziness of their
8 narrative, historical accounts of life can be a source
9 of embarrassment. At times they apologize for telling
10 evolutionary stories promising us that as their
11 science progresses it will be able to dispense with
12 narrative and embed the information in mathematics.

13 A That's the --

14 Q Do you remember that statement?

15 A Yes, that's the ideal of the evolutionary
16 biologist, but there is a narrative character to it
17 that you don't find in every science.

18 Q And I think that was the statement that I
19 was -- had in mind when I asked you about
20 evolutionists filling in the gaps with these stories
21 and these narratives promising later on they're going
22 to find the facts.

00128

1 A Well, that they're going to be more precise,
2 yes.

3 Q Okay.

4 A Narrativeness is one way of conceptualizing
5 or bringing into coherence a set of data.

6 Q I looked at that statement and I viewed it
7 as somewhat very critical of these kinds of
8 evolutionists. Am I wrong in taking it that way?

9 A No, I'm not critical of that at all. That's
10 the way evolutionary explanations have always worked,
11 by placing -- by storing it -- by putting it in the
12 narrative context, because evolution, unlike other
13 scientists -- unlike other sciences, is much more
14 concerned with long periods of time in which
15 transformations take place, many others -- some other
16 sciences, like cosmology is, too, but evolution
17 requires deep, deep time, and whenever you're talking
18 about the transition from one stage to another in a
19 temporal process, the mode of discourse that you would
20 resort to has to be somewhat narrative in nature.

21 Q You use the words "can be a source of
22 embarrassment." I look at that as sort of a negative

00129

1 connotation.

2 A Well, there are certain kinds of scientific
3 purists, perhaps, who would find that narrative is --
4 is not enough and that we need to embed the data in
5 mathematical formula. And, indeed, biologists are
6 doing that today, especially in terms of the
7 transition of populations of genes from one generation
8 to the next which can be statistically quantified in
9 certain ways.

10 Q And the other -- and the other phraseology
11 that again leads me to believe that this was a
12 criticism of evolutionary explanation was the
13 "inevitable fuzziness of their narrative."

14 A Well, if you place that in the context of
15 Deeper Than Darwin, fuzziness is not necessarily
16 unexplanatory. Fuzziness is the way of admitting at
17 the moment that we need to sharpen our way of thinking
18 but that we can make at least approximate statements
19 about the nature of things, and this approximation --
20 approximation is always part of every science. No
21 science is completely without fuzziness.

22 Q Okay. Would you consider that a weakness in

00130

1 Darwin's theory?

2 A No, just the opposite. I would say it shows
3 that Darwinian theory has a future, and which if it's
4 not interfered with by such interpositions as
5 intelligent design, will allow further refinement,
6 further specification of what's going on in the
7 future.

8 Q Would you consider it a gap that still has
9 to be filled?

10 A Again, I would not use the term gap. I
11 would say it's the unknown knowable or the knowable
12 unknown.

13 MR. WILCOX: That we just don't know
14 yet.

15 BY MR. THOMPSON:

16 Q You mean gap?

17 A Well, I'm using -- I'm using the expression
18 that goes back to the philosophical discourse where
19 people distinguish between learned ignorance and
20 unlearned ignorance. Learned ignorance, the Socratic
21 term, is ignorance that's aware of how much yet there
22 is to be known.

00131

1 Q That's what kind of ignorance?

2 A Learned ignorance, as it's called.

3 Q Learned. So you would characterize
4 evolutionary theory as learned ignorance?

5 A I would say that every good science -- every
6 good scientist has to have a sense of learned
7 ignorance, and it's actually the skill in science
8 itself that shows a particular person who's doing
9 science that there is so much yet that remains to be
10 discovered and known, and Darwin -- Darwinism is no
11 exception to but an exemplification of a general
12 scientific principle that we should approach nature
13 with learned ignorance.

14 MR. WILCOX: I think the Secretary of
15 Defense could explain this to you pretty well. There
16 are things that we know we don't know.

17 MR. THOMPSON: Right. You want to take
18 a lunch break?

19 MR. WILCOX: Sure.

20 (Lunch recess -- 12:03 p.m.)

21 (After lunch recess -- 12:58 p.m.)

22 BY MR. THOMPSON:

00132

1 Q Professor Haught, earlier you had indicated
2 there is a difference between the theory of
3 intelligent design and creationism; is that correct?

4 A I think so, yes.

5 Q And what is that difference?

6 A Well, as I understand it, almost everybody
7 without exception that I've read who calls himself or
8 herself a creationist today in the sense that word is
9 used in the evolution discussion is someone who would
10 interpret the creation stories in the Bible quite
11 literally; whereas not every advocate of intelligent
12 design is a biblical literalist. That's the main
13 distinction that I would point out.

14 Q So would you give me, please, a definition
15 of creationism in your view, then?

16 A Well, creationism, as I see it, is an
17 interpretation of nature which takes the biblical
18 sequence of biblical narrative of creation and the
19 sequence of days involved in the creation story as
20 corresponding literally and factually to the way in
21 which the biological record was implemented.

22 Q In that case is it true that creationists

00133

1 believe that the earth is about 10,000 years old?

2 A There are young earth creationists and old
3 earth creationists. The young ones believe 6 to
4 10,000 years as the age of the earth.

5 Q What do the old earth creationists believe?

6 A The old earth creationists as far as I know
7 are willing at times to go along with the modern
8 geological estimation of the earth as four and a half
9 billion years old. What they have in common is the
10 special creation of each species by divine
11 intervention. The old earth creationists would allow
12 for the special creation as taking place sequentially
13 across time whereas the young earth creationists see
14 the special creation of all species as taking place in
15 the beginning.

16 I recognize that there are many different
17 stripes within the creationist camp.

18 Q Would another criteria for a creationist be
19 the fact that they believe the earth was created in
20 six days -- six, 24-hour days?

21 A Some of them would probably believe that,
22 but, again, I think there are probably many different

00134

1 varieties of creationists.

2 Q Is it a criteria of creationists that they
3 refer to the Book of Genesis as the basis of their
4 scientific theories?

5 A I know of no exceptions to that.

6 Q So --

7 A Yes.

8 Q -- yes?

9 As I understand it, creationists then start
10 with the Book of Genesis and then build their
11 scientific theory upon that sacred scripture?

12 MR. WILCOX: Objection.

13 THE WITNESS: There are creationists
14 and there are creation scientists or scientific
15 creationists. The latter use the Book of Genesis as
16 the criterion by which to judge the validity of any
17 science, so they interpret by superimposing upon the
18 biblical text scientific expectations. They interpret
19 the biblical text, especially Genesis, as
20 scientifically accurate.

21 BY MR. THOMPSON:

22 Q And in contrast with intelligent design,

00135

1 theorists, they do not build their theory upon holy
2 scripture; is that correct?

3 A The creationists do build their theory upon
4 scripture.

5 Q The intelligent design theorists do not?

6 A The intelligent design theorists, at least
7 some of them -- there are many different types of
8 intelligent design theorists, including creationists,
9 but there are advocates of intelligent design who do
10 not start with scriptural text as the framework for
11 their ideas.

12 Q In fact, there are atheists who are
13 advocates or who believe in intelligent design?

14 A I don't know of any. David Berlinski might
15 be somebody who is taken in by the intelligent design
16 people, but I don't think that he has ever
17 affirmatively declared intelligent design --
18 intelligent design as the foundation of life.

19 Q What about the philosopher Anthony Flew;
20 wasn't he an atheist?

21 A Yes, he was an atheist.

22 Q And then he --

00136

1 A He has recently wondered how biological
2 phenomena could be explained without the complicity of
3 a creator.

4 Q And he has publicly at least accepted
5 intelligent design theory, has he not?

6 A I don't think so. I think he has been more
7 cautious than that. I think it's more that the
8 intelligent design people have taken him in than he
9 has taken in the intelligent design community.

10 Q Well, to what degree, then, do you think he
11 has accepted intelligent design theory then?

12 A I don't know that he's even that familiar
13 with so-called intelligent design theory. He has
14 spoken just very vaguely about how the complexity in
15 living phenomena seem to him to require some
16 explanation that science, including Darwinian science,
17 has not been able to give.

18 Q Has he said that that complexity points him
19 to an intelligent design?

20 A I think the most he would say is that -- as
21 far as I understand the news media and reports about
22 it, I think the most that he has said is that it

00137

1 suggests that something more than just chance and
2 blind, natural processes would have had to bring about
3 the complex living phenomena.

4 Q And that kind of conclusion is contrary to
5 Darwinian theory, is it not?

6 A No, I personally do not think so. I think
7 what he's doing is drawing a philosophical conclusion,
8 and, in fact, he's very close to Darwin in the fact
9 that he appeals to a deistic god, that is, a god who
10 is very remote and who explains the general laws and
11 is somewhat -- something that we have to appeal to to
12 give an ultimate explanation, but it's not the God of
13 Christianity, it's not the God of the Bible that
14 Anthony Flew is referring to here. It's something
15 very close to what Darwin meant when he referred to
16 the creator.

17 Darwin himself probably never completely
18 gave up a deistic notion of God, that is, a god who
19 creates the universe, creates its fundamental laws but
20 pretty much lets it run on its own. That's the same
21 kind of god that Anthony Flew is talking about, so
22 it's much closer to Darwin's understanding.

00138

1 Q Would that still be a religious concept?

2 A Yes, I think it's a religious concept, sure,
3 uh-huh, yes. And that's why it does not belong in
4 science.

5 Q Well, maybe I'm interpreting what you said,
6 but basically a deistic concept would mean maybe there
7 was a god that started it all --

8 A Right.

9 Q -- sort of a first cause and then let it
10 happen?

11 A Yes.

12 Q Isn't that somewhat of the same kind of
13 first cause that Aristotle talked about?

14 MR. WILCOX: Objection, vague, "isn't
15 that somewhat of the same kind." Are there any
16 similarities?

17 THE WITNESS: Well, there are vague
18 similarities.

19 BY MR. THOMPSON:

20 Q Okay. Didn't Aristotle talk about the first
21 cause?

22 A The first cause and the unmoved mover --

00139

1 Q Yes.

2 A -- who was interested more in contemplating
3 his own glorious, divine essence than actually being
4 involved in the world.

5 Q Well, isn't that somewhat of the concept
6 that you have of God, that you've explained in your
7 book Deeper Than Darwin?

8 A No, absolutely not. The God that I believe
9 in is deeply involved and is cosufferer with life and
10 its struggle throughout the evolutionary process.

11 Q Does he intervene in the world?

12 A To use the word intervention is a very, very
13 vague term. To say that there is divine action and
14 divine influence in the world, I believe so. But to
15 say that this is of the same kind of causality that
16 science deals with or that intelligent design appeals
17 to, no, that's not what I mean.

18 Q Well, does your definition of God mean that
19 God is outside of nature?

20 A I don't say -- use the word "outside." I
21 would say distinct from nature but intimately involved
22 with nature. God transcends the world and God is not

00140

1 identical with nature, but the God of the Bible, the
2 God that I believe in as a Christian and as a Catholic
3 is deeply involved in nature, and we know this God not
4 as above nature but in and through nature.

5 Q Does God change the laws of nature?

6 A When you talk about nature, nature can
7 include many universes other than this one. That's
8 the natural world, too. That's become a reasonable
9 hypothesis in contemporary quantum theories of
10 creation.

11 The laws that pertain to those worlds would
12 probably be different from the laws that pertain to
13 ours, so -- and over the course of many, many millions
14 and billions of years, nature itself could possibly
15 alter its habits. We don't know. As scientists we
16 deal with such a small cross-section of cosmic
17 history, but we do believe as scientists that the
18 universe -- the present universe adheres to laws or
19 habits, I like to call them, that have been inherent
20 in nature from the beginning.

21 Q I want to direct your attention to the
22 concept of a scientific theory. What would be your

00141

1 definition of a scientific theory?

2 A Scientific theory is a set of concepts that
3 organizes the data of scientific discovery into an
4 intelligible, conceptual framework that can be tested
5 empirically.

6 Q Would you agree with the statement, and I'm
7 quoting from the policy, a theory is defined as a
8 well-tested explanation that unifies a broad range of
9 observations, end of quote?

10 A Yes, in general I think I can accept that.

11 Q Okay.

12 A But I would only add that it unifies them in
13 such a way as to allow them to be continually tested
14 against empirical data and new data that keeps coming
15 in.

16 Q Then you would accept the next statement I'm
17 going to read: Because Darwin's theory is a theory,
18 it continues to be tested as new evidence is
19 discovered. Do you agree with that statement?

20 A Yes.

21 Q Okay. "A theory is not a fact." What about
22 that statement?

00142

1 A A theory is a set of insights. A fact --
2 let me define a fact. A fact is a product not of
3 seeing but of judging. The way the mind works is to
4 start with empirically evident data. Secondly, the
5 way the mind works, including the scientific mind, is
6 to form hypotheses and theories to try to make sense
7 of that data so that we can get insight into that
8 data.

9 But that's not enough for science. Science
10 has to go and keep testing the theory against the
11 data, and if it finds that the theory corresponds
12 adequately to the data, then science makes the
13 judgment that the theory corresponds to the data and
14 that's a fact. That's where fact comes in as a
15 product of judgment, not of understanding.

16 Q Right. And did you read Behe's report --
17 expert witness report dealing --

18 A Not.

19 Q -- with --

20 A -- this --

21 Q -- theory?

22 A Not this -- not this particular one unless

00143

1 it's a duplication of other things that I've read by
2 him in the past. (Witness reviews document.) No, I
3 did not read this particular one. If this is a new
4 piece, I didn't read it.

5 Q In his report he indicates that a theory is
6 a singular word applied to a body of multiple,
7 distinct claims -- that's the headline. And then he
8 says, It is critical to realize that in science the
9 word theory in the singular may be applied to a body
10 of multiple, logically separable claims, some of which
11 may turn out to be true and others false.

12 Do you agree or disagree with that
13 statement?

14 A Yeah. The only thing I would -- yes, the
15 only thing I would add is that he's left out the word
16 empirical and talked about logical. Science is more
17 than logic. It's also observation.

18 Q Okay. So adding the word observation -- the
19 concept of observation, I guess, you would agree with
20 his theory; is that correct?

21 A Read that again.

22 Q Okay. It is critical to realize that in

00144

1 science the word theory in the singular may be applied
2 to a body of multiple, logically separable claims,
3 some of which may turn out to be true and others
4 false -- and then I'll continue -- which can vary
5 widely in the strength of the evidence supporting them
6 and the ease with which they can be tested.

7 A I'm not comfortable with that. I'm not
8 comfortable with that, especially with the idea that
9 the elements of a theory are logically -- potentially
10 logically inconsistent.

11 Q You would agree that Darwin's theory has
12 changed over time; is that correct?

13 A No, I would agree --

14 Q The concept of Darwin's theory has changed
15 over time?

16 A Darwin's theory has not changed. Theories
17 of biological evolution have evolved. What we refer
18 to today as Darwinian evolution is not exactly the
19 same as Darwin's Theory of Evolution; although, it's
20 in many ways -- in many ways it is similar but other
21 things have been added.

22 Q Right. He had no concept of genetics at

00145

1 that time?

2 A He had no concept of how inheritance takes
3 place.

4 Q Correct.

5 A He had his ideas about it, but the ideas
6 have turned out to be wrong.

7 Q So at one point, going back to Darwin's
8 time, although he had this theory, part of it proved
9 to be wrong?

10 A The part that has -- the theory has an
11 element of how descent inheritance takes place, and it
12 has an element of what the mechanisms of change over
13 time are. The mechanisms of change over time have not
14 been altered. They've been enhanced, actually, by new
15 discoveries. But the actual -- his ideas on how
16 descent takes place and his notion of inheritance has
17 evolved.

18 Q You have eluded to various aspects of what
19 we call Darwin's Theory of Evolution, and according to
20 Meyer's report, he cites that Ernst Mayr --

21 MR. WILCOX: I'm sorry. You're
22 referring to whose report?

00146

1 BY MR. THOMPSON:

2 Q Behe's report, expert report. But he cites
3 Ernst Mayr --

4 A It's Mayr.

5 Q -- M-A-Y-R -- Mayr?

6 A Ernst Mayr.

7 Q Okay. He claims -- who was an evolutionist
8 who claimed that what is commonly called Darwin's
9 theory actually contains at least five distinct
10 claims. Are you familiar with his --

11 A I've read that, but I can't -- I can't list
12 the five elements at this moment.

13 Q Okay. Let me read them for you and see if
14 you agree or disagree with them.

15 A Okay.

16 Q The five separate claims as -- one,
17 Evolution as such: This is a theory that the world is
18 not constant nor recently created nor perpetually
19 cycling but rather is steadily changing and the
20 organisms are transformed in time.

21 A Yes, I agree with that.

22 Q You agree with that?

00147

1 A Yeah.

2 Q The second separate claim of so-called
3 Darwin's theory is common descent. This is the theory
4 that every group of organisms descended from a common
5 ancestor and that all groups of organisms, including
6 animals, plants and microorganisms, ultimately go back
7 to a single origin of life on earth.

8 Do you accept that as another claim?

9 A I accept that. Although I'm not absolutely
10 certain about that, I can accept that.

11 Q Okay. This is what Ernst Mayr was saying --

12 A Right, right, right.

13 Q -- as to what the five different claims are
14 under Darwin's theory.

15 And then the third one is, Multiplication of
16 species: This theory explains the origin of the
17 enormous organic diversity. It postulates that
18 species multiply either by splitting into daughter
19 species or by budding, that is, by the establishment
20 of geographically isolated founder populations that
21 evolve into new species; is that --

22 A I agree with that with the proviso that

00148

1 there may be other mechanisms involved in
2 diversification that he's not mentioned here.

3 Q Okay. And the fourth claim -- separate
4 claim under Darwin's theory is gradualism. According
5 to this theory, evolutionary change takes place
6 through the gradual change of populations and not by
7 the sudden -- I can't -- salta --

8 A Saltation.

9 Q -- saltational production of new individuals
10 that represent a new type.

11 Do you agree with that claim?

12 A Yes, in general. Gradualism simply means
13 change over time, and saltationism refers to almost
14 magical or miraculous transformations that don't
15 require long periods of time. There's an old saying
16 that nature does not like leaps, natura non fecit
17 saltum.

18 Q Your Catholic upbringing is coming out.

19 A My Italian pronunciation of Latin, natura no
20 fecit saltum.

21 Q And the fifth claim is the claim of natural
22 selection. According to this theory evolutionary

00149

1 change comes about through the abundant production of
2 genetic variation in every generation. The relatively
3 few individuals who survive, owing to a particularly
4 well-adapted combination of inheritable characters,
5 give rise to the next generation.

6 A Yes.

7 Q Do you agree --

8 A Yes.

9 Q -- that is a claim --

10 A Yes.

11 Q -- under Darwin's --

12 A Yes.

13 Q -- Theory of Evolution?

14 A Yes.

15 Q And do you also understand that advocates of
16 intelligent design, like Michael Behe, only focus
17 their attention on the fifth claim, and that is the
18 claim of natural selection.

19 A That's not accurate. There are intelligent
20 design advocates such as Jonathan Wells who deny
21 common descent, also.

22 Q Correct. That's why I mention Michael Behe.

00150

1 Are you familiar with the idea that Michael Behe does
2 not have any problem with common descent --

3 A Right.

4 Q -- but he --

5 A Or so he says.

6 Q Right. And he says his theory of
7 intelligent design only is critical of the natural
8 selection aspect of Darwin's theory. Is that a
9 correct statement?

10 A I believe so. That certainly sounds --
11 sounds characteristic of Behe's approach.

12 Q And I think you raise a good point when you
13 say there is some that don't believe in that, and I
14 guess one of the issues for us lawyers is how do we
15 define these various camps, because within the camp,
16 there are many variations --

17 A That's right.

18 Q -- on the issues that are at stake here.

19 A Yes.

20 Q Is there a way that you would define these
21 camps that would be more intelligible for us?

22 A Well, the -- the thing that's important for

00151

1 this case to keep in mind -- and this is something
2 that they all agree with -- is that, scientifically
3 speaking, natural selection and any other Darwinian
4 factors involved in life are not adequate to explain
5 the design in living things, and I think that's really
6 the important point to focus on.

7 And my point has been that, scientifically
8 speaking, natural selection Darwinian explanations are
9 quite enough, but that theologically speaking there's
10 room to look at deeper levels of explanation than any
11 science is able to explore.

12 Q What is the distinction between Darwinism
13 and neo-Darwinism?

14 A As I understand it, Darwinism is a view that
15 natural selection of undirected variations is the
16 mechanism of -- is the explanation of living
17 phenomena, but there are differences in the Darwinian
18 camp as to how deeply explanatory natural selection
19 is.

20 For example, Stephen J. Gould argues that
21 there are random or contingent events that occur in
22 natural history such as the meteorite impact that

00152

1 wiped out the dinosaurs 65 million years ago opening
2 up niches for mammalian development that are also
3 necessary to talk about when we try to explain the
4 diversity of life that we have today so that natural
5 selection even for Gould is not enough. And he refers
6 to people like Richard Dawkins as hyper-Darwinists
7 because they want to explain all characteristics of
8 living beings in terms of their adaptive function that
9 they performed at one time or another.

10 So your -- your -- I haven't finished
11 answering your -- your question --

12 Q Go ahead.

13 A -- again was?

14 Q How can we -- the distinction between
15 Darwinism --

16 A Oh, and --

17 Q -- neo --

18 A -- neo-Darwinism.

19 Q -- Darwinism. Yeah.

20 A Okay. The distinction is that neo-Darwinism
21 is a term used to refer to what's called the modern
22 synthesis; the Darwinian recipe for evolution and our

00153

1 modern understanding of the gene as the unit of
2 inheritance. It's called neo-Darwinism because Darwin
3 himself knew nothing about genes as the unit of
4 inheritance. That was the idea that Gregor Mendel and
5 then subsequently the history of the science and
6 genetics brought to the surface.

7 And as a result of that, Darwinism, which
8 sort of went into a kind of eclipse at the beginning
9 of the 20th century, came back stronger than ever
10 because we found the mechanism of change, the gene and
11 the mutations of genes as the raw material, if you
12 will, for evolutionary diversity.

13 Q When you say Darwinism went into an eclipse,
14 what do you mean by that?

15 A There -- because it didn't have a good
16 explanation of heredity at the beginning of the 20th
17 century, scientists were looking for other ways of
18 explaining diversification of life across time. Some
19 were experimenting with Lamarckianism, and vitalism,
20 too, was something that crept into some scientific
21 ideas. Vitalism is the view that some special
22 extranatural or supernatural force has to enter into

00154

1 the universe to elevate inanimate matter to the level
2 of living stuff.

3 So that was kind of, I think, an
4 illegitimate appeal to philosophy and science itself.

5 Q Which brings back the question, science has
6 never figured out how life came out of nonlife; is
7 that correct?

8 A The details of how that occurred have yet to
9 be worked out. In fact, there's much more -- we know
10 more about the origin of the universe than we do about
11 the specifics of the origin of life, but my point is
12 that we should leave plenty of room for purely
13 naturalistic explanations of that event as well,
14 because in my view of layered explanation, if we find
15 that life can be explained chemically or
16 thermodynamically or astrophysically, that does not
17 compete with, that does not interfere with a
18 theological affirmation that life came about because
19 of the creativity of God.

20 Q I think at one point you indicated that
21 Darwin or Darwin's Theory of Evolution changed
22 people's concept of God.

00155

1 A Any science can change people's concept of
2 God. Copernicus changed our concept of God.

3 Q What about you personally?

4 A Yes, I'm -- I'm not a flat earther.
5 Copernicus has changed my understanding of God. But
6 personally my immersion in evolutionary theory has had
7 the effect of allowing me to think of God in what I
8 would say is a much more biblical way than I did
9 before I encountered Darwinism or before I studied it
10 in depth.

11 Q There are some creationists, in quotes, that
12 will say that there can be no compatibility with
13 Darwin's theory in any concept of God. Did you
14 understand that?

15 A Yes.

16 Q And there are some Darwinists who say the
17 same thing, that there can't be any compatibility
18 between Darwin's Theory of Evolution and God?

19 A But they're saying that not as Darwinian
20 scientists; they're saying this as Darwinian
21 materialists or Darwinian naturalists, that is,
22 philosophically. They jump from science to

00156

1 philosophy.

2 Q But it's the logical conclusion of their
3 scientific beliefs?

4 A It's not, no. It's not at all because I
5 have the same scientific beliefs as they do -- or I
6 shouldn't say beliefs -- the same scientific
7 understanding of the natural process as they do. It's
8 just that my layered understanding of explanation,
9 which they don't have, allows me to affirm the science
10 fully and at the same time allows me to believe in
11 every item of the Nicene Creed the way other
12 Christians do.

13 Q But in some logical process, even though you
14 say it's no longer science but theology or metaphysics
15 or religion, they come to the conclusion that Darwin's
16 Theory of Evolution or neo-Darwinism excludes God?

17 A They do, but that -- you have to explore
18 what they mean by God, and what they mean by God is at
19 least this idea of some sort of designing engineer,
20 which I don't think is the biblical understanding of
21 God.

22 And, so, it's because they can't reconcile

00157

1 Darwinism or evolutionary biology with a specific
2 notion of God as intelligent engineering -- and they
3 use terms like engineering and design -- that they
4 reject the evolutionary view of things, just as there
5 are some -- in fact, many evolutionists who reject the
6 idea of God because they have exactly the same concept
7 of God as their intelligent design and creationist
8 opponents do. In fact, many, many evolutionary
9 biologists are still creationists at heart in their
10 understanding of ultimate reality.

11 Q But have you heard the accusation against --
12 I think it's Ken Miller, the biology textbook writer,
13 that he is a creationist at heart?

14 A Creationist can mean a lot of things.
15 Anybody who believes in a creator god could be called
16 in a broad sense a creationist, and sometimes that
17 label is thrown at people in such a fashion, but
18 creationist in the sense that it is used in this
19 controversy over Darwin means something quite
20 different.

21 Creationists in this sense do share the
22 belief of all theists that there is a divine creator,

00158

1 but then after that they go on to take the story of
2 creation in the Bible as literally true, and Ken
3 Miller would never do anything like that.

4 Q Right. Is there a difference between
5 Darwin's Theory of Evolution and evolution?

6 A Sure.

7 Q What is the difference?

8 A That Darwin's Theory of Evolution is a way
9 of organizing the information that leads us to
10 recognize that there is change -- cumulative change
11 over time.

12 Q Would you agree that even most intelligent
13 design theorists would agree with evolution if we're
14 only talking about change over time?

15 MR. WILCOX: Objection.

16 THE WITNESS: I'm not sure that even
17 all of them would, but many of them do, yes.

18 BY MR. THOMPSON:

19 Q According to Behe and Dembski, the issue
20 that they're addressing is not the issue of change
21 over time --

22 A Right.

00159

1 Q -- is that correct?

2 A In the case of those two, that's true.

3 Q Yeah. Okay. And that gets back to how
4 difficult it is trying to focus on what is intelligent
5 design and the big tent that it has and also the big
6 tent that Darwin's Theory of Evolution has.

7 MR. WILCOX: To the extent that that
8 might be construed as a question, I object to it.

9 MR. THOMPSON: We're just having a
10 pleasant conversation here.

11 BY MR. THOMPSON

12 Q I'm going to return to your expert opinion
13 report. In your expert opinion report, Exhibit 2, you
14 define religion. Do you see that?

15 A Yes.

16 Q Actually you have a few definitions of
17 religion there, and I'm not sure --

18 A Three.

19 Q Three definitions of religion. Which
20 definition of religion do you base your opinion on?

21 A Well, the third definition of religion
22 includes the first two, but the first two do not

00160

1 necessarily include the third. That's why I make
2 these distinctions. So that the first, Surrender
3 one's mind and heart to whatever is considered to be
4 of ultimate importance, yes, I accept that, but I
5 would specify it by numbers two and three, that
6 ultimate reality is also a great mystery which enfolds
7 us and grasps hold of us more than we grasp hold of
8 it. And, thirdly, I would attribute to that mystery
9 the characteristics that are represented by the
10 biblical tradition as God who makes promises and who
11 is personal and intelligent. That's where the word
12 intelligent comes in. Intelligence is a
13 characteristic of persons. That's where we first
14 experience it.

15 Q Have any other theologians accepted your
16 definitions of religion?

17 A It's not so much that they've accepted mine
18 but I have summarized theirs.

19 Q Okay. So when you talk about intelligent
20 design as being religious, it is falling into one of
21 these --

22 A All three --

00161

1 Q -- definitions?

2 A All three definitions. It's religious in
3 all three senses of the term.

4 Q And your three definitions of religion is
5 the basis for you to conclude that intelligent design
6 is religious; is that correct?

7 A It's -- it's a -- an abstract sketch of my
8 reasons for concluding that intelligent design is
9 religious, yes.

10 Q I'm not sure I understand. What does
11 "abstract sketch" mean?

12 A Well, by that I mean it's a quick and dirty
13 summary of much -- what I can -- what I would hope
14 would be a much deeper understanding of religion than
15 I'm able to present in one paragraph.

16 Q Well, does intelligent design in any way
17 discuss the characteristics of God?

18 A The intelligent design --

19 Q Theory.

20 A -- as used by Behe and Dembski?

21 Q Yeah.

22 A It refrains from talking about specific

00162

1 characteristics of God other than the notion of an
2 ultimate intelligence that underlies the process of
3 life.

4 Q You know, it's interesting. They talk about
5 intelligent cause or intelligent agency in many of
6 their descriptions.

7 A Uh-huh.

8 Q Have you read that?

9 A Yeah.

10 Q Could it be that this intelligent cause or
11 intelligent agency is nothing but some matter that we
12 haven't yet discovered?

13 A It could not be for them because they have
14 rejected materialism which is what you've just
15 defined. Materialism is the view that matter is all
16 there is; that matter is the mother of all things.
17 The word matter -- matter comes from mater, which
18 means mother. They reject materialism, so they would
19 themselves reject that idea.

20 Q But in looking at the same kind of growth of
21 Darwin's theory to present day, they may not have
22 discovered that particular intelligent matter that

00163

1 organizes these things; isn't that true?

2 A No. Intelligent design -- the word --
3 intelligence itself is a concept that requires
4 explanation. So to appeal to something as an
5 explanation without giving an explanation of it itself
6 scientifically is circuitous. It begs the question
7 from a scientific point of view.

8 Q See, the reason I raise that is because I
9 think you talk about genes having this -- almost
10 mind-like characteristics of surviving.

11 A Yes.

12 Q Of making sure --

13 A I don't talk about genes that way.

14 Darwinians talk about genes in that way, and I take
15 the Darwinians to task for projecting subjectivity
16 into what should function as purely objective,
17 subjectless entities as far as science is concerned.
18 So they themselves are violating principle of science
19 when they do that.

20 Q Keeping in mind that their -- you know,
21 their great dislike for the theory of intelligent
22 design, yet they are postulating some matter that

00164

1 basically has a mind of its own.

2 A Not only that, they are projecting
3 purposiveness into the natural world when science
4 itself, methodologically, tells us to leave out
5 purposiveness.

6 Q What does that mean, purposiveness?

7 A Having a goal in mind; teleology it's
8 called. Matt Ridley, for example, says, yes, we're
9 using teleological language. My view is that they are
10 just as much in violation of scientific method as are
11 the intelligent design people.

12 Now, the Darwinians specify that they're
13 talking only figuratively and allegorically or
14 metaphorically but that they don't literally mean that
15 there's intelligence involved here. But they often,
16 nonetheless, give the impression that there is
17 something intelligent at work. But that's something
18 they, themselves, are often embarrassed at, and
19 they -- the purists among them would not speak in
20 language like that, so I'm just talking about some
21 Darwinians.

22 Q But the point is they're describing a

00165

1 particular action in terms of intelligence.

2 A Yes, they're using the -- our own experience
3 of intelligent purposiveness as a kind of verbal and
4 metaphorical framework or idea, rather, to try to get
5 across a particular point. And the particular point
6 is this: The particular point is that the unit of
7 selection in evolution is not the organism or the
8 group but it's pools of genes.

9 When Dawkins, for example, in the selfish
10 gene and Matt Ridley and others talking about genes
11 striving to get into the next generation, if they were
12 here, they would say we don't literally mean that;
13 that there's anything intelligent going on here. It's
14 a purely blind process, and it's just a figurative and
15 imprecise way of speaking. But I take them to task
16 for their imprecision just as I take -- I try to be
17 consistent here -- I take to task the intelligent
18 design people for injecting something subjective
19 into --

20 Q Because there's a commonality there, isn't
21 there, between intelligent design theorists and those
22 kind of --

00166

1 A There's a --

2 Q -- Darwinian --

3 A There's a loose kind of --

4 Q -- people --

5 A -- acknowledge --

6 (The Reporter asks for clarification.)

7 BY MR. THOMPSON:

8 Q There's a commonality between the thinking
9 of the intelligent design theorist and the Darwinist
10 who use those kinds of words like "striving" when
11 they're describing genes in that they're using human
12 terms that we can understand to describe something
13 that's going on.

14 MR. WILCOX: Objection.

15 THE WITNESS: Science cannot avoid
16 using terms -- even the term energy, mass, motion,
17 force -- force, for example, gravity, these are all
18 terms that come from human experience; gravitas is the
19 Latin for experience of heaviness. That human
20 experience was used by physics to refer to a specific
21 characteristic of nature and the tendency of bodies to
22 attract one another.

00167

1 But that's not the important thing in
2 science. Science as a language always has terms that
3 come from human experience. The important thing for
4 science is to be able to quantify and measure
5 processes as much as possible. The imprecise language
6 that Dawkins and others use is a way of -- it's a
7 pedagogical device used to get us to think about
8 nature in a particular way.

9 But if you press them on this -- here's
10 the difference. If you press them on the issue of do
11 you really mean -- do you really believe that there
12 are subjects there that are striving actually to get
13 into a natural world, they would back off. If you
14 press the intelligent design people, do you really
15 believe there's something intelligent going on here,
16 that there's some sort of intelligent design going on
17 here, they would not back off.

18 BY MR. THOMPSON:

19 Q And that might be true, but -- but what
20 you're -- what you're seeing as far as intelligent --
21 molecular structures that look intelligently designed
22 is some machine-like quality, are you not?

00168

1 A Yes, and even the Darwinians will admit that
2 there's a machine-like characteristic.

3 Q Right. And, so, the intelligent designers
4 are using terms that we would normally associate with
5 putting a machine together; correct?

6 A Yes, but --

7 Q In fact -- in fact, Francis Crick
8 continually said, quote, Biologists must constantly
9 keep in mind that what they see was not designed but
10 rather evolved, end quote. Why was he saying that?

11 MR. WILCOX: Objection. You said he
12 continuously was saying that. I'm not sure what you
13 mean by that.

14 BY MR. THOMPSON:

15 Q We know he said it once.

16 A Well, what he's doing is what every good
17 scientist would do at that point, and that's to allow
18 as much as possible for naturalistic explanations and
19 not resort to miraculous interventions when there's
20 still plenty of room for natural explanation.

21 Q Michael Behe would claim that he kept on
22 saying that because they had to remind biologists that

00169

1 what looked designed was not, in fact, designed; is
2 that correct?

3 A That was not designed purposively by an
4 intelligent agent.

5 Q Yes. In fact, have you heard this or seen
6 this statement by Bill Gates that talks about the DNA
7 molecule being more sophisticated than any kind of
8 program that his people have ever been able to design?

9 A Yes, by which he means high information
10 content in a DNA molecule.

11 Q Right. And isn't that one of the basis for
12 Bill Dembski's whole structure of the inference of
13 design, the high information content? He goes through
14 a -- a screening process which I don't understand.
15 You probably do better than I do.

16 A Yeah, it's the filter as he calls it --

17 Q Right.

18 A -- the -- the filter of inference; if
19 something can't be explained by chance, then it has to
20 be by law.

21 Q Right. And he places that in his book
22 called Design by Inference. I don't know if you've

00170

1 read that. Have you read that book?

2 A Not -- I'm not sure whether I've read that
3 one. I've read parts of Mere Creation and other
4 things that he's written, but I have read essays --
5 for example, he has an essay in a book that I have an
6 essay in called Debating Design, and I believe he
7 talks about the explanatory filter there, but he talks
8 about it in a number of places as well.

9 Q And this explanatory filter is something
10 that he's replicated that other mathematicians can
11 check --

12 A Right.

13 Q -- is that correct?

14 A Yes. And the point of it is to emphasize
15 the informational character of life, but even the most
16 hard-core Darwinians agree there is an informational
17 aspect to life. The question is how to go back
18 explaining it, and my impression is that biology --
19 most biologists -- in fact, almost all of them would
20 say, let's see if we can't get a purely natural
21 explanation for information before we jump to the idea
22 of intelligent design.

00171

1 And the natural explanation seems to many of
2 them to be quite obvious; that the informational
3 sequence of letters and the code, the A, T, C and G,
4 the components that make up the nucleotides, that that
5 specific sequence is itself the result of a filtering
6 process that took place naturally over the course of
7 many, many millions of years in which unviable
8 sequences -- informational sequences were not selected
9 for survival and reproduction. And my own view is
10 that let's take -- let's allow -- as a theologian,
11 let's allow naturalistic explanations to be carried as
12 far as they possibly can and bring in theology at some
13 completely different level of explanation.

14 Q But don't you believe that Dembski's
15 mathematical test of probabilities where he takes for
16 granted the earth being 4 billion years old and
17 through some mathematical formula comes to the
18 conclusion that the probabilities are so astronomical
19 that these various molecular machines would have been
20 formed by chance that it's virtually impossible? Now,
21 that's a scientific -- would you consider that a
22 scientific concern?

00172

1 A No, that's a philosophical conclusion. All
2 science can do is detail the material and efficient
3 causes that produce a particular outcome to make the
4 leap to -- to say, for example, that this
5 improbability requires some explanation that
6 scientists don't ordinarily deal with could be quite
7 legitimate as a claim, but not as a scientific claim.

8 Q But it -- he doesn't have to make a
9 theological claim when he concludes that it is
10 improbable that a particular molecular structure
11 occurred by natural selection. That's a scientific
12 claim, is it not?

13 A I wouldn't classify that particular
14 inference as a scientific one.

15 Q Is it a theo --

16 A It's --

17 Q Excuse me. Go ahead.

18 A It's metaphysical or implicitly
19 metaphysical. It's a view of reality. It's a world
20 view that's implied in that statement, and that world
21 view is one that says ultimately we need an
22 intelligent explanation for phenomena.

00173

1 Now, there's a sense in which my own world
2 view -- theological world view would say that
3 ultimately we do need an explanation for certain
4 constraints within which natural processes work, but I
5 don't want anyone to misconstrue my statement that
6 there is as a scientific statement. I want that to be
7 understood to be a theological and/or philosophical
8 inference rather than a scientific one that goes
9 outside the bound of scientific method.

10 Q We were talking about intelligent design
11 being religious and falling within your three
12 definitions of religion in your expert report.

13 A Yes.

14 Q I think we discussed the fact that
15 intelligent design theorists do not necessarily
16 ascribe to any particular characteristic of the
17 intelligent designer; is that correct?

18 A Of God you mean?

19 Q Well --

20 A That's what you said earlier.

21 Q It may be God. Okay. Let's change it to
22 the intelligent designer.

00174

1 A The word itself -- the term itself
2 inevitably logically entails certain characteristics;
3 intelligence and the capacity to design purposively.
4 So, yes, it does entail specific characteristics that
5 we normally have associated with the deity.

6 Q Well, didn't Crick talk about some
7 extraterrestrial salting the earth?

8 A But they're purely natural. The panspermia
9 theory is not in any way a theological theory. It's
10 an attempt to explain approximately how life could
11 have taken place on earth and still leaves open the
12 question, well, how did the first living cells that
13 seeded the earth become part of the natural world.
14 And a good scientist would try as hard as possible to
15 explain such an event if it is conceivable in chemical
16 terms or thermodynamical terms or astrophysical terms,
17 but not in theological terms.

18 Q Yeah, but Crick wasn't developing it in
19 theological terms.

20 A No. Right.

21 Q You were just saying that some
22 extraplanetary --

00175

1 A Yeah, he was trying to trace --

2 Q -- individual --

3 A -- possible cause and effect relationships
4 back to a wider context than origin of life studies
5 that he usually deals with.

6 Q The other -- so that the intelligent
7 designer could be God, a concept of God, or it could
8 be some other extraterrestrial being?

9 A Well, it wouldn't be a concept of God. A
10 concept of God is not an agent. It could be an
11 intelligent design suggests -- the term itself
12 suggests what God has always meant in western
13 philosophy and theology. That's why I say it's
14 irremediably religious and theological.

15 Q That was -- one definition was the western
16 concept of God, but your other definitions were a
17 little more vague than that.

18 A Yes, there can be -- even belief that matter
19 is all there is -- fits my first definition of
20 religion, and that's why, as I've been saying all day,
21 I'm opposed to any science or -- scientist or science
22 teacher making statements to the effect that matter is

00176

1 all there is or even saying that Darwinian
2 explanations are the ultimate explanation of design.
3 I object to that because those two are statements that
4 refer implicitly to some ultimate level of reality.
5 Science doesn't deal with ultimate realities. It
6 deals with proximate causes.

7 Q Going further along this line of thought
8 about what is religion and referring it to intelligent
9 design, you would agree with me, will you not, that
10 intelligent design does not have moral code; is that
11 correct?

12 A Not directly, but indirectly, yes.
13 Indirectly it's telling us that, in effect, the good
14 life would consist of conformity to intelligent
15 design; that we would make our lives ordinary and
16 purposive, so implicitly any statement about ultimate
17 reality there are implicit -- there's an implicit
18 basis for ethics or kind of ethics.

19 Q But not one of the intelligent design
20 theorists has actually come out with a written moral
21 code saying this is what we believe; is that correct?

22 A As far as I know, they have not explicitly

00177

1 drawn out the implications of their appeal to
2 intelligent design, and I'm not saying that they have.
3 All I'm saying is that there are implicitly ethical
4 implications in any world view.

5 Q Well, that's the same -- that holds true
6 also for the theory of evolution; isn't that correct?

7 A No, because I don't consider the theory of
8 evolution a statement about the ultimate character of
9 reality. The theory of evolution is a scientific
10 theory, and science abstracts from, leaves out,
11 considerations of ultimate explanations and of
12 purpose.

13 If you find an evolutionary biologist saying
14 that evolution is the ultimate context for our
15 self-understanding and our existence, yes, there are
16 ethical implications there, radical ethical
17 implications. But that is not science; that's
18 philosophy; that's a religion almost.

19 Q Well, if you accept it as some Darwinists
20 believe that we are here as a result of natural
21 selection, okay, and that entails the survival of the
22 fittest, isn't there the same kind of implicit moral

00178

1 code being advanced by that concept?

2 A Not at all. In fact, Stephen J. Gould
3 himself says that Darwin has liberated us from ever
4 having to search for our basis for morality in the
5 natural world. I don't happen to agree with that, but
6 to answer your question, it's not at all inevitable.

7 It's correct, I think, to say that we are
8 the outcome of natural selection just as it's correct
9 to say that the water is boiling because of molecular
10 motion of H₂O. You could add to that to explain our
11 existence other deep things are going on in reality
12 that science cannot even touch upon and science should
13 leave out. So when Darwinians make Darwinism into
14 their ultimate world view -- and, in fact, many of
15 them do -- there are ethical implications which
16 deserve our -- our deepest suspicion.

17 Q You use the word ethical. What about
18 religious implications?

19 A Well, religion in the first sense of the
20 term is what they're giving us. They are -- it's
21 characteristic of the human person, of human life, to
22 look for some ultimate context in which to situate our

00179

1 thought and our lives. Some Darwinians have done that
2 by making Darwinian explanations the ultimate context
3 of their lives, and, so, yes, there are ethical
4 implications that flow from that. But I think that --
5 that that's -- again, it's a confusion of religion
6 with science.

7 Q Is there a sacred scripture that intelligent
8 design theorists refer to?

9 A Not directly as far as I know; at least I
10 hope they don't.

11 Q Do they have a particular liturgy?

12 A Do they have a particular liturgy? I've
13 been at some of their meetings where things go on that
14 don't go on anywhere else where there's an appeal to
15 certain authority figures that -- that they consider
16 to be almost saints in their collection of heroic
17 figures.

18 Q Who would they be?

19 A I would -- I would think Michael Polanyi for
20 Dembski, for example, has been appealed to; although,
21 as someone who's imitated Polanyi, I think Polanyi
22 would turn over in his grave that -- being appealed to

00180

1 as an authority in this area. But implicitly --
2 implicitly they're appealing to a whole tradition of
3 natural theology as the framework of their whole
4 movement, and that would include people like William
5 Paley and Thomas Aquinas. Aristotle, Thomas Aquinas,
6 these are names that come up often in their discourse.

7 Q But they wouldn't hold the same status,
8 would they, as, say, a priest in the Catholic church?

9 A Oh, I think so, yes. More so. I don't know
10 of too many Catholic intelligent design experts. Behe
11 is the only one I really know of.

12 Q What about --

13 MR. WILCOX: Any question that begins
14 "what about" I'm probably going to object to.

15 MR. THOMPSON: Okay. It's just a
16 conversation.

17 BY MR. THOMPSON:

18 Q Do the intelligent design theorists have a
19 text that is similar to the Bible?

20 A Possibly, but I couldn't specify it. Maybe
21 if I had more time to think about it there might be
22 one that keeps coming up.

00181

1 Q Do they have holidays -- do intelligent
2 design theorists have holidays?

3 A No.

4 Q If you --

5 A Incidentally, I don't characterize -- I
6 never have characterized the intelligent design
7 movement as a religion. All I've said is that the
8 appeal to the notion of intelligent design is
9 nonscientific and religious in nature.

10 Q If you had such concerns about the validity
11 of the theories that Behe expounds in Darwin's Black
12 Box, why would you make your students familiar with
13 it?

14 A It's part of the task of an educator to
15 expose students to the fullest range of positions on
16 issues as possible. In my teaching I never directly
17 come out in defense of any position. I leave that to
18 the students to decide which is the most appropriate
19 position. I do include my own as one, but only one of
20 many possible positions the students could have. And
21 when I grade their exams, I grade them not on the
22 position that they hold but on how fair they are in

00182

1 their exposition of the full spectrum.

2 Q Now, I had asked you earlier if you had read
3 the total policy of the Dover School District as it is
4 stated in the biology curriculum press release, and
5 you indicated you had not.

6 A I don't think that I have.

7 Q Okay.

8 A I might have, but I don't know that I have.

9 Q Okay. And then I think you were reading it
10 during one of the breaks. That's Exhibit Number 3.

11 A I read part of it during a break.

12 Q Right. What I would like you to do right
13 now, Professor, is go through the statement that was
14 to be read to the students just before the -- the
15 ninth grade biology students just before they were to
16 take up the section on evolution, and then I'm going
17 to ask you some questions about that statement.

18 A Where is it?

19 Q It starts right at the bottom of this
20 (indicating) page starting with, "The Pennsylvania
21 academic standards require," and then it goes on to
22 the next page.

00183

1 A (Witness reviews document.) Okay.

2 Q Okay. Keeping in mind that this statement
3 is read to ninth grade biology students just before
4 they begin their section in the biology textbook on
5 evolution, I'm going to ask you sentence by sentence
6 whether you believe that those statements are true or
7 false or objectionable in any way. The first
8 statement is, The Pennsylvania academic standards
9 require students to learn about Darwin's Theory of
10 Evolution and eventually to take a standardized test
11 of which evolution is a part.

12 Do you have any problem with that statement?

13 A No.

14 Q Okay. The next paragraph, Because Darwin's
15 theory is a theory, it continues to be tested as new
16 evidence is discovered.

17 Do you have any problems with that
18 statement?

19 A Yes. The implication is that it's just a
20 theory, and that's not stated explicitly, but that, in
21 light of the whole testimony of the whole document, is
22 objectionable because we should never say just a

00184

1 theory. We should understand a theory as an honest
2 attempt to organize information.

3 Q Well, there is no word "just" in that
4 sentence.

5 A I understand that, but --

6 Q You've added "just."

7 A I think that's implied there in the context
8 of the whole discussion.

9 Q Well, I'm talking about just this paragraph
10 now. The students are not going to be conversant with
11 our discussion.

12 A All right. If it's meant literally, yes, I
13 can accept that.

14 Q Okay. Then the next sentence says, The
15 theory is not a fact.

16 Do you have any problem with that statement?

17 A I do because, once again, the statement
18 itself shows a kind of misunderstanding of what the
19 nature of theory is and what a fact is.

20 Q Let me go further and see if that clarifies
21 that issue. "Gaps in the theory exist for which there
22 is no evidence." Is that an appropriate statement?

00185

1 A That's an entirely inappropriate statement.
2 It's fuzzy. It's logically problematic. Gap is not
3 defined. Gap as the statement goes on turns out to be
4 not a gap in science but a gap between two levels of
5 understanding.

6 Q So you do not believe there are any gaps in
7 the theory for which there is no evidence?

8 A That's what we've been saying all morning.
9 I don't like to use the term gap. There's a whole --
10 there's a whole lot more that we need to know about
11 nature than what we actually know.

12 Q A theory -- the next sentence, A theory is
13 defined as a well-tested explanation that unifies a
14 broad range of observations.

15 Do you have any problem with that?

16 A I can go along with that.

17 Q Okay. Well, does that sentence itself,
18 then, remove the concerns that you have over the use
19 of the word "theory" in the first two sentences?

20 A Not entirely because of this, what follows,
21 and we have to put these sentences in context. We
22 can't just take them as atoms isolated from their

00186

1 environment.

2 The statement goes on to present intelligent
3 design as a theory on the same intellectual or logical
4 plain as an alternative to Darwinian theory. And what
5 I've been saying all day is that they're not on the
6 same playing field; they're not playing the same game
7 by the same rules.

8 Intelligent design is a concept that belongs
9 at the level of metaphysics, religion or philosophy,
10 but not at the level of science. And the implication
11 of the whole paragraph is students should be exposed
12 to alternatives to Darwinian theory. Alternatives --
13 what kind of alternatives? Do they mean alternatives
14 in the area of religion and philosophy or general
15 world view? Are they implying the students should be
16 exposed to a world view other than that that's
17 maintained by materialist Darwinians? See, it's very,
18 very vague and very tendentious. If they understand
19 the intelligent design as an alternative to Darwinian
20 science, then I deeply object to that.

21 Q The next statement on the second page,
22 Intelligent design is an explanation of the origin of

00187

1 life that differs from Darwin's view.

2 Is that acceptable?

3 A Yeah, it differs in the same way that -- to
4 use my example explaining the pot boiling as the
5 consequence of my wanting tea differs from explaining
6 it in terms of molecular motion.

7 Now, what the statement is implying is that
8 we should collapse those explanatory levels down to
9 one playing field, as it were, so that intelligent
10 design can be presented as an alternative to
11 scientific theory. It's an alternative level of
12 explanation. It's not an alternative -- a legitimate
13 alternative to scientific theory.

14 Q The next -- the next sentence is, The
15 reference book, Of Pandas and People, is available for
16 students who might be interested in gaining an
17 understanding of what intelligent design actually
18 involves.

19 Do you have any problems with that sentence?

20 A If it were not given in the context of a
21 scientific classroom, I would say that it is important
22 for the education of all of us, including students, to

00188

1 explore the different levels of understanding that are
2 available to the human mind. I do object to the
3 implication that it should be presented to the
4 students as an alternative to evolutionary biology.

5 Q And then it goes on in the next paragraph,
6 With respect to any theory, students are encouraged to
7 keep an open mind.

8 Do you have any problems with that
9 statement?

10 A No.

11 Q Next sentence, The school leaves the
12 discussion of origins of life to individual students
13 and their families.

14 Do you have any objection to that?

15 A Yes, most families are not qualified, don't
16 have members of families who are qualified to discuss
17 questions relating to the scientific, chemical,
18 physical, astrophysical, thermodynamic understandings
19 of how physical processes take place, so I do object
20 to that.

21 Q Okay. As a standards-driven district --
22 next sentence, As a standards-driven district, class

00189

1 instruction focuses on preparing students to achieve
2 proficiency on a standards-based assessment.

3 Do you have any problems with that?

4 A No.

5 Q Okay. Understanding that that -- what we've
6 just gone through is the sentence -- is the
7 paragraph -- the four paragraphs that are read to
8 students, do have you any opinion regarding the
9 appropriateness of that paragraph being read to ninth
10 grade biology students at the beginning of the
11 evolution class?

12 A Yes, I object to that because of the reasons
13 that I've just detailed in your previous trail of
14 questions.

15 Q Okay. Then the part of the policy which
16 goes on -- it's not a part of what is read to the
17 students -- is as follows: The foregoing statements
18 were developed to provide a balanced view and not to
19 teach or present religious beliefs.

20 A Problematic for this reason: When people
21 write the -- use the expression "balanced view," they
22 are often confusing different levels of explanation

00190

1 being balanced against each other rather than two
2 different scientific theories at the level of
3 scientific explanation being balanced against each
4 other.

5 If there is a legitimate alternative in --
6 within the field of science alone to the Darwinian
7 explanations of life -- and there are post-Darwinian
8 evolutionary accounts that somehow want to modify the
9 Darwinian theory -- I have no objection to balanced
10 treatment at that level. But what the intelligent
11 design community usually means by balanced treatment
12 is to balance the implicit secularism and naturalism
13 that they see in biological expressions with an
14 alternative to that. And the alternative to one
15 metaphysical world view is another metaphysical world
16 view; that's the logical alternative.

17 What they're doing is trying to say that
18 intelligent design fits into the category of science;
19 therefore, we can balance it with the Darwinian view.
20 But if intelligent design, as I've been maintaining,
21 is something that pertains more to world view,
22 theology and religion, then to use the term "balance"

00191

1 is illogical as I've stated in my reasons for
2 objecting to the intelligent design approach.

3 Q Then the statement goes on, which is part of
4 the policy, The superintendent, Dr. Richard Nilsen,
5 has directed that no teacher will teach intelligent
6 design, creationism or present his or her or the
7 board's religious beliefs.

8 Do you have any problem with that, that
9 statement?

10 A Not as such.

11 Q Much of your criticism of the policy
12 statement, the statement that was read to the
13 students, deals with your criticism of intelligent
14 design as not being scientific in nature; is that
15 correct?

16 A Right.

17 Q Okay. But you'll agree that there are
18 people who say -- such as Behe and Dembski and Stephen
19 Meyer who will say that it is scientific?

20 A Yes, I know that.

21 Q Okay. Now, the question -- and if that is
22 the case, why would you expect school districts to

00192

1 have to take sides on this controversial issue?

2 MR. WILCOX: Objection.

3 THE WITNESS: I don't know that I do

4 expect school boards even to get involved in this.

5 What school boards should be doing is making sure that

6 in science classes students are limiting -- teachers

7 are limiting themselves to what is scientifically

8 knowable and that they are making sure the students do

9 not confuse scientific questions with ultimate
10 questions.

11 BY MR. THOMPSON:

12 Q First of all, you agree that this is a
13 controversy, do you not?

14 A The controversy over intelligent design,
15 yes, it's a controversy.

16 Q Yes, it's a controversy between intelligent
17 design and Darwinian evolutionists, is it not?

18 A It's -- logically speaking that's comparing
19 apples to oranges in my view. What is the controversy
20 consists of the fact that the intelligent design
21 people are trying to wedge -- to use their own term --
22 to wedge what is a -- what I consider to be a

00193

1 theological world view into the same explanatory slot
2 that is occupied by, and legitimately occupied by,
3 people practicing scientific method, so that's where
4 the controversy lies.

5 Q Well, I've been attending a lot of debates,
6 and there are scientists debating with scientists over
7 intelligent design and evolution.

8 MR. WILCOX: Objection.

9 THE WITNESS: Well --

10 MR. WILCOX: There's no question. He
11 hasn't asked a question.

12 BY MR. THOMPSON:

13 Q Do you agree with that?

14 MR. WILCOX: That you attended those
15 debates? Why don't you start over and why not use the
16 way lawyers and witnesses usually interact, by asking
17 questions and he provides answers.

18 MR. THOMPSON: Well, I apologize. I
19 believe we're having a conversation, but --

20 MR. WILCOX: Well, we're --

21 MR. THOMPSON: -- for the --

22 MR. WILCOX: -- not having --

00194

1 MR. THOMPSON: -- Record --
2 MR. WILCOX: -- a conversation.
3 MR. THOMPSON: For the Record --
4 MR. WILCOX: We have a court reporter
5 here. This is a -- you have subpoenaed the witness to
6 be here. This is not just a conversation and don't
7 pretend it is.
8 BY MR. THOMPSON:
9 Q Is it true --
10 MR. WILCOX: That would be disingenuous
11 of you.
12 MR. THOMPSON: Well, now you're looking
13 at my motivation.
14 BY MR. THOMPSON:
15 Q Is it true that this dispute involves the
16 scientific community, "this dispute" being intelligent
17 design versus Darwin's Theory of Evolution?
18 A Yes, scientists do not want intelligent
19 design presented as scientific idea.
20 Q And some scientists support the theory of
21 intelligent design; is that true?
22 A They do so, but they do so as persons who

00195

1 are inclined to conflate world view with scientific
2 method.
3 Q Michael Behe in his book does not talk about
4 theology; is that correct?
5 A I think toward the end he does make some
6 quasi-theological statements.
7 Q Isn't it true that he talks about the
8 bacterial flagellum, the cilium, the blood clotting?
9 A Yes.
10 Q All in scientific terms; is that correct?
11 A Up to a point, but there is a point where he
12 becomes nonscientific, and that's in his appeal to
13 intelligent design.
14 Q And that's your opinion; is that correct?
15 A Of course it's my opinion.
16 Q Okay.
17 MR. WILCOX: That's why he's here.
18 BY MR. THOMPSON:
19 Q And your opinion may not carry the kind of
20 weight that you would hope the school board would give
21 it; is that correct?
22 A Quite possibly so.

00196

1 Q Have you ever dealt with a local school
2 district?

3 A Not at the -- not at the level of the school
4 board, no.

5 Q Okay. Have you ever helped a school board
6 devise a policy dealing with curriculum?

7 A No.

8 Q Do you have any problem with school board
9 members determining the curriculum of a school -- of a
10 public high school?

11 A You mean as a general practice in this
12 country?

13 Q Yes.

14 A Not as such, no.

15 Q Okay. Do you --

16 A Not necessarily, I should say.

17 Q Okay. Do you believe that school board
18 members have to have some high degree of scientific
19 sophistication to determine what the policy should be
20 on, let's say, the biology curriculum in the high
21 school?

22 A I believe that there should be at least some

00197

1 members of school boards who know -- who have
2 expertise in -- in what scientific method is. That
3 would be my ideal. I wouldn't demand it of everybody,
4 but I think at least one or two members should be
5 scientifically sophisticated.

6 Q Do you know what kind of requirements there
7 are to become a member of the Dover High School -- the
8 Dover School District School Board?

9 A No, not specifically. No.

10 Q Do you know if any of those requirements
11 involve some kind of sophistication in scientific
12 theory?

13 A No, I do not know.

14 Q And you're aware that the textbook that the
15 school -- ninth grade school students study was Ken
16 Miller's textbook in biology?

17 A I wasn't completely aware of that; although,
18 earlier when you were talking about textbooks, it
19 occurred to me that maybe that was Ken Miller's.

20 Q Okay. And Ken Miller is a respected
21 biologist; is that correct?

22 A Yes.

00198

1 Q And, therefore, the section on evolution
2 that involves several chapters is in some way tainted
3 by this one-minute statement; is that your opinion?

4 A By which one-minute statement?

5 Q The statement that was read to the students
6 contained in Exhibit 3.

7 A That his biology textbook is tainted? I
8 don't understand.

9 Q The students reading three chapters --
10 there's at least three chapters in the textbook that
11 relate to Darwin's Theory of Evolution.

12 A Right.

13 Q The students study those three chapters.

14 A Right.

15 Q Is it your opinion that by reading this
16 four-paragraph statement contained in Exhibit 3 that
17 the students' knowledge of evolution would be tainted?

18 A Would be tainted if what?

19 Q If these four paragraphs were read.

20 A Were read to them?

21 Q Yes, at the beginning of the biology course.

22 MR. WILCOX: You keep going back and

00199

1 forth. Before you were saying at the beginning of the
2 unit of evolution, and now you're saying --

3 MR. THOMPSON: Yes, yes, on the unit on
4 evolution.

5 THE WITNESS: It's possible that a very
6 sharp student -- although I'm not sure how many at
7 that level would be that sharp -- would be able to
8 read between the lines the way I have and would give
9 less stature to evolutionary biology than if the text
10 were not read to them. It's possible, yes.

11 BY MR. THOMPSON:

12 Q From the comments that you've made
13 throughout the deposition, it seems that Darwin's
14 Theory of Evolution is the only theory dealing with
15 the origin of species that must be accepted by the
16 public school system?

17 A Forever?

18 Q Right now.

19 MR. WILCOX: Objection. Go ahead.

20 THE WITNESS: I would say that the --
21 that right now because of the wide scientific
22 consensus that accepts the basic Darwinian

00200

1 interpretation of evolution that it would be a great
2 deprivation of students' education if that fact were
3 not pointed out to them. At the same time, if they
4 are properly instructed in scientific method, which
5 they should be, they should realize that every
6 scientific theory is open to modification in the light
7 of new data; that they should keep an open mind about
8 that possibility, but that open-mindedness in the
9 scientific classroom should not be extended toward the
10 controversy over different world views.

11 BY MR. THOMPSON:

12 Q So you believe that this controversy between
13 intelligent design and evolutionists is really not a
14 scientific controversy at all but a controversy
15 between belief systems?

16 A It's essentially that, yes, and my writing
17 God After Darwin and Deeper Than Darwin have pointed
18 that out time and again, that the controversy has to
19 do with clashes in basically religions in the first
20 sense of the term as I defined it.

21 Q And that because prominent Darwinists today
22 are basically atheist and tie the theory of Darwinism

00201

1 to their world view philosophy, that students in the
2 ninth grade should be subjected to that world view
3 without the counter-viewpoint?

4 MR. WILCOX: Objection.

5 BY MR. THOMPSON:

6 Q Is that the question -- I mean, is that the
7 answer?

8 A Everything that I've said today would say
9 no; that what students in the ninth grade should be
10 exposed to is not world views at all. If, in fact,
11 there are science teachers who are implicitly
12 embedding scientific information in a materialist or
13 atheistic world view, that is just as objectionable,
14 I've been saying all along, as embedding scientific
15 information in the theory of intelligent design.

16 Now, if these students were in a parochial
17 school where their parents are sending them to be
18 educated into a particular view of the world, then
19 these things could be pointed out, but even there not
20 in the science class but in some other educational
21 setting ideally.

22 Q So you would have no objection if

00202

1 intelligent design was taught in a comparative
2 religion class?

3 A Well, in private schools --

4 Q No, in public schools.

5 A In private schools, even though I disagree
6 with creationism, as an American citizen I think
7 private Christian schools have every right to teach
8 creationism even though I think it's wrong. And I
9 suspect most scientists would agree with that, also.

10 But in public schools where we have to make
11 sure that we don't cross the separation of state and
12 religion, in order to ensure we don't cross those
13 lines, we have to be especially careful not to present
14 science packaged in any religious blanket, whether
15 that be materialism, as you pointed out before, or
16 intelligent design.

17 Q In the beginning of your expert report --
18 I'm going to the expert report now. In the beginning
19 of your expert report you say, My general opinion
20 regarding the case mentioned above is that the
21 plaintiffs are entirely justified in stating the
22 effect of the intelligent design policy adopted by the

00203

1 Dover School Board's October 18 resolution will be to
2 compel public school teachers to present to their
3 students --

4 MR. WILCOX: You left out the word
5 science. Did you mean to?

6 MR. THOMPSON: Public school science
7 teachers. Did I miss the word science?

8 BY MR. THOMPSON:

9 Q -- teachers to present their students in
10 biology class information that is inherently
11 religious, not scientific in nature.

12 A Right.

13 Q Did you get that?

14 A Yes.

15 Q Okay. When you say "the plaintiffs are
16 entirely justified," upon what basis are you using the
17 word justified?

18 A Justified by law as well as by good critical
19 thinking.

20 Q Well, what law are you referring to?

21 A I'm referring to the -- the laws or the
22 Constitution that sets up our country in such a way as

00204

1 to not allow religion and religious ideas to -- to
2 underlie public policy.

3 Q So that your understanding of the law is
4 that religious ideas cannot underlie public policy?

5 A That they -- that the law should not be used
6 as an instrument for a particular religious group.

7 Q That's a little different from what you just
8 said a minute ago; is that right?

9 A Permit me the clarification.

10 Q Yes, sure. So it is -- you indicated it's
11 justified by law, and what was the other thing?

12 A By critical thinking which recognizes the
13 distinction between different approaches to truth.

14 Q Well, critical thinking was one of the
15 reasons why you had your students become familiar with
16 Darwin's Black Box; isn't that correct?

17 A Yes, but I did that in the theology class,
18 not in the science class, not in a public school
19 science class.

20 Q But the idea of critical thinking --

21 A Oh, of course. Of course. Yes, there
22 should be settings in which people are allowed to

00205

1 learn the difference between different approaches.

2 Q And, in fact, isn't it true that if the
3 students were presented with a controversy between
4 Darwin's Theory of Evolution and the theory of
5 intelligent design, it would make them more interested
6 in the whole subject matter?

7 MR. WILCOX: Objection.

8 BY MR. THOMPSON:

9 Q Do you believe that?

10 MR. WILCOX: Objection.

11 THE WITNESS: Provided that, again,
12 you're forgetting the distinctions that I made already
13 today that logically speaking the controversy cannot
14 be between intelligent design and Darwinian theory.
15 It can be between intelligent design and a world view
16 that takes Darwinian theory to the ultimate
17 explanation.

18 BY MR. THOMPSON:

19 Q But what if the teacher basically said,
20 there's Darwin's Theory of Evolution, and you explain
21 that theory of evolution. There's this other group of
22 scientists today that think there is an alternative

00206

1 theory called intelligent design, and it may be a
2 scientific theory or it may be a religious theory, and
3 I want you to give me your viewpoint and the basis for
4 that viewpoint.

5 Isn't that what education is all about?

6 A That might be a good question for my
7 students in my class on science and religion, but it's
8 an inappropriate question to pose to students in a
9 science class in a high school. It's just going to
10 confuse things.

11 Q You don't think that they are mature enough
12 to make distinctions?

13 A If there were a separate kind of educational
14 situation or structure that could allow students to
15 see the difference between different levels of
16 explanation, that would be ideal and there would be
17 room for that in public school education, too. I
18 think teaching the controversy is something that might
19 be appropriate in a high school context, but not in a
20 science class as such.

21 Q Just the idea of presenting the controversy,
22 regardless of how you feel about it, wouldn't that

00207

1 make for a more interesting science class?

2 MR. WILCOX: Objection.

3 THE WITNESS: No, not science class.

4 It would make a good question for civics class,
5 perhaps, or social science class; that would be a
6 reasonably good discussion perhaps to have at that
7 level.

8 But any time you -- you deal with that,
9 especially with ninth grade students, at that level by
10 letting them even suspect that intelligent design is a
11 logical alternative to Darwinian theories of life,
12 that's just going to cause unnecessary confusion, and
13 it's going to end up having those who are inclined
14 toward intelligent design -- it's going to close their
15 minds to developing a good scientific understanding of
16 life.

17 BY MR. THOMPSON:

18 Q Well, would you agree that a ninth grade
19 biology class is not to teach students to become
20 scientists?

21 A Well, I'm not sure that that's an accurate
22 way of putting things. A lot of scientists have been

00208

1 launched into their career of science because of what
2 they encountered in ninth grade science classes.

3 In general, what a good science class should
4 do is to educate students into scientific method and
5 what a particular scientific method discovers in a
6 particular field of inquiry.

7 Q When you say in your next paragraph of your
8 opinion, The main issue is whether the idea of
9 intelligent design, (henceforth abbreviated as ID) is
10 inherently scientific rather than religious, the main
11 issue is whether it is inherently scientific rather
12 than religious?

13 A Yes.

14 Q You go on to say, It is my considered
15 opinion that it is not a scientific but instead an
16 essentially religious idea. You do not give any kind
17 of credence to Michael Behe's work, then; is that
18 correct?

19 A Well, any -- any theology or religion can
20 have components in it which are very scientific, and I
21 don't deny that there are many scientifically accurate
22 statements that Michael Behe and William Dembski make

00209

1 in their works, but what I'm rejecting is the idea
2 that the framework of this so-called scientific study
3 should be intelligent design rather than something
4 that's accepted by the scientific community. And --
5 and they've clearly made intelligent design the
6 framework, the end-all and be-all of their arguments
7 is to make a case for intelligent design.

8 Q Well, isn't it true, though, that they do
9 not consider their theory of intelligent design as
10 totally opposed to some claims made by Darwinians;
11 isn't that true?

12 A Such as?

13 Q Common descent.

14 A Some of them. We've been over this before.

15 Q Right. So, I mean, it is not -- it is not
16 intelligent design or Darwinism to many of the
17 advocates of intelligent design; is that correct?

18 A I don't know of any exception. Every --
19 every main proponent of intelligent design is, as I've
20 understood it, anti-Darwinian in their explanation of
21 how biological diversity comes about.

22 Q That's one part of Darwinians' theory;

00210

1 correct?

2 A That's the major part. It's the
3 definitional part of Darwinian theory. Common descent
4 is held by lots of people other than Darwinians.
5 Lamarck, for example, had a theory of common descent
6 as well. It's the mechanism of change that is
7 problematic to the intelligent design people.

8 Q I don't want to go over this that we've gone
9 over before, but I think we agreed that Behe's real
10 dispute was with the mechanism, and that was natural
11 selection; isn't that correct?

12 A His dispute was with the adequacy -- the
13 scientific adequacy -- and I'm emphasizing here the
14 word scientific adequacy -- of natural selection,
15 which he thought needed to be supplemented by another
16 concept which he calls intelligent design.

17 Now, there are other evolutionists who also
18 agree, and as a theologian I also agree, that natural
19 selection is not enough adequately to explain what
20 goes on in life. But from a scientific point of view,
21 it's adequate, at least at this time in the history of
22 science.

00211

1 Q A lot of your opinion deals with the
2 religious motivations of the advocates of intelligent
3 design.

4 A That's one component of my analysis.

5 Q Well, you -- you indicate on page 4, top of
6 the page, that sentence starting with, Whether they
7 are right or wrong in their assessment of the
8 godliness of --

9 A Godlessness.

10 Q -- godlessness of contemporary culture, the
11 ID initiative cannot be understood apart from a deep
12 desire to defend the integrity of religion against the
13 invasion of secularism whose spearhead seems, at least
14 to ID proponents, to be Darwinian evolution.

15 A Right.

16 Q So you are viewing the validity of this
17 theory of intelligent design in part based upon the
18 motivation of the proponents, are you not?

19 A I'm -- I'm saying that because, as I
20 mentioned earlier, they're dealing here with a world
21 view, that it's certainly legitimate to understand
22 what are the personal motivations that underlie their

00212

1 preoccupations; that we can't really understand what
2 they're doing culturally, socially, religiously and
3 theologically unless we recognize, as they themselves
4 almost invariably admit, that they see Darwinism as
5 fundamentally identical with atheism. And that,
6 therefore, in order to combat atheism, we need to
7 combat Darwinism.

8 Q However, did we not agree before that the
9 motivations of a particular advocate --

10 A If you'll recall --

11 Q -- do not really affect the validity of the
12 particular theory they're advocating; isn't that
13 correct?

14 A If you recall, I made a distinction that in
15 scientific theories the personal coefficient should
16 not be brought in as a factor in assessing the
17 validity of a particular idea, but that in
18 understanding the genesis of a world view, as many
19 philosophers would agree, we cannot disassociate those
20 ideas from the motivational factors that gave rise to
21 those ideas.

22 Q So you --

00213

1 A That's a very complex analysis if you were
2 going to do it in a more scholarly way, but ideology
3 as we've known for the last -- especially since the
4 19th century is not independent of certain economic,
5 social, psychological, educational and religious
6 factors.

7 Q Isn't that really basically an argument ad
8 hominem?

9 A No, I don't think --

10 MR. WILCOX: Objection.

11 THE WITNESS: -- it's ad hominem. It's
12 an attempt to understand the genesis of an idea in the
13 same way that a scientist wants to understand the
14 genesis of life. You want to understand all the
15 factors that are involved.

16 BY MR. THOMPSON:

17 Q But I guess the question is what does that
18 have to do with whether intelligent design is a valid
19 scientific theory?

20 A It has to do with the fact that what is
21 really a religious idea is presented as a scientific
22 theory. In other words, knowing the motivation behind

00214

1 intelligent design, it's not the only factor in
2 assessing the validity of it, I would agree, but it's
3 a relevant factor because of the fact that the
4 intelligent design people themselves say that we need
5 to do something to get people away from secularist
6 ideology. Let's start -- let's wedge -- read --
7 Phillip Johnson, William Dembski, more so than Michael
8 Behe, would argue that we need to start with the
9 classroom so the students get -- don't get Darwinian
10 thought into their head because that becomes a holding
11 place for materialist ideology.

12 Q Well, I won't push the point, but, again it
13 seems that the validity of their argument is being
14 based upon what their motivations are rather than the
15 actual scientific doctrine that it is based on.

16 MR. WILCOX: That is a conclusion you
17 might draw. That's not a question.

18 BY MR. THOMPSON:

19 Q Isn't that true?

20 MR. WILCOX: Objection. That you think
21 that? It may be true that you think that.

22 THE WITNESS: Again, I want to

00215

1 distinguish between scientific ideas and world views.
2 And world views are incapable of being understood
3 except in the context of the particular concerns, the
4 particular preoccupations of those who are -- are
5 trying to educate us into their world view, and their
6 particular preoccupation is that atheist materialism
7 is taking over our culture. I mean, this is so
8 prominent in their statements that it cannot be
9 ignored if we're trying to be objective about what
10 intelligent design -- the intelligent design movement
11 is after.

12 BY MR. THOMPSON:

13 Q Well, I can't think of a specific scientific
14 theory, but it would seem to me like evaluating some
15 rocket propulsion theory and attacking it because some
16 Nazis promoted it.

17 A Well, you know, science is very complex,
18 too, and we haven't really gotten in depth into it,
19 but what scientists find interesting to explore is
20 itself, also, as Michael Polanyi has pointed out, not
21 always the consequence of objective thinking but of
22 personal and social preoccupation. So there is a

00216

1 social dimension to science, too, and it's quite
2 legitimate in order to understand, for example, why a
3 particular theory arises at a particular time in
4 history for the sociologists' knowledge to try to
5 explore what are the factors -- the extrascientific
6 factors that are involved in the kind of
7 preoccupations that lead the scientific community this
8 way or that way.

9 So even in -- in a less intense way what I
10 said about the understanding the motivations of -- of
11 the intelligent design community could also be applied
12 even to certain things that go on in the scientific
13 world, not necessarily a particular mathematical
14 equation, but the particular bias toward a particular
15 scientific theory. That's a possibility.

16 Q Going down in B, Section B of your report,
17 it says -- page 4 -- Historically it is impossible to
18 separate ID from the religious and theological
19 tradition in which it was born and nurtured over the
20 course of centuries.

21 Again it seems that you're basing your
22 opinion on the religious aspects or the religious

00217

1 motivations of the proponents; is that true?

2 A Of which proponents? Proponents --

3 Q Of intelligent --

4 A -- of natural --

5 Q -- design.

6 A -- theology or intelligent design.

7 Q Intelligent design.

8 A Well, I'm talking here, especially in this
9 paragraph if you read on, about natural theology. And
10 the preoccupation of natural theology has always been
11 to see if we can find in nature support for our
12 religious ideas. And this is what I'm saying is
13 characteristic of the intelligent design community and
14 movement, also; that they're looking -- implicitly
15 they're practicing natural theology by trying to say
16 that the book of nature is as sure a way to God
17 perhaps as the book of scripture.

18 Q Well, what do you mean, then, by your
19 sentence in the middle of that paragraph, The
20 contemporary notion of intelligent design is
21 historically unintelligible apart from the religious
22 agenda?

00218

1 A That's what I just --

2 Q Paley and -- and you're again tying it to a
3 religious agenda or motivation, is it not?

4 A Natural theology has a religious agenda
5 underlying it, and that religious agenda, as I've just
6 articulated, is to show that there are reasons in
7 science and nature, or reasons in nature, broadly
8 speaking, for the beliefs that we hold on the basis of
9 revelation. So natural theology, from the beginning,
10 has been an attempt to uphold the ideas of revelation.
11 There has never been, as far as I know, a natural
12 theology that has functioned independently of some
13 overarching revelatory system or religious system.

14 Q Then going on to the next paragraph,
15 Historically the notion of intelligent design has
16 persistently been taken to mean the Creator God of
17 theistic faith, end of quote.

18 Again bringing in the religious aspects of
19 this theory, and that is the -- I guess the religious
20 foundations of the theory and using that as a basis
21 for your opinion; is that correct?

22 A Well, I'm -- I'm appealing directly to what

00219

1 Thomas Aquinas said when he finished his argument from
2 design and concluded to an intelligent designer, which
3 incidentally he was doing as a philosopher and
4 theologian, natural theologian; that when he appeals
5 to the notion of intelligent design, he says, this is
6 what all men understand to be God. So he took it as
7 self-evident that anybody -- anybody in his time who
8 would conclude to an intelligent designer would
9 immediately see that that correlates with the Creator
10 God of biblical religion. That's why it seems to me
11 to be terribly artificial and even capricious for the
12 intelligent design people to expect that everybody
13 today would make a different conclusion from what
14 people in Thomas Aquinas' day did.

15 Then everybody -- everybody understands this
16 to be God in the 13th century. Why would people in
17 the 20th century and the 21st century conclude that
18 they're talking about something different from what
19 all these centuries have identified with intelligent
20 design?

21 Q Well, one of the reasons maybe is because
22 the proponents themselves say it isn't; isn't that

00220

1 true?

2 A They do so -- they do say that, yes.

3 Q In fact, you have it in your report?

4 A Yes, they do say this, but they do so, and I
5 think, entirely ingenuously, and in doing so they are
6 forcing language to function in ways that it simply
7 cannot function for most people.

8 Q And, again, that comment goes to what their
9 motivations are; is that correct?

10 A I -- yes, I think that's connected.
11 Everything is connected to their motivations.

12 Q You come to the conclusion -- not the
13 conclusion, but down further on page 5, quoting,
14 Moreover, no good scientist would ever claim that
15 scientific experiment detects intelligent causes, as
16 Dembski claims.

17 So you are not -- so by that am I to
18 conclude that you do not believe Michael Behe is a
19 good scientist?

20 A No, I didn't say that at all. That doesn't
21 follow at all from what I've said here. When he's
22 doing biochemistry, he's a good scientist. When he

00221

1 appeals to intelligent design, he's not a good
2 scientist.

3 Q Well, let's -- I'm reading the entire
4 sentence, and you don't make that kind of distinction
5 in that sentence.

6 A Well, what's implicit in this sentence is
7 what I've been saying all day; that science can only
8 deal with what it can observe in the area of efficient
9 and material causes. When you bring in the notion of
10 intelligent cause, that's similar to bringing in
11 Aristotle's notions of formal and final cause which
12 are causes which science deliberately said and has
13 persistently said science cannot deal with and should
14 not deal with. So these -- these are terms --
15 intelligent cause and intelligent design are terms
16 that Aristotle and Aquinas would have liked, but
17 they're doing philosophy; they're not doing science.

18 Q In the middle of page 6 you say -- or write,
19 I should say, Throughout the modern period --

20 MR. WILCOX: Where are you?

21 MR. THOMPSON: In the middle of the
22 third paragraph down in the middle of page 6.

00222

1 MR. WILCOX: Thank you.

2 BY MR. THOMPSON:

3 Q Throughout the -- I lost my place.

4 A Third line from the top.

5 Q Throughout the modern period scientific
6 method has refused to use categories such as purpose,
7 God, intelligence, value, meaning, importance, et
8 cetera, and has attempted to understand all phenomena
9 in a very limited, impersonal and, indeed, physical
10 way.

11 A Yes.

12 Q Now, you haven't read -- I don't think
13 you've read Ken Miller's biology textbook; is that
14 correct?

15 A No, I've read his book Finding Darwin's God.

16 Q Right. I'm talking about a biology textbook
17 that the students read.

18 A No.

19 Q If that biology textbook talks about the
20 need to protect extinct animals, is that a value or
21 political statement?

22 A It's a value statement.

00223

1 Q That should not be in the textbook on
2 science; is that correct?

3 A I don't know whether I would say that. It's
4 okay, and even as I mentioned earlier, no scientific
5 discourse is ever going to be pure. As you mentioned
6 before, Darwin's own origin of species has lots of
7 asides that are philosophical, so I would not hold
8 anybody to -- who's writing a high school textbook
9 to -- to such rigorous discipline as leaving out any
10 statement that has to do with values. That's --
11 that's not humanly possible.

12 But the point is that it's not a scientific
13 statement; that's a value statement.

14 Q In fact, science and human values are very
15 closely connected; isn't that true?

16 A They're connected but they're distinct.

17 Q When you talk about the current issue over
18 stem cell research --

19 A Right.

20 Q -- that is both a scientific issue and an
21 issue of values, is it not?

22 A Certainly.

00224

1 MR. WILCOX: Objection.

2 BY MR. THOMPSON:

3 Q When you talk about the need to protect the
4 environment, that is a value statement, is it not?

5 A Yes.

6 Q The need to -- when you talk about the need
7 to control population growth, that's a value
8 statement, is it not?

9 A Yes.

10 Q Would it surprise you that all these issues
11 are raised in Ken Miller's biology textbook?

12 A No, because he's trying to show -- what he's
13 doing and what any good educator would do is to show
14 the relevance of studying the scientific aspects of
15 population and environment. As I mentioned before,
16 in -- in science, generally speaking, the question of
17 why a particular study is interesting at all is not
18 itself a scientific question. It's a question of
19 motivation. So what he's doing there is implicitly
20 giving the students a good reason from their concrete
21 actual life as to why they should make themselves
22 educated on the scientific aspects of environmentalism

00225

1 and so forth.

2 Q And that goes back to what the purpose of a
3 ninth grade biology class is about; isn't that true?

4 A Well, any -- any class. Even the collegiate
5 level when you teach science, it's helpful for the
6 teacher to show why it's relevant to know the science.
7 As long as you distinguish between values and the
8 science, that's fine.

9 Q You're familiar with the concept of the Big
10 Bang?

11 A Yes.

12 Q Is that a scientific theory?

13 A Big Bang Theory, it certainly is.

14 Q Does that also have religious implications?

15 A Every scientific idea has religious
16 implications. That's what I've been saying all day.

17 Q Okay. Because it does have scientific
18 implications, would you keep it out of the science
19 books in high school?

20 MR. WILCOX: You mean --

21 THE WITNESS: You mean because it has
22 religious implications?

00226

1 BY MR. THOMPSON:

2 Q Yes.

3 A No, I don't understand your question.

4 Q Well, the Big Bang Theory is what? What is
5 the Big Bang Theory?

6 A You'll have to specify what you mean by
7 "what."

8 Q What does the Big Bang Theory consist of?

9 A I'm not sure if you can --

10 Q What's the concept behind the Big Bang
11 Theory?

12 A The scientific concept --

13 Q Yes.

14 A -- the philosophical, theological, what.

15 Q The scientific concept behind the Big Bang
16 Theory.

17 A It's not one scientific concept. The Big
18 Bang Theory is a product of a convergence of a number
19 of questions that have been asked for many, many years
20 like Olber's paradox, and why the universe would be
21 expanding, and why the universe has to -- has kind of
22 an unstructured, cottage cheese-like characteristic

00227

1 rather than smooth. Why is the sky dark at night when
2 we go out? There's many, many questions that the Big
3 Bang Theory suddenly was able to answer in a simple
4 and eloquent movement of the human mind, just like
5 Darwin's theory in just a very simple theory was able
6 to answer a whole lot of questions that people had
7 been raising about the fossil record, about why
8 there's sharks' teeth up in mountains and so forth and
9 so on.

10 That's the nature of a good scientific
11 theory, to suddenly and swiftly and eloquently tie
12 together and bring closure in a way to many kinds of
13 questions that have been simmering for a long, long
14 period of time.

15 Q Well, isn't it true that part of the Big
16 Bang Theory is that the universe had a beginning?

17 A That's not a necessary part of the theory.
18 If you read carefully certain physicists like Stephen
19 Hawking, for example, and Andre Linde and other
20 physicists today, Big Bang cosmology is like
21 evolution; something that has almost an endless future
22 of possible exploration. But the idea that the

00228

1 universe had a crisp beginning is one that many
2 scientists have drawn from -- from their study of the
3 data, yes.

4 Q Isn't it correct that up to the beginning of
5 the 20th century most scientists believed the universe
6 was perpetual, that it had no beginning --

7 A Many --

8 Q -- that it was unchanging?

9 A Many philosophers from Aristotle, from Plato
10 and the Stoics and more recently many materialist
11 philosophers, including Einstein himself, believed
12 that the universe was eternal and everlasting.

13 Q And then it was all at once where -- I
14 forgot -- the spectrum of light --

15 A The red-shift phenomena.

16 Q The red-shift phenomena led some scientists
17 to believe that this was a phenomenon you see with an
18 explosion and then developed this whole --

19 A Well, if you trace --

20 Q -- concept of --

21 A -- the universe --

22 Q -- (inaudible)?

00229

1 A -- back along the lines of expansion to an
2 earlier time, at one point it would be a little bit
3 more compact, further back it would be more compact,
4 and ultimately it would have been an almost infinitely
5 hot and dense particle or atom of matter that
6 exploded, if you want to use that term, as the Big
7 Bang.

8 Q And isn't it true that some scientists
9 refuse to accept that because it had connections with
10 religion?

11 A There were a few scientists who thought that
12 because the author of the Big Bang idea was a Belgian
13 priest, George Lemaitre, who suggested it to Einstein,
14 and Einstein thought he was a buffoon, and other
15 scientists thought -- one scientist, for example, I
16 forget who it was, said it's not for nothing that this
17 idea came from a Roman Catholic priest.

18 Q And it's consistent with the concept that
19 God created the heavens and the earth; is that true?

20 A Yes, but even an eternally existing
21 universe, as Thomas Aquinas himself said, would be
22 consistent with the notion of a divine creator. So if

00230

1 we find out tomorrow that the Big Bang never happened,
2 it would not in any sense of the word at all affect
3 the Doctrine of Creation.

4 Q Which goes back to the idea that science is
5 always -- is always tentative --

6 MR. WILCOX: Objection.

7 BY MR. THOMPSON:

8 Q -- that we're always learning; is that
9 correct?

10 MR. WILCOX: Objection.

11 THE WITNESS: Well, if it's scientific,
12 it is -- as they say, it's underdetermined by the
13 data; that is to say, as new data coming in, they have
14 to be taken into account. And the same is already
15 happening with respect to the Big Bang Theory.

16 BY MR. THOMPSON:

17 Q That it's changing?

18 A Well, that it's undergoing -- actually, in
19 fact, since 1992 it has been firmed up more thoroughly
20 than ever before by the COBE Satellite, which is a
21 good example of how observation is so necessary in
22 science. The COBE satellite was sent up to measure

00231

1 the differentiations in temperature in the microwave
2 background radiation that was the afterglow of the Big
3 Bang itself, and by measuring the differentiations in
4 temperature was able to explain why we live in what I
5 call the cottage cheese-type universe rather than a
6 smooth one.

7 And I still remember sitting in my office in
8 Georgetown in April of 1992 and media were calling me,
9 and Stephen Hawking was saying this is the most
10 important discovery ever in the history of science,
11 and Robert Smoot, the director of the COBE project,
12 was saying, there are theological consequences here
13 and so forth. It's tempting sometimes for scientists
14 to jump to theological conclusions like that.

15 But, anyway, my point is that it's because
16 of further observation that the Big Bang Theory is now
17 more firmly established than ever, and that's why from
18 the point of view of evolution, a good evolutionist is
19 not afraid to go out and look at the data because the
20 data should either confirm or falsify the hypothesis.
21 Science is open to falsification.

22 Q And your story about the Big Bang Theory

00232

1 being discovered by a Belgian priest --

2 A Not discovered, but he was a mathematician.
3 That's a good example of how mathematics and
4 observation come together.

5 Q How would you say he developed the theory --

6 A He developed the theory that the universe
7 began in what he called a primeval atom. He didn't
8 call it the Big Bang.

9 Q And this theory -- his theory was ridiculed
10 as a theory of a buffoon; is that correct?

11 A Oh, at first Albert Einstein, because of his
12 own bias towards an everlasting universe, was
13 suspicious of it, but Einstein himself didn't suspect
14 it was because of Lemaitre's religion. It was some
15 other physicist. I can't remember who it was who said
16 it.

17 Q But the point is that this theory that is
18 now widely accepted and is being corroborated more and
19 more, at the time it started was made fun of by some
20 of the greatest scientists in the world in the history
21 of the world; is that correct?

22 A Yes, Fred Hoyle to his very dying day

00233

1 rejected it, but that's true of every scientific idea.
2 I said scientific idea, not religious idea.

3 Q But would you agree -- this is sort of like
4 a Darwinian conclusion. Would you agree that your
5 entire argument against this particular policy --

6 A Intelligent design policy you're talking
7 about?

8 Q Yes. Well, you call it the intelligent
9 design policy. I call it the biology curriculum, but
10 the policy we're talking about.

11 MR. WILCOX: And you're referring to
12 the Dover Area School Board --

13 MR. THOMPSON: The school policy.

14 MR. WILCOX: -- Policy, Exhibit 3?

15 MR. THOMPSON: Right, Exhibit 3.

16 BY MR. THOMPSON:

17 Q Your entire argument against that particular
18 policy would fall apart if the theory of intelligent
19 design were deemed to be scientific?

20 MR. WILCOX: Objection.

21 THE WITNESS: I wouldn't put it that
22 way at all because anybody can deem it to be

00234

1 scientific. The intelligent design people deem it to
2 be scientific. That doesn't make it scientific.

3 BY MR. THOMPSON:

4 Q Well, held as scientific by a court?

5 MR. WILCOX: Objection.

6 THE WITNESS: A court does not decide
7 what is scientifically acceptable.

8 BY MR. THOMPSON:

9 Q Held scientifically by the Academy of
10 Sciences?

11 A You're getting warmer, but even so, what
12 makes it scientific or not is a whole history of
13 testing the hypothesis against the data.

14 Q Well, the question -- well, I assume you
15 would agree that we can only look at what the
16 scientific community consensus is at a particular
17 given time, would you not?

18 MR. WILCOX: You mean we can't predict
19 the future?

20 MR. THOMPSON: Right.

21 THE WITNESS: Certainly what passes as
22 science is -- is determined by the cooperative work of

00235

1 an enormous scientific community.

2 BY MR. THOMPSON:

3 Q And if the consensus -- and we had discussed
4 this before. And if the consensus of the scientific
5 community becomes intelligent design is a scientific
6 theory, then your entire argument against Dover's
7 policy would fall apart; isn't that true?

8 MR. WILCOX: Objection.

9 THE WITNESS: It's such a preposterous
10 proposal. It's like, you know, saying, you know, if
11 suddenly the scientific community decided that the
12 moon is made of green cheese, that we would have to
13 accept the fact that the moon was made of green
14 cheese. We have to keep in mind the idea of what can
15 pass muster in principal as scientifically acceptable
16 discourse, and in principle, not just in fact, but in
17 principle, intelligent design will never -- I am
18 absolutely sure of this -- will never pass muster as a
19 scientific idea.

20 BY MR. THOMPSON:

21 Q As probably as sure as Einstein was that
22 there was no Big Bang?

00236

1 A Well, all of us can be wrong. I'm a
2 fallible human being, but when I say that, I'm saying
3 that as certainly as I believe anything.

4 Q I mean, it's all -- everything is relative,
5 is it not, as far as what we know or what we think we
6 know based on the fact that our brains are still
7 evolving; is that true?

8 A Let me put it this way: It's honest and
9 humble of us to admit that our ideas of anything are
10 relative to our situation, our degree of learning, our
11 methods and so forth. So there is -- yes, there's a
12 certain relativity in all knowledge, including
13 religious knowledge, but that's not the same thing to
14 say that all things are relative. All it's saying is
15 that our knowledge of truth is relative, not the truth
16 is --

17 Q That's what I meant to say, yes.

18 A -- not the truth is not real.

19 Q I think in your book you make mention of the
20 fact that 90 percent of the scientists in the Academy
21 of Science are either --

22 A The National Academy of Sciences.

00237

1 Q -- are either agnostic or atheists?

2 A I think that's close to the figure that I
3 saw in one of the recent reports, and it's also
4 interesting to note that among scientists biologists
5 are more inclined to be atheistic than physicists and
6 chemists.

7 Q Do you have any theory as to why that is?

8 A I have a very strong theory as to why it is.
9 I think there are many scientists, as I've been saying
10 all along today, who think that Darwinism is
11 implicitly atheistic. That Darwinian explanations --
12 if you can come to the belief that natural selection
13 is the ultimate explanation of living diversity, then
14 that itself is already a religious belief. So it
15 follows, then, that if natural selection is the
16 ultimate explanation of life, there's no room for what
17 theists refer to as God as ultimate explanation.

18 And there's no question today that Darwinism
19 does appeal to an atheistic mentality. That does not
20 make evolution atheistic. It makes a certain
21 interpretation of evolution atheistic.

22 Q Well, it seems to be -- it seems to have a

00238

1 great impact on the biologists, does it not, though --

2 A What, the --

3 Q -- the (inaudible) --

4 A -- study --

5 Q -- as to their religion?

6 A Yes, but it's not the biology that's
7 impacting; it's the implicit ideology that Stephen
8 Gould, for example, you mentioned earlier, says that
9 Darwinism has a philosophical message which is in
10 Gould's mind inseparable from the science itself, and
11 that philosophical message includes the idea that
12 matter is all there is; that there's no purpose in the
13 universe and so forth.

14 But Stephen Gould is wrong on that point.
15 Stephen Gould is not being a scientist when he says
16 that. He's being a philosopher.

17 Q Well, the biologist E.O. Wilson also
18 puts Darwin's science in direct competition with --

19 A E.O. Wilson is another one. E.O. Wilson is
20 a creationist at heart, and he is -- he is woefully
21 and appallingly uneducated in religion and theology.
22 He, himself, grew up as a fundamentalist. He's never

00239

1 outgrown his fundamentalism religiously. He's still
2 placing his fundamentalism into competition with his
3 Darwinian understanding. So in doing that, he is just
4 as illogical, just as thoroughly mistaken as the
5 intelligent design people in confusing ideology with
6 science.

7 (Recess -- 3:20 p.m.)

8 (After recess -- 3:34 p.m.)

9 BY MR. THOMPSON:

10 Q What is your definition of cheating -- uh,
11 cheating -- teaching?

12 A Well, from the word education to lead out
13 and bring to the surface what I would call the desire
14 to know, desire that's latent in all of us, but which
15 can be easily suppressed by all sorts of other factors
16 in life. And after getting students to become aware
17 of their own desire to know, to have them realize how
18 many different avenues this desire can travel down as
19 it reaches out toward the real, toward the truth, and
20 that means differentiating carefully between methods
21 of inquiry, such as science, philosophy, mathematics,
22 theology, poetry, art and so forth.

00240

1 Q If you said, I'm going to teach a course on
2 science and theology, what would you mean by the term
3 "I'm going to teach"? I'm looking for the definition
4 of teach.

5 A That I'm going to try to be a guide as
6 students approach the various ways in which the
7 natural world can be understood -- when I talk about
8 science, I mean the natural sciences -- and how the
9 outcomes of natural science themselves might raise
10 questions that require deeper levels of inquiry than
11 science itself can illuminate. And among these
12 theology would be one.

13 Q Now, when you say you're going to teach a
14 course, what factors would you view as necessary for
15 the concept of teaching?

16 A Factors of the -- the students. First of
17 all, you need a body of students who have innately a
18 desire for understanding and truth; and, secondly, you
19 need a teacher who has been apprenticed to other
20 teachers and who has read widely in particular
21 disciplines and can function both as a scout and as a
22 scout master in terms of opening up the world to

00241

1 students.

2 Q As you probably know that not every high
3 school student wants to learn, but yet teachers have
4 to teach; is that correct?

5 A Sure.

6 Q And eliminating for the moment the student
7 equation in this definition, what do teachers have to
8 do to teach?

9 A They have to themselves, first of all, be
10 able to make distinctions. They must themselves have
11 a desire to be excited by learning and knowledge and
12 the ability to communicate that almost by contagion to
13 their students. Students have to -- this has been my
14 experience. What -- what has been most effective to
15 many students that I've had over the years is that
16 they see how excited I am personally about a specific
17 topic, and that leads them to think, well, maybe I
18 should get involved in this. I should read; I should
19 do my work, my assignments, and see where it leads.

20 I suspect that even a secondary level school
21 teacher has to do something like that as well. Not
22 having taught secondary school, I can only speculate.

00242

1 Q In a high school class on biology, for a
2 teacher to teach biology, what would you expect that
3 teacher to be doing?

4 A Defining life as much as possible;
5 delineating the life world from the physical world and
6 from the social world, not separating them, but
7 distinguishing them carefully; examining living beings
8 at the level of both contemporary cross-section
9 biochemically through molecular biology, but also --
10 and this is something I strongly believe -- placing
11 science in a narrative context.

12 Telling stories is especially important at
13 the level of high school education because humans are
14 natively interested in good stories. So if you can
15 present life as a story with a chapter by chapter sort
16 of understanding, I think that would be very helpful.
17 And that means, for me, evolution, which is a
18 narrative way of organizing data, is indispensable to
19 good biological teaching.

20 Q By merely mentioning a particular topic such
21 as in the -- in the policy that is read to the -- the
22 policy statement read to the students where

00243

1 intelligent design has been mentioned, would you say
2 that that is teaching students intelligent design?

3 A Just to mention the word "intelligent
4 design"?

5 Q Uh-huh.

6 A No.

7 Q I guess that's what I'm getting at. If you
8 were going to teach intelligent design, what things --
9 now, for a moment keeping out whether it should be in
10 a science class or someplace else. If you were going
11 to teach intelligent design, what things would you as
12 a teacher do?

13 A Well, in fact, I do -- I don't teach
14 intelligent design. I teach about intelligent design
15 in my science classrooms at the collegiate level. I
16 suppose I would do the same thing at -- and I think
17 some students are ready for it even at the high school
18 level -- is to examine the things I outlined in this
19 presentation: What would motivate some people to be
20 so energized and so enthusiastic about this idea of
21 intelligent design in the first place? And I would
22 bring in the -- the possible ways in which they have

00244

1 misread evolutionary biology to mean, perhaps,
2 materialist atheism, and how the intelligent design
3 people are not really reacting against a science but
4 against a particular world view.

5 Q So you would in teaching intelligent design
6 talk about Dawkins and E.O. Wilson and others who
7 have --

8 A Oh, certainly.

9 Q -- brought in a philosophical --

10 A In fact that's what I do when I teach
11 science and religion, yes. I make the students -- I
12 want the students to be sensitive to the ideological
13 components that tend to encumber and sometimes get
14 conflated with scientific ideas, and I want that -- I
15 want them to see it on both sides, both out of the
16 intelligent design people and the scientific
17 evolutionary materialist.

18 Q Do you tell the students ahead of time that
19 this is what you're going to -- this is what I'm going
20 to be teaching you and this is what I'm going to
21 expect you to learn?

22 A No.

00245

1 Q How do you --

2 A I have them --

3 Q -- point to that?

4 A Without commentary I have them read certain
5 texts by Richard Dawkins and then texts by Michael
6 Behe and William Dembs -- William Dembski I haven't
7 used in class, but Michael Behe and Phillip Johnson
8 I've used. I have them read those texts without
9 commentary and without preparation. And then in class
10 we start discussing it, and hopefully the discussion
11 itself will elicit a variety of interpretations. And
12 occasionally you'll have -- we have very bright
13 students at Georgetown -- you'll have students able to
14 see immediately that the issue is not about science;
15 it's about different belief systems.

16 Q But when you -- when you are, you know,
17 teaching intelligent design in this classroom --

18 A Teaching about it.

19 Q -- about it, are you expecting the student
20 to take the same viewpoint that you hold?

21 A No. In fact, I almost hope just for the
22 sake of an interesting discussion that some of the

00246

1 students will be convinced by Behe's approach or
2 Johnson's approach, but that then a kind of dialogue
3 will take place within the classroom which will allow
4 students eventually to see what's really going on
5 here. But I don't -- I try not to lead them.

6 At the end of the particular section I'm
7 dealing with, I do summarize the various positions. I
8 have them use as a text my book on science and
9 religion. If you've seen that text, you'll notice
10 each chapter has four different spokespersons for four
11 different positions on science and religion; the
12 scientific materialists, those who see science and
13 religion as separate worlds, those who see them as
14 distinct but nonetheless capable of being related, and
15 those who see religion as having a very subtle and
16 passive role to play in the shaping of the kind of
17 mind that would do science in the first place.

18 Q After you get done with your dialogue with
19 the class and there's a student that still does not
20 accept the idea that intelligent design is not
21 scientific, do you flunk that student?

22 A Of course I -- as I said earlier, I grade

00247

1 them on their degree of acquaintance with the full
2 spectrum of positions, and some students come out as
3 materialists and some come out -- very few -- I can't
4 even remember one who came out -- well, maybe
5 occasionally there's one or two who accepted
6 intelligent design, but by far the majority of
7 students I teach are able to make a distinction
8 between science, the science of evolution, and the
9 different philosophical interpretations of it.

10 Q Is your course graded on the basis of a
11 paper, or are the students graded by tests that they
12 take?

13 A Both. I give them blue book examinations,
14 and then they have to do papers as well. The
15 classroom discussion is graded, not on what they say
16 but on their degree of participation.

17 Q If you're teaching them about intelligent
18 design, what kind of questions do you ask them in the
19 tests?

20 A "What is it that Michael Behe finds
21 objectionable about Darwinian theory?"; that sort of
22 question.

00248

1 Q Do you find your class popular among the
2 students?

3 A Well, I've taught it for -- I'm retired now,
4 but until last year I taught it almost every semester
5 for over 30 years, and it was always filled.

6 Q The students that filled your classroom,
7 were they students that were getting a degree in
8 science of some kind or were they liberal arts
9 students?

10 A About 20 percent would be science students,
11 25 percent maybe, and the others would be from all
12 different disciplines.

13 Q Have you ever read Douglas Futuymas's quote?

14 A Evolution.

15 Q Pardon me? Do you know the name Futuymas?

16 A Futuymas, yeah.

17 Q Yeah, F-U-T-U-Y-M-A-S. Quote, By coupling
18 undirected purposeless variation to the blind,
19 uncaring process of natural selection, Darwin made
20 theological or spiritual explanations of the life
21 processes superfluous, end of quote.

22 A Yes, I've read that and many other similar

00249

1 quotes by other biologists. Those are not scientific
2 statements. Those are purely biased philosophical
3 statements which should not be part of any science.

4 Q Who made this statement: Darwin made it
5 possible to become an intellectually fulfilled
6 atheist?

7 A Richard Dawkins with The Blind Watchmaker is
8 a perfect example of what I'm talking about.

9 Q Others of the prominent Darwinists include
10 Carl Sagan; is that correct?

11 A He was not technically a biologist, but he
12 would fit into the evolutionary materialist point of
13 view.

14 Q Going back to your -- your expert report.
15 Let me see if I can find it. Page 4, paragraph 2 --

16 MR. WILCOX: The parenthetical?

17 MR. THOMPSON: Yeah, the parenthetical,
18 but starting in the middle of that paragraph.

19 BY MR. THOMPSON:

20 Q Nor is it appropriate in the context of
21 public education that the ID proponents be permitted
22 to push their own implicitly theological agenda as the

00250

1 only -- and you've got "only" italicized -- plausible
2 religious alternative, especially since other theists
3 find their theological assumptions to be deeply
4 flawed.

5 A Yes.

6 Q Where do you see in the policy that the
7 Dover School District pushes the ID as the only
8 plausible religious alternative?

9 MR. WILCOX: Objection.

10 THE WITNESS: What I'm saying there is
11 that, first of all, it's inappropriate to bring
12 implicitly theological agendas into the classroom in
13 the first place. But, secondly, that even the
14 specific kind of implicit theological agenda
15 represented by intelligent design assumes certain
16 characteristics of God that not every Christian
17 theologian or Islamic or Jewish theologian, but in my
18 cases especially Christian theologian, would associate
19 with ultimate reality.

20 BY MR. THOMPSON:

21 Q My question was, where in the policy do you
22 see that Dover is pushing an implicitly theological

00251

1 agenda as the only plausible religious alternative?

2 Do you see that written anywhere in the policy?

3 A It's not written formally, but it's implicit
4 when they recommend to students that they be exposed
5 to intelligent design as an alternative Darwinian
6 theory. What that, in effect, amounts to is their
7 exposure to a specific theological idea which I find
8 to be very narrow and which many other theologians
9 would find to be very narrow as well.

10 Q But it is not the -- nowhere do they say it
11 is the only plausible theory; would you agree with
12 that statement?

13 A Well, what I'm saying, in effect, is that
14 why aren't they talking about some Hindu conception of
15 deity; why this particular -- why intelligent design?
16 Why did they focus it on that? Why not recommend the
17 students read the Buddhist, Taoist, native American
18 texts? Why this particular specifically Christian
19 idea, an idea encumbered by a whole history of
20 Christian reflection? If it's from a point of view
21 of -- of broadening students' minds, they should not
22 talk just about intelligent design if they're going to

00252

1 talk about other alternatives to -- to Darwinian
2 theory.

3 Q Let me make my question a little more
4 specific, then. Is there anywhere in the policy that
5 the Dover School District says that intelligent design
6 is the only plausible religious alternative?

7 A It's not said explicitly, no.

8 Q Okay.

9 MR. WILCOX: That's why he probably
10 said it's implicit.

11 THE WITNESS: It is.

12 MR. THOMPSON: Pardon me?

13 MR. WILCOX: Maybe that's why he used
14 the word implicit instead of explicit.

15 THE WITNESS: I used, it's an
16 implicitly theological agenda.

17 BY MR. THOMPSON:

18 Q And implicit is your own conclusion; is that
19 correct? When you say it's an implicit --

20 A Well --

21 Q -- theologic --

22 A -- it's my --

00253

1 Q -- implicitly --

2 A -- conclusion --

3 Q -- theological agenda, it's a conclusion
4 that you arrived at?

5 A It's a conclusion that I have arrived at
6 along with many other people.

7 Q But reasonable people can differ about that
8 conclusion, can they not?

9 MR. WILCOX: Objection.

10 THE WITNESS: I don't think reason, if
11 reason was properly followed here, would allow that
12 kind of wide open approach to this because my -- my
13 whole approach is not just theological, but logical.

14 Logically speaking, intelligent design
15 discourse does not fall within the same framework of
16 discussion that science and evolutionary biology
17 participate in. It belongs to a separate realm; that
18 of ideology rather than science. So it's unreasonable
19 in my view.

20 BY MR. THOMPSON:

21 Q So no reasonable person can accept any other
22 explanation of the policy that the Dover School

00254

1 District pushed ID as the only plausible religious
2 alternative?

3 MR. WILCOX: Objection.

4 THE WITNESS: Could you rephrase the
5 question?

6 BY MR. THOMPSON:

7 Q Rephrase it?

8 A Uh-huh, more directly.

9 Q I'm trying to respond to the comments that
10 you made that it's not reasonable to make any other
11 conclusion than that this is the only plausible
12 religious alternative.

13 A I didn't say that. What I was saying is
14 that it's unreasonable to propose that a book that
15 deals with intelligent design like Of Pandas and
16 People can function as an alternative way of looking
17 at life to the Darwinian approach because that's
18 mixing apples and oranges. It's taking an approach
19 which, as I've said all along, is implicitly
20 theological and trying to juxtapose that as an
21 alternative to a scientific mode of inquiry. That's
22 the unreasonableness of it.

00255

1 Q First of all, you'll agree that no student
2 was required to read Of Pandas and People; is that
3 correct?

4 A No, it was not required, but it was
5 recommended.

6 Q Do you see the word "recommended" anywhere
7 in the policy?

8 A In the statements that I read it seemed -- I
9 don't know the exact words.

10 Q Well, we have it right here in Exhibit 3.
11 It says, The reference book Of Pandas and People is
12 available for students who might be interested in
13 gaining an understanding of what intelligent design
14 actually involves. It doesn't -- that's the
15 statement. Does that say recommend?

16 A Yes, since it's the only text among many,
17 many other books that students could be pointed to to
18 expand their understanding of life. This is the one
19 that this report mentions, so I take that to be an
20 implicit recommendation.

21 Q Another use of the word implicit?

22 A Yes.

00256

1 Q And that's, again, your conclusion with
2 which other people could differ; is that correct?

3 A Other people --

4 MR. WILCOX: Objection. This is so
5 beyond the pale of discovery. All you're doing is
6 arguing over different interpretations. It's obvious
7 that they didn't say, there are lots of book in the
8 library; go read some. They said, there is a book in
9 the library, Of Pandas and People, that's available if
10 you want to learn more about this subject. Now, if
11 that's not a recommendation, I don't know what it is.
12 So why don't you just move on to something else
13 because we've only got an hour left.

14 MR. THOMPSON: Okay. It's important
15 because it deals with the policy, and, secondly, I'm
16 questioning him on what he thinks is implicitly
17 involved in the policy. He's using the words, and I'm
18 trying to discover what he means by the words. I'm
19 not trying to be --

20 MR. WILCOX: His use of the word
21 implicit was with reference to ID proponents. It
22 wasn't in reference to the Dover Area School District.

00257

1 He's not saying everybody on the school board is an ID
2 proponent, I don't think. If he means that, you can
3 ask him. Ask him what he means by that.

4 THE WITNESS: No, I don't mean that.

5 BY MR. THOMPSON:

6 Q We're talking about the policy. We're
7 talking about the policy. On page 6 again, at the
8 bottom of the second paragraph you say, For that
9 reason most scientists who believe in God reject the
10 proposition that ID is a scientific idea.

11 What is the basis for that statement? What
12 is your basis for that statement?

13 A I don't have a statistical basis. I'm only
14 speaking from my own contact in my work in science and
15 religion. Internationally I come into contact with
16 many, many scientists -- many scientists who believe
17 in God who are involved in science and religion
18 discussions, and almost to -- man or woman, they
19 reject the proposed -- the proposition that ID is a
20 scientific idea. I have encountered very, very few
21 people in the scientific community who are interested
22 in theology and who understand religion and are

00258

1 interested in religion who are advocates of this.

2 There are a small proportion of intelligent
3 design scientists that I come across occasionally, but
4 they're very, very much in the minority.

5 Q Well, how many scientists do you think there
6 are in the world?

7 A I have no idea.

8 Q Several hundred thousand?

9 A Well, more than that. There must be
10 millions.

11 Q Well, how many scientists have you come
12 across?

13 A I've come across a sampling that I think is
14 representative of many different scientists;
15 scientists from many different areas of the world,
16 many different areas of expertise. And I can say that
17 in the western world especially that almost all of
18 them would reject the idea that intelligent design is
19 a scientific idea.

20 Q Well, you say "a sampling." Can you give me
21 a number?

22 A Hundreds.

00259

1 Q Hundreds?

2 A And I've addressed thousands, and in
3 question and answer sessions afterwards, that's when I
4 do a lot of my contact with these scientists. So they
5 hear me out, and if they thought that I was saying
6 something they didn't agree with, they would -- they
7 would tell me so. And my -- my sense is that
8 90 percent or more tend to like my approach to
9 evolution.

10 Q There are a lot of questions on that
11 statement that you made. How do you know all these
12 people believe in God unless you specifically ask
13 them?

14 A These -- these are people that are involved
15 in many, what are called, local society initiatives
16 that are sponsored by the John Templeton Foundation.
17 These are organizations all over the world which bring
18 together local science -- scientists to discuss issues
19 in religion, and I've addressed many of these groups.

20 I'm a member of the board of the Metanexus
21 Foundation, which is the foundation that disburses
22 funds to these local society initiatives all over the

00260

1 world. So among people in the humanities, I've had
2 much more contact with a wide spectrum of scientists
3 than most people in my field especially.

4 Q Are you also a member of the -- on the board
5 of the Templeton --

6 A Yes, Templeton Foundation as well. I am at
7 the moment.

8 Q On page 6, the bottom of the page, last
9 paragraph -- let's see here. Yeah, the last
10 paragraph, it's paragraph four, it starts -- the
11 second sentence, quote, From the point of view of the
12 most prominent theologians, therefore, not only is ID
13 poor science, it is also appalling -- appallingly --
14 it is --

15 A Appalling --

16 Q -- also --

17 A -- theology.

18 Q -- it is also appalling theology, period,
19 end quote.

20 Do you believe that?

21 A Yes. I didn't document -- this is not a
22 scholarly paper. I could have put a footnote after

00261

1 every sentence in here. But if you want a list of
2 some of the most prominent theologians, I can name
3 people like Karl Barth, Paul Tillich, for example.

4 Paul Tillich has had an enormous influence
5 in the shaping of contemporary theology. He objects
6 to intelligent design because it brings in ultimate
7 reality as one cause among others in a whole series of
8 causes which is an implicit demotion of God.

9 The theologians that I'm referring to here,
10 Catholic and Protestant and Jewish, all consider
11 intelligent design, or in some cases natural theology
12 as a whole, to be an implicit trivialization of God
13 because it makes ultimate reality one cause, among
14 others, in a series of natural causes.

15 And this is how intelligent design argument
16 is implicitly -- again I say "implicitly" because
17 explicitly they deny that they're doing this. But
18 they're bringing in an ultimate level of explanation
19 at the level of -- in an explanatory slot where we
20 normally deal with physical causes. So God then
21 becomes one physical cause among others implicitly,
22 and that's a denial of divine transcendence, so that's

00262

1 why I say it's theologically -- theologically it's
2 not -- it's appalling theology because it is an
3 attempt, in a sense, to bring the divine down to a
4 level of ordinary, mundane scientific inquiry.

5 Q But you'll agree with me that the ID
6 theorists don't view the theory of ID as theology?

7 A Formally speaking they deny that it is, but
8 once again, as we've said many, many times, it
9 functions religiously and theologically in the three
10 senses of the term religion that I mentioned earlier.

11 Q As do many Darwinian theorists; is that
12 correct?

13 A The Darwinian theorists function as
14 religious in the first sense of the term not in the
15 second and third.

16 Q But you didn't distinguish --

17 A Many Darwinians, not all by any means -- for
18 example, Ken Miller is an exception. But many
19 Darwinians I have agreed do tend to implicitly make
20 Darwin -- Darwinian explanation ultimate explanation,
21 and that's wrong. That's religiously inappropriate,
22 scientifically inappropriate.

00263

1 Q Well, why would you introduce the theory of
2 intelligent design to your class if it's appalling
3 theology?

4 A I do this in all my -- in all my courses.
5 As I mentioned earlier -- we went over there several
6 times before -- I used to teach a course called The
7 Problem of God, and I introduced my students to
8 atheistic thought because I want them to be able to
9 deal with it, to critically examine it. If they never
10 come across these ideas within a context where they
11 can critically examine it, they will end up, as many
12 kids do, going out to graduate school or whatever
13 without sufficient preparation in terms of critical
14 awareness. So I want students -- I introduce them not
15 only to intelligent design, but I introduce them to
16 Dawkins to E.O. Wilson to Stephen J. Gould and others
17 who conflate ideology with science so they will be
18 able to critically distinguish science from ideology.

19 Q And the fact that it is appalling theology
20 is not relevant to the purpose for which you use
21 intelligent design; is that correct?

22 A In the classroom?

00264

1 Q Right.

2 A No, it's not relevant at all, but it is one
3 prominent, publicly known position which is the duty
4 of educators to allow their students to -- to come
5 into contact with so that they can be critically --
6 able to examine it critically.

7 Q You will agree that the teachers -- the
8 biology teachers in Dover do not, in fact, teach
9 intelligent design?

10 A I don't -- I don't know that that's
11 universally the case.

12 Q If all that is being read is that statement
13 and nothing further, that is not teaching intelligent
14 design, is it?

15 A In itself, correct.

16 Q Okay. Can you answer that yes or no?

17 A Yes.

18 Q It is not teaching intelligent design; is
19 that correct?

20 MR. WILCOX: Objection, that's a double
21 negative question. It's bound to be confusing.

22 MR. THOMPSON: Okay.

00265

1 THE WITNESS: Yeah, it's confusing.

2 BY MR. THOMPSON:

3 Q I don't want to confuse you. I don't want
4 to confuse myself either. The fact that intelligent
5 design is merely mentioned in this four-paragraph
6 statement that is read does not amount to teaching
7 intelligent design, does it?

8 A Not directly, but indirectly it could
9 lead -- it's tendentious, let's say; it could lead
10 toward a teacher -- I could see how a teacher who is
11 personally predisposed toward intelligent design would
12 take this statement as legitimation of teaching
13 intelligent design in the classroom. I could see that
14 happen quite easily.

15 Q Does that fall within your definition of
16 teaching you gave me a while back?

17 MR. WILCOX: Which is "that"?

18 MR. THOMPSON: It was a long discussion
19 of what teaching is --

20 THE WITNESS: Yes.

21 MR. THOMPSON: -- and I don't want to
22 go through it, but we can if you want.

00266

1 THE WITNESS: My definition of teaching
2 applies in different ways to different fields of
3 study. In all fields of study the objective is to get
4 the student to come into contact with the human desire
5 to know, but as I also mentioned earlier, the desire
6 to know requires different methods in different
7 fields, and I would not want to confuse a science
8 class that's dealing with evolution by proposing that
9 they should look at -- or that they -- I would not
10 even mention Of Pandas and People in a science class
11 because it would give students the impression that
12 maybe this is an alternative to what they're learning
13 in biology.

14 BY MR. THOMPSON:

15 Q Well, my question is, merely mentioning the
16 phrase intelligent design, do you consider that
17 teaching intelligent design?

18 A Strictly speaking, no.

19 Q I must say I was very interested in your
20 definition of God in your book, Deeper Than Darwin,
21 but I don't understand it. I want to ask you some
22 questions about that. You define God as depth, I

00267

1 believe?

2 A Depth is one metaphor that we use among many
3 other metaphors available in reference to ultimate
4 reality.

5 Q Is there a -- can you give me a description
6 of what you mean by God is depth?

7 A I start with -- basing my thought here on
8 theologian Paul Tillich, and he points out that in our
9 experience of reality, there are four different areas
10 that we all encounter. We encounter other people; we
11 encounter ourselves; we encounter nature; and we
12 encounter history and society.

13 And to take the first, in our relationship
14 to another person we think we get -- we know that
15 person, but then this person will do something or say
16 something that surprises us or disappoints us, so if
17 we're to continue with our relationship with that
18 person, we have to dig to a deeper level. And we
19 think we know that person at that level, but once
20 again experience will show us that we do not.

21 To make a long story short, the reason that
22 we never reach rock bottom in our understanding of the

00268

1 other person is that that person has an inexhaustible
2 dimension, depth. The same is true of nature. The
3 same is true of history. The same is true of our own
4 selves. That, in other words, there's an
5 incomprehensible mystery. Depth is just another word
6 for mystery.

7 If you correlate it with the definitions I
8 gave -- three definitions, it would fit in the second
9 definition. So an awareness of the infinite and
10 inexhaustible depth of nature is one of the ways in
11 which I would try to give a person some sense of what
12 I mean by God. It fulfills the definition of God as
13 transcendent. It's not identical with nature,
14 history, us; it transcends us. Just instead of
15 thinking of God as up there as classical thought is
16 done -- as prescientific thought is done, after depth
17 psychology came along, a new horizon opened up to us,
18 that of the dimension of depth.

19 And that is just one of many ways in which
20 we can begin to find something in our experience off
21 of which we can bounce the word God so as to make some
22 sense of it. It's by no means an exhaustive

00269

1 understanding.

2 Q Your definition of God also, in a sense,
3 removes him from direct causation of life on earth; is
4 that correct?

5 A To make God a direct cause of anything is to
6 demote God. God is the ground of all causes, not --
7 not so much a specific physical cause but the ground
8 or the foundation of all causation.

9 Q So you would answer my question yes?

10 A Yes.

11 Q Okay. So even though the creed says, maker
12 of heaven and earth --

13 A Uh-huh.

14 Q -- you do not consider him maker of heaven
15 and earth as we would understand that?

16 MR. WILCOX: Objection.

17 THE WITNESS: The expression heaven and
18 earth refers to what is visible and invisible, and
19 what it means is that wherever there is being --
20 wherever there are beings, there's a ground of being,
21 and that's what we mean by creator.

22 BY MR. THOMPSON:

00270

1 Q This ground of being, I guess that's
2 another --

3 A That's a theological expression of Paul
4 Tillich.

5 Q But the creed talks about maker of heaven
6 and earth, and then the second line is of all
7 visible -- things visible and invisible.

8 A Yeah.

9 Q Are those different categories?

10 A No, I think they're two ways of saying that
11 whatever exists -- they're just two different ways of
12 saying that whatever exists has a foundation; that is
13 not part of the created world but which is the
14 foundation of the created world.

15 Q Did God make Adam?

16 A Who is Adam? What do you mean by "Adam"?

17 Q In the Book of Genesis.

18 A What do you mean by "make"?

19 Q Did God create Adam, the first man?

20 A What do you mean by "create"?

21 Q Whatever that definition normally means --

22 MR. WILCOX: Objection.

00271

1 BY MR. THOMPSON:

2 Q -- in common terminology.

3 A Well, it's a term that in theology we have
4 to be very careful with. What it means theologically
5 is that whatever exists has an ultimate cause or an
6 ultimate explanation.

7 Q Well, was there a man on earth referred to
8 in Genesis as Adam? Do you believe that?

9 A If you want me to give a full answer to this
10 question, I have to give you a little bit of
11 introduction to biblical literature. And the answer
12 to it is that Adam in the theological community today
13 is understood as a -- not an actual organic individual
14 but as the term itself means in Hebrew. It means
15 mankind. It has a kind of generic quality to it.

16 So I believe that God creates everything,
17 not just Adam, but everything. But God creates not in
18 the same way that scientific causes operate, but in a
19 much deeper way.

20 Q Well, am I correct in understanding, then,
21 that even though the Bible says -- refers to Adam as a
22 single man, you refer to him as mankind?

00272

1 A What the Bible is trying to do in that -- by
2 asking that question that you just asked, you -- you
3 assume that I'm following a literalist interpretation
4 of the Book of Genesis, which I do not as I've been
5 saying all day.

6 The Book of Genesis has a deep meaning, but
7 the deep meaning is not to be arrived at by taking the
8 individual characters in the story as representative
9 of factual, actual human beings. The story is trying
10 to get across the importance of hope for people, and
11 what it's trying to say is that in spite of evil and
12 in spite of the mess we get ourselves in, there is a
13 reality which is sufficiently resourceful, God; that
14 by being able to bring a whole universe into existence
15 can also bring our own lives to fulfillment as well in
16 spite of all evil.

17 Q Well, maybe to make it more specific without
18 referring to the Bible since you are Roman Catholic,
19 let's talk about the magisterium of the church, what
20 the Roman Catholic church believes. The Roman
21 Catholic church believes that Adam is a word for -- a
22 generic word for humankind, or does the church believe

00273

1 that there was a man -- the first man created by God?

2 A Here, again, you have to be careful to
3 define what you mean by "church." In the teaching of
4 the Second Vatican Council, the "church" means the
5 whole people of God, not just the magisterium. And
6 the magisterium is not just ecclesia docens, ecclesia
7 teaching, works of the church teaching, but it's also
8 the church learning as well. This is a theology that
9 has emerged most explicitly in the Second Vatican
10 Council.

11 And when the magisterium -- if you identify
12 the Pope as magisterial -- speaks, the Pope, like
13 everybody else, learns. And what the past pope, Pope
14 John Paul II, learned over the course of his lifetime
15 was that evolution is a fairly probable hypothesis,
16 and that's why he wrote a statement showing that the
17 Catholic church is not opposed to evolutionary
18 thinking. The only thing that it's opposed to is the
19 identification of evolution as materialism, and that's
20 what I've been bringing out today.

21 So the church has no formal statement ever
22 that I know of that Adam was a factual historical

00274

1 being.

2 Q Well, I mentioned the magisterium and you
3 responded by the magisterium. What about the
4 catechism of the Catholic church?

5 A The Catholic catechism is misinformed and
6 it's out of touch with what's going on in science when
7 it speaks of Adam almost as a historical person.
8 There's been a lot of discussion in the theological
9 community about the thorough and complete inadequacy
10 of the Catholic catechism, of the people who wrote the
11 Catholic catechism were not informed about science and
12 evolution, and that's one of the things that happens
13 when people do not become informed about science.

14 Q Would you then agree that at least the
15 catechism refers to Adam as a man created by God?

16 A Yes, and I thoroughly disagree with that
17 approach. And one can be a good Catholic and dissent
18 from specific formulations like that, and even the
19 papal statements themselves, I think, implicitly rebut
20 that particular formulation. This is not an
21 infallible document.

22 Q What about Eve; do you believe that there

00275

1 was a woman named Eve?

2 A The Eve that I accept is our ancestor in
3 Africa that the scientists talk about. But, no,
4 that's all part of a way of trying to get across a
5 deep religious truth which we miss altogether if we
6 interpret it literally.

7 Q Well, do you believe in the original sin?

8 A I believe that the Doctrine of Original Sin
9 can make sense -- very good theological sense if we
10 don't interpret it as something that's inherited
11 genetically from one generation to the next, but
12 instead understand it as applying to the fact that the
13 world into which each one of us is born has been
14 messed up in some ways by the accumulation of bad
15 human decisions.

16 All of us are contaminated by evil social
17 structures, for example, unjust social structures.
18 Look at the poverty in Africa and elsewhere that's due
19 to the maldistribution of the world's wealth. The sin
20 of injustice is something that has an effect on
21 everybody born into this world.

22 That's original sin, and it's much more

00276

1 serious and much more in need of redemption than
2 something that's inherited biologically.

3 Q Do you believe in the Catholic Doctrine of
4 Original Sin as a result of decisions made by Adam and
5 Eve?

6 A Again, you're asking this question in the
7 form of a biblical literalist.

8 Q I'm talking about, again, the catechism of
9 the church, the magisterium or the catechism of the
10 church.

11 MR. WILCOX: Objection, compound.

12 THE WITNESS: You're trying to force me
13 to play a literalist creationist sort of game which I
14 have all day been distancing myself from, and I've
15 been doing that because of theological convictions and
16 religious convictions that we trivialize biblical text
17 if we ask questions the way that you just did.

18 BY MR. THOMPSON:

19 Q Did you answer my question?

20 A It's not a meaningful question.

21 Q So you refuse to answer it?

22 A If I said yes or no to a question like that,

00277

1 it would -- it would implicitly be making me a part of
2 a kind of literalist way of looking at religious text.
3 So I could say in a figurative way, and in preaching,
4 for example -- I'm not a preacher, but if I were a
5 preacher, I could use terms like the fact we are all
6 descendents of Adam, for example, to figuratively
7 represent the fact that we're all in need of
8 redemption. That's the whole point of the story.

9 The point of the story is not to make people
10 literalists but to make people aware of their need for
11 redemption.

12 Q Isn't it true, however, that the magisterium
13 and the catechism of the church hold that Adam was, in
14 fact, a unique individual created by God and that Eve
15 was, in fact, a unique individual created by God;
16 doesn't the church hold that as a part of its
17 magisterium and catechism?

18 A It depends on what you mean by "magisterium"
19 here. If you mean the teaching of the deepest truths
20 that have been bequeathed to us by scripture and
21 tradition, the magisterium would not require that I
22 say literally that Adam and Eve existed, and I don't

00278

1 know of any competent theologian who would go along
2 with that.

3 Q What about the same question relating to the
4 catechism of the church?

5 A Catechism of the church is a conditioned --
6 a historically conditioned document which changes.
7 There have been many catechisms over the course of
8 times. Some catechisms, like the Baltimore catechism,
9 express things one way. The reason that we come up
10 with new catechisms is people recognize the inadequacy
11 of earlier ones. That's the only reason why the new
12 catechisms are brought about.

13 Already there are a lot of people such as
14 myself who say we can do a lot better in presenting
15 Christian doctrine than this carelessly constructed
16 catechism. Not all parts are carelessly constructed,
17 but some of them are.

18 Q Do you believe in the virgin birth of
19 Christ?

20 A I believe it in this sense; that what the
21 virgin birth literature is trying to get across is not
22 a biological fact but it's trying to bring out -- the

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1 whole story of the virgin birth, if you read
2 contemporary biblical scholarship, is trying to make a
3 theological point that this is a special person.

4 The Christians were not the first to talk
5 about virgin birth. You find in interreligious
6 literature parallel types of stories in which
7 prominent individuals were brought about in a very
8 exceptional manner. And the purpose of this kind of
9 language, if you look at it historically in the
10 context in which it arose, was to give people a sense
11 of the specialness of Christ.

12 Q Trying to interpret what you just said,
13 then, what you are saying is that the virgin birth was
14 not, in fact, a historical fact?

15 A It's not a verifiable -- even in principle
16 it's not a verifiable biological fact.

17 I could say the same thing of the
18 resurrection. The resurrection is not a
19 scientifically knowable reality.

20 Q Well, see, I'm not talking about scientific
21 now. I'm talking about your -- you're a Catholic
22 theologian, and I'm talking about what you as a

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1 theologian believe.

2 A All right. If you'll concede that, that
3 we're not talking about scientifically factual here,
4 then the interpretation that I gave is in conformity
5 with that requirement that you just laid down. I'm
6 giving you an interpretation and understanding of the
7 virgin birth which does not require that we trivialize
8 it by making it some sort of scientific curiosity but
9 that we look for the religious intention of the
10 authors who were talking about this event, and that
11 religious intention was to uphold -- to find one of
12 many, many different ways in which the New Testament
13 tries to bring out the preeminence of Christ.

14 Q Again, keeping in mind, now, we're talking
15 about what you believe as a theologian, I'm going to
16 ask you the question again. Do you believe in the
17 virgin birth as an actual fact of history?

18 A That's an irrelevant thing. That's an
19 irrelevant question. Do I believe in -- you don't --
20 you don't believe in facts. Facts are things which
21 are -- which are -- things that are publicly knowable.
22 The whole of the New Testament is in a genre

00281

1 of literature in which one has to undergo what I
2 earlier referred to as a personal transformation in
3 order to understand what's going on in the text. So
4 that to ask the question do I believe in the virgin
5 birth as a fact is, in a sense, to miss the whole
6 point of the doctrine of -- or the biblical idea of a
7 virgin birth. And that point is to draw attention not
8 to this woman and not to some biological curiosity,
9 but to the preeminence of this man.

10 Q Well, the only reason I ask that question is
11 because the catechism of the church speaks about it.

12 A You have to understand here that --
13 MR. WILCOX: That's not a question.

14 THE WITNESS: Okay.

15 MR. WILCOX: If he wants to ask a
16 question, I assume he's getting to one.

17 MR. THOMPSON: Yeah. Thank you.

18 BY MR. THOMPSON:

19 Q So I'm asking you specifically, is that a
20 historical fact? Regardless of whether it's trivial
21 or irrelevant in your mind, is that a historical fact?

22 A What do you mean by "historical"?

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1 Q That it occurred in history, in time.

2 A That it occurred in what sense? Physically?

3 Q Yes.

4 A In a way that could be in principle verified
5 by biological testing?

6 Q I would say so.

7 A No. And for me to say yes to a question
8 like that is, in a sense, to place me in the camp of
9 literalist religiosity which all day I have been
10 distancing myself from.

11 Q Do you believe that Christ was the son of
12 God?

13 A Yes, provided you understand what "son of
14 God" means.

15 Q I'm using that term as a Catholic would use
16 that term.

17 MR. WILCOX: Objection.

18 THE WITNESS: The term son of God, if
19 you know the biblical literature, is one that's
20 employed in other ways than -- and applied to other
21 individuals in biblical history in the Old Testament.
22 So what you're asking is do I believe in the Doctrine

00283

1 of Hypostatic Union, perhaps, the union of the God,
2 the nature of the God and the nature of human in
3 Christ, yes.

4 BY MR. THOMPSON:

5 Q Well, do you believe that Christ is God --

6 A As I said --

7 Q -- incarnate?

8 A As I said earlier, I can recite the Nicene
9 Creed with complete genuineness and honesty, but you
10 have to remember that as a theologian I have been
11 trained to see things in this creed that perhaps a
12 literalist mentality would not. So the questions that
13 you're asking me right now are questions that really
14 are not able to elicit, even in principle, what I
15 really believe because you're trying to force me into
16 a kind of literalist response -- yes or no response to
17 the type of questions that you're asking.

18 Q Well, those are the, you know, same kind of
19 responses (sic) that priests ask children as they go
20 through confirmation.

21 A But in that context -- that's a religious
22 context. It's not an intellectual context. When I go

00284

1 to church, and I go to mass faithfully every Sunday,
2 and recite the creed, what I'm thinking when I recite
3 this creed is not the same thing that a seventh grader
4 or third grader is thinking.

5 Q What about the Catholic catechism; is it the
6 same as the Catholic catechism is depicting and
7 describing?

8 A Again, there are different levels of
9 adequacy with which one even reads the catechism. The
10 catechism is not the best way to introduce people to
11 religion. But if you're talking about catechisms,
12 they have -- the different formulas in the catechism
13 can be read at many different levels of theological
14 development.

15 Q Do you think truth changes for the church?

16 MR. WILCOX: Objection.

17 THE WITNESS: Again, you're using
18 "truth" in a way that I wouldn't use it. Truth as
19 the -- truth is the objective of the human desire to
20 know, and it's not something that could ever be
21 sequestered and confined by the human mind. It's a
22 goal that we're on our way toward our whole lives. Do

00285

1 I believe that there is something there that is
2 calling me to be honest, to be truthful? Yes.

3 BY MR. THOMPSON:

4 Q Do you believe that God came into this world
5 through Christ?

6 A Yes. I also believe that God has been
7 coming into this world in other ways as well.

8 Q Do you believe that God came into this world
9 as Christ for a specific purpose, that being the
10 salvation of men's souls?

11 A That's one way of putting it, but eastern
12 Christianity would not put it that way so much as to
13 say that God comes into the world to divinize the
14 world.

15 Q To what?

16 A Divinize it, to make the world -- to
17 transform the universe.

18 Q So that God is not someone who stays outside
19 of nature?

20 A Right. God, as I've been saying all along,
21 is deeply involved in nature but not in the same way
22 that the scientific cause is involved, more deeply

00286

1 than that.

2 Q Well, he -- he actually came down and lived
3 on earth; correct?

4 A I believe in the incarnation, but to put it
5 in the formula that you just did is only the -- a very
6 pre-philosophical, pre-theological way of getting at
7 the truth of the Doctrine of the Incarnation.

8 Q Do you believe in miracles?

9 A I believe that there are things that happen
10 in nature which do not violate scientific laws, laws
11 of physics and chemistry, but which can be interpreted
12 by the religious mind as evidence of the presence of
13 the divine.

14 Q Do you believe the biblical account of the
15 parting of the Red Sea?

16 A That's a stylized legendary way of getting
17 across the truth that God is ultimately a liberating
18 reality that seeks to set us free, including free from
19 religious prejudices.

20 Q What does "stylized" mean? What do you mean
21 by "stylized"?

22 A It's the specific style of getting across to

00287

1 a pre-scientific people fundamental religious truth
2 that there is something deeply liberating at the
3 ultimate levels of reality.

4 Q Am I to then conclude by that statement that
5 there was no such thing as the parting of the Red Sea
6 as it was described in the Bible?

7 A As you see it in Cecil B. DeMille's Ten
8 Commandments, no. There was not -- if you were there
9 with the eyes of a naturalist, all you would see is
10 people struggling through what was called the Yom Suf.
11 It wasn't even the Red Sea. It was the Sea of Reeds.
12 Most scholars now deny that it had anything to do with
13 the Red Sea at all. And you would not have seen walls
14 of water like that. You would have seen -- if you
15 were there with the eyes of a scientist or with a
16 camera, that's what you would have seen.

17 What religion does is look for the deeper
18 meanings of such events, and the Hebrews concluded
19 that on the basis of that experience that we can posit
20 the existence of an ultimate reality, which is not
21 only liberating of the world, but eventually they
22 developed a Doctrine of Creation out of that; that

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1 this liberator is also a creator.

2 So Genesis, in fact -- the stories in
3 Genesis are much later than the Exodus stories in
4 their theological reflections that unfold as the
5 religious thinkers think about things that unfold, the
6 deeper meanings. This is why the notion of death is
7 very important to me.

8 Q Do you believe that Christ was crucified,
9 died and was buried as a historical fact?

10 A Yes, but I would like to know what all of
11 this has to do with this particular case?

12 Q Because it's -- I'm testing your credibility
13 as a Catholic theologian.

14 A But I would like to know what -- what gives
15 you the authority to be able to decide what is or what
16 is not a Catholic theologian --

17 Q I'm not making that -- I'm not making that
18 assumption.

19 A Well, to be able to think you can raise the
20 relevant questions that can decide that issue.

21 Q Because you're here as a theologian and
22 you've been discussing all of intelligent design as a

00289

1 religious doctrine --

2 A I'm here --

3 Q -- and you've defined religion for me, and
4 you've written a book, which we've been discussing,
5 Deeper Than Darwin, where you actually had been making
6 those kinds of comments.

7 A Well, if you read the books, you will see
8 that the kinds of questions that you've been asking me
9 are not appropriate to the kind of theology that I do.

10 Q Nevertheless, we'll continue on here. Do
11 you believe that Christ was crucified, died and was
12 buried as a historical fact?

13 A Of course.

14 Q Okay. Do you believe that he was
15 resurrected from the dead as a historical fact?

16 A What do you mean by "historical fact"?

17 Q That it happened.

18 A Well, if you put things in that way, yes,
19 Jesus is alive. Resurrection, you know, is only one
20 of the ways in which the New Testament tries to
21 represent -- the fundamental fact for the Christian is
22 that Jesus lives. The way in which that was expressed

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1 in the New Testament is through resurrection stories,
2 but it was also expressed through the stories about
3 the coming of the spirit of Christ upon the Disciples
4 who were galvanized by their common experience of this
5 man during his lifetime to the belief that this man's
6 substantiality was so solid that death could not
7 defeat it, and that, therefore, he lives. And
8 resurrection is one way of representing that.

9 But, again, if there was a camera and
10 scientific experts in the upper room, that the
11 evangelists talk about, when Jesus appeared, they
12 would not have seen him.

13 Avery Dulles, for example, who is a rather
14 conservative theologian and now a Cardinal of the
15 Roman Catholic church -- you might want to read his
16 book Apologetics of the Biblical Christ. He said this
17 in this books many, many years ago, that without
18 faith, nobody would have seen the risen Christ,
19 including the early Disciples.

20 Q So what you're saying, if I gather
21 correctly, is that if we had a camera going in the
22 upper room --

00291

1 A Right.

2 Q -- after Jesus was resurrected --

3 A Yes.

4 Q -- taking photos of that room

5 continuously --

6 A Right.

7 Q -- there would not have been a Christ?

8 A That's my opinion, and it's an opinion that
9 I share with some other theologians as well.

10 Q Do you believe that the Bible is the
11 inspired word of God?

12 A Yes.

13 Q Okay. Do you believe in the Holy Trinity?

14 A Of course.

15 Q Okay. So you believe in the existence of
16 God the Father, the Son and the Holy Spirit?

17 A As I said all along I can recite the Nicene
18 Creed, the Apostle's Creed with complete honesty and
19 fullness in faith.

20 Q There was a question I wanted to ask you,
21 and then I forgot, the -- Christ came to this world
22 for the specific purpose of dying for our sins; isn't

00292

1 that true?

2 A That's one interpretation.

3 Q Well, isn't that the interpretation that the
4 Catholic church gives?

5 A Yes, and I can accept that, but that does
6 not exhaust the meaning of Christ. That's what I'm
7 saying. Christ also came to bring this universe to
8 fulfillment, this evolving universe.

9 Q True. But the fact is that he came here for
10 the purpose of --

11 A That's part of the creed. I can accept
12 that.

13 Q Okay. We've had a long, long, long day, and
14 I appreciate your patience.

15 MR. THOMPSON: And the patience of you,
16 Counselor.

17 BY MR. THOMPSON:

18 Q Is there anything now that you think back --
19 is there anything that you want to add or subtract --

20 A No.

21 Q -- from your testimony?

22 A No.

00293

1 MR. THOMPSON: Okay. That will be it.

2 Thank you.

3 THE WITNESS: Thank you.

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5

6 (Signature not having been waived, the
7 deposition of JOHN F. HAUGHT, PH.D., was concluded
8 at 4:45 p.m.)

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ACKNOWLEDGMENT OF DEPONENT

I, JOHN F. HAUGHT, PH.D., do hereby
acknowledge that I have read and examined the
foregoing pages of testimony, and the same is a true,
correct and complete transcription of the testimony
given by me, and any corrections appear on the
attached Errata sheet signed by me.

(DATE)

(SIGNATURE)

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CERTIFICATE OF SHORTHAND REPORTER-NOTARY PUBLIC

I, Dana R. Craddock, Registered
Professional Reporter, the officer before whom the
foregoing deposition was taken, do hereby certify that
the foregoing transcript is a true and correct record
of the testimony given; that said testimony was taken
by me stenographically and thereafter reduced to
typewriting under my direction and that I am neither
counsel for, related to, nor employed by any of the
parties to this case and have no interest, financial
or otherwise, in its outcome.

IN WITNESS WHEREOF, I have hereunto set my
hand and affixed my notarial seal this 13th day of
June, 2005.

My Commission Expires:
June 30, 2005

NOTARY PUBLIC IN AND FOR
THE DISTRICT OF COLUMBIA

