

# The Vise Strategy

## (Squeezing the Truth out of Darwinists)

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*Im Lichte der Kontroverse, die zuerst in USA, doch nun auch hierzulande zum Thema wird, ob nämlich „Intelligent Design“ neben der Evolutionstheorie an öffentlichen Schulen gelehrt werden soll, wird in diesem Papier eine Strategie vorgeschlagen, wie man Darwinisten bei solchen Diskussionen „auf den Zahn“ fühlen kann.*

### 1 Introduction

The recent hearings conducted by the school board in Kansas (May 5-7, 2005) made it clear that what needs to happen is not for our side to be interrogated by Clarence Darrow manqués (like Pedro Irigonegaray, the attorney for the other side in Kansas) but for our side to get to interrogate the Darwinists. As I pointed out in my blog (uncommondescent.com, May 6, 2005, “Kansas Hearings: Scopes in Reverse? --Yes and No”), Darwinists have a long record of evading critical scrutiny, a problem that goes right back to the original Scopes Trial.

In the Scopes Trial, Clarence Darrow (cf. Pedro Irigonegaray) got to interrogate the evolution critics, but William Jennings Bryan (cf. Kansas attorney John Calvert for our side) did not get to interrogate the evolutionists. It is a little known fact that William Jennings Bryan agreed to be interrogated by Clarence Darrow only if Bryan could in turn interrogate Darrow on Darrow’s views of evolution. Darrow agreed, but then right after interrogating Bryan directed the judge to find Scopes guilty, thereby closing the evidence and thus preventing Bryan from interrogating Darrow (for the details about this ploy, see Edward Sisson’s essay in my book *Uncommon Dissent*).

Thus, in a crucial way, the Kansas hearings repeat the pattern set by the Scopes Trial, which has been repeated many times since, namely, evolutionists escaped critical scrutiny by not having to undergo cross-examination. In this case, they accomplished the feat by boycotting the hearings. I therefore await the day when the hearings are not voluntary but involve subpoenas that compel evolutionists to be deposed and interrogated at length on their views. There are ways for this to happen, and the wheels are in motion (e.g., Congressional hearings over the teaching of biology in federally funded high schools for military kids). For such hearings to have the desired effect, however, will require that evolutionists be asked the right questions. What I propose in this document (henceforth “The Vise Document”) is to lay out a strategy for interrogating the Darwinists to, as it were, squeeze the truth out of them. For a glimpse of what I have in mind, see the examination of Eugenie Scott by Robert George before the U.S. Commission on Civil Rights in the Appendix (p. 14 of this document).

### 2 Essence of the Vise Strategy

Over a decade ago, Phillip Johnson, in his public lectures, used to describe his critique of evolutionary naturalism as encapsulated in an analysis of three words: science, evolution, and creation. According to Johnson, by suitably equivocating about the meaning of these words, Darwinists were able to confuse the public and themselves into con-

senting to a theory that ordinary standards of evidence rendered completely insupportable.

The debate has moved along considerably since the early 90s when Johnson was mainly focused on critiquing evolution. Indeed, ID now offers a positive alternative to conventional evolutionary theory. I therefore propose that we add two words to Johnson’s list: design and nature.

When interrogating Darwinists with the goal of opening up discussion in the high school biology curriculum about evolution (i.e., strengths, weaknesses, and alternatives), I therefore propose subjecting them to a sustained line of questioning about what they mean by each of these five terms: science, nature, creation, design, and evolution. In addition, it will help to keep in mind that for the purposes of interrogation, there are three types of Darwinists:

(1) The Richard Dawkins Darwinist (abbreviated RD Darwinist), who is virulently against religion of any stripe and uses evolution as a club to beat religious believers. Richard Dawkins Darwinists despise religious belief and regard religious believers as having to check their brains at the door if they are want to maintain both their faith and evolutionary theory.

(2) The Eugenie Scott Darwinist (abbreviated ES Darwinist), who is not religious in any traditional sense (in particular, this type of Darwinist does not think God does or can act in any way that makes a difference in the natural world) but at the same time thinks it is ill-advised to antagonize religious believers by using evolutionary theory as a club. The Eugenie Scott Darwinist wants to placate religious believers by assuring them that they can be good followers of their faith as well as good Darwinists.

(3) The Kenneth Miller Darwinist (abbreviated KM Darwinist), who is a traditional Judeo-Christian believer, holds that God has acted miraculously in salvation history (with such miracles as the parting of the Red Sea, the resurrection of Christ, the Virgin Birth, etc.) but denies that God’s activity in natural history is scientifically detectable. The Kenneth Miller Darwinist is an orthodox religious believer and an orthodox Darwinist. He is the poster child for the Eugenie Scott Darwinist.

The vise strategy consists in subjecting each of these types of Darwinists to a sustained line of questioning about the five key terms (nature, science, evolution, creation, design), questions that they have no choice but to answer -- hence the “vise” metaphor. The aim of this line of questioning is to make clear to those reading or listening to the Darwinists’ testimonies that their defense of evolution and opposition to ID are prejudicial, self-contradictory, ideologically

driven, and above all insupportable on the basis of the underlying science.

There's a sixth term that could have been added to the five key terms, but is best kept in the background, namely, religion. Although the three types of Darwinists will need to be subjected to the same line of questioning regarding our five key terms, with regard to religion, the interrogation will need to be tailored to the type Darwinist being interrogated. Thus, for the RD Darwinists, the aim of the interrogation is to goad them into doing a Rumpelstiltskin, namely, get them to publicly tear themselves into pieces in their rage against religion. The perfect ending to such an interrogation would be for them to admit that they are Darwinists first and foremost because Darwinism is the most effective tool for destroying religion (this is the ideal -- don't expect to achieve it).

The ES and KM Darwinists, by contrast, need not so much to be antagonized or goaded as gently guided into an intellectually indefensible position regarding religious belief. Even so, the strategy for approaching these two types of Darwinists must be a bit different. The ES Darwinist wants to appear open minded and generous, assuring religious believers that Darwinism is compatible with their religious beliefs. For the ES Darwinists, the aim of the interrogation is to show that they are condescending elitists who don't have a religious bone in their bodies but who nonetheless presume to tell religious believers how they should make their peace with evolution.

Finally, the KM Darwinist actually does have a sincere religious faith, believing that God is the creator of the world and has acted miraculously in salvation history (maybe). For the KM Darwinists, the aim of the interrogation is to exploit the tension between their belief in divine creation and their vehement denials that they are not creationists (note that under creationism they invariably include ID). The KM Darwinist wants to be an orthodox Darwinian and an orthodox religious believer. But being an orthodox religious believer means having a view of divine action that is at odds with Darwinian naturalism/scientific materialism and at the same time is compatible with creationism. KM Darwinists need to be pressed into admitting that their theology requires that ID be kept as a live possibility.

To see that this approach to the KM Darwinists is not far-fetched, consider that the real Kenneth Miller, in his book *Finding Darwin's God* (226-232), is critical of intelligent design in biology but nonetheless argues for an intelligence or purposiveness that underlies the laws of physics (laws that are necessary for the universe to be life-permitting). Miller's reward for proposing this very mild form of intelligent design at the level of physics and cosmology is to be called a creationist by University of California professor Frederick Crews. In reviewing Miller's book, Crews writes:

*When Miller then tries to drag God and Darwin to the bargaining table [by finding design or purpose underlying the laws of physics], his sense of proportion and probability abandons him, and he himself proves to be just another "God of the gaps" creationist. That is, he joins Phillip Johnson, William Dembski, and company in seizing upon the not-yet-explained as if it must*

*be a locus of intentional action by the Christian deity. (New York Review of Books, October 18, 2001)*

In summary, the essence of the wise strategy is to interrogate Darwinists on what they mean by the terms science, nature, creation, design, and evolution. Moreover, this strategy requires adjusting the interrogations so that on the question of religion RD Darwinists come across as the bigoted extremists that they really are, so that the ES Darwinist come across as the condescending elitists that they really are, and so that the KM Darwinists come across as the closet ID theorists that they really are.

### 3 Suggested Questions

What follows, then, is a series of questions aimed at Darwinists. These questions are to be employed in settings where Darwinists cannot evade answering them (e.g., through boycotts or simply by refusing to answer them). I expect to keep adding to and refining these questions over time. Ideally, these questions will constitute a steel trap that leave the Darwinists no room to escape. Unless otherwise indicated, the questions listed are intended for all three types of Darwinists. Comments are placed in brackets. In posing these questions, I follow the advice given to me by Edward Sisson, a litigator with an excellent grasp of this debate:

*Cross-examination is largely a matter of 2 things: (1) stating as a fact a point we believe true, and asking the witness if it is true (example: "Doctor, isn't it true that the earth revolves around the sun?") and (2) asking the witness to admit that two statements are contradictory (example: "Doctor, doesn't Mr. Jones's statement that the earth revolves around the sun directly contradict your statement that the sun revolves around the earth?" If one of the statements is true, the other must be false, correct?")*

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Is it fair to say that you regard intelligent design as not a part of science? Would you agree that proponents of intelligent design who characterize it as a "scientific discipline" or as a "scientific theory" are mistaken?

Would you characterize intelligent design as a "pseudoscience"?

Would it be fair to say that, in your view, what makes intelligent design a pseudoscience is that it is religion masquerading as science? If ID is something other than science, what exactly is it?

Are you a scientist?

Do you feel qualified to assess whether something is or is not properly a part of science? What are your qualifications in this regard? [Take your time here.]

Do you think that simply by your being a scientist, you are qualified to assess whether something is or is not properly a part of science?

Have you read any books on the history and philosophy of science?

[If yes:] Which ones? [e.g., Herbert Butterfield, Ronald Numbers, Thomas Kuhn]

Would you agree that in the history of science, ideas that started out as "pseudoscientific" may eventually be-

come properly scientific, for example, the transformation of alchemy into chemistry?

Is it possible that ID could fall in this category, as the transformation into a rigorous science of something that in the past was not regarded as properly scientific? [If no, return to this point later.]

Are there precise criteria that tell you what belongs to science and what doesn't?

[If no:] Then on what basis do you preclude ID from being science? In that case, isn't your ruling out ID as belonging to science purely a subjective judgment? How do you rule it out as not being science if you have no criteria for judging what's in and what's outside of science?

Please list all the criteria you can think of that demarcate science from non-science. [Take your time with this.] Are you sure these are all of them? If you are not sure these are all of them, how can you be sure that your criteria are the right ones?

Do these criteria work in all cases? Do they tell you in every instance what's in and what's outside of science? Are there no exceptions?

[If yes:] Tell me about the exceptions? [After several of them:] Are there any more exceptions? Is that everything? [Take your time with this.]

Let's consider one very commonly accepted criterion for what's in and what's outside of science, namely, testability. Would you say that testability is a criterion for demarcating science? In other words, if a claim isn't testable, then it's not scientific? Would you agree with this?

Would you give as one of the reasons that ID is not science that it is untestable? [Return to this.]

Let's stay with testability for a bit. You've agreed that if something is not testable, then it does not properly belong to science. Is that right?

Have you heard of the term "methodological materialism" (also sometimes called "methodological naturalism")?

Do you regard methodological materialism as a regulative principle for science? In other words, do you believe that science should be limited to offering only materialistic explanations of natural phenomena?

[If you experience resistance to this last question because the witness doesn't like the connotations associated with "materialism" try:]

This is not a trick question. By materialistic explanations I simply mean explanations that appeal only to matter, energy, and their interactions as governed by the laws of physics and chemistry. Do you regard methodological materialism in this sense as a regulative principle for science?

[It's important here to get the witness to admit to methodological materialism -- this is usually not a problem; if the question of emergence/non-reductive higher-order processes is raised, pose the following question:]

I see. You think there are higher-order phenomena that cannot be accounted for in terms of any sort of reductive materialism. Would you then admit that intelligence is a higher-order process that's fundamen-

tal to nature and that can be invoked in scientific explanations? Would you be comfortable in claiming that intelligence constitutes a legitimate category of explanation within the natural sciences? If so, then how can you say that intelligent design is non-scientific? If not, then how can you deny holding to methodological materialism? [Once the admission is made that intelligence as such cannot count as a legitimate category of explanation in the natural sciences, we've got what we need and can move on.]

Could you explain the scientific status of methodological materialism? For instance, you stated that testability is a criterion for true science. Is there any scientific experiment that tests methodological materialism? Can you describe such an experiment?

Are there theoretical reasons from science for accepting methodological materialism? For instance, we know on the basis of the second law of thermodynamics that the search for perpetual motion machines cannot succeed. Are there any theoretical reasons for thinking that scientific inquiries that veer outside the strictures of methodological materialism cannot succeed? Can you think of any such reasons?

A compelling reason for holding to methodological materialism would be if it could be demonstrated conclusively that all natural phenomena invariably submit to materialistic explanations. Is there any such demonstration?

[Suppose here the success of evolutionary theory is invoked to justify methodological materialism -- i.e., so many natural phenomena have submitted successfully to materialistic explanation that it constitutes a good rule of thumb/working hypothesis. In that case we ask:]

But wouldn't you agree that there are many natural phenomena for which we haven't a clue how they can be accounted for in terms of materialistic explanation? Take the origin of life? Isn't the origin of life a wide open problem for biology, one which gives no indication of submitting to materialistic explanation.

[If they claim that it isn't an open problem, continue:]

Are you claiming that the problem of origin of life has been given a successful materialistic explanation? If so, please state the "theory of life's origin" comparable to the neo-Darwinian theory for biological evolution. Can you sketch this widely accepted theory of life's origin? How does it account for the origin of biomacromolecules in the absence of the biosynthetic machinery that runs all contemporary living cells? Furthermore, how does such a theory provide a materialistic explanation for how these biomacromolecules came together and organized themselves into a living cell in the first place?

Would you agree, then, that methodological materialism is not scientifically testable, that there is no way to confirm it scientifically, and therefore that it is not a scientific claim? Oh, you think it can be confirmed scientifically? Please explain exactly how is it confirmed scientifically? I'm sorry, but pointing to the success of materialistic explanations in science won't work here because the issue with materialistic

explanations is not their success in certain cases but with its success across the board. Is there any way to show scientifically that materialistic explanations provide a true account for all natural phenomena? Is it possible that the best materialistic explanation of a natural phenomenon is not the true explanation? If this is not possible, please explain why not. [Keep hammering away at these questions until you get a full concession that methodological naturalism is not testable and cannot be confirmed scientifically.]

Since methodological materialism is not a scientific claim, what is its force as a rule for science? Why should scientists adopt it? [The usual answer here is “the success of science.”]

But if methodological materialism’s authority as a rule for science derives from its success in guiding scientific inquiry, wouldn’t it be safe to say that it is merely a working hypothesis for science? And as a working hypothesis, aren’t scientists free to discard it when they find that it “no longer works”?

It’s sometimes claimed that the majority of scientists have adopted methodological materialism as a working hypothesis. But have all scientists adopted it? Is science governed by majority rule?

If [as the witness will by now hopefully have admitted] methodological materialism is not a scientific claim, how can it be unscientific for ID theorists to discard it as a working hypothesis for science? In the absence of methodological materialism as a regulative principle for science, what else is there that might prevent ID from being developed into a full-fledged science? You claimed earlier that ID is not testable. Is that the reason you think ID cannot be developed into a full-fledged science?

But how can you say that ID is not testable. Over and over again, Darwin in his *Origin of Species* compared the ability of his theory to explain biological data with the ability of a design hypothesis to explain those same data. Moreover, Darwin stressed in the *Origin* that “a fair result can be obtained only by fully stating and balancing the facts and arguments on both sides of each question.” How, then, can you say that ID is not testable when Darwin clearly claimed to be simultaneously testing a design hypothesis against his own theory?

Okay, you are still not convinced that ID is testable. Consider the following possibility: Darwinian biologists provide detailed testable scenarios for how the bacterial flagellum and other irreducibly complex molecular machines that Michael Behe has identified could have been produced by, as Darwin put it, “numerous successive slight modifications.” In that case, wouldn’t you agree that ID would be tested and found wanting? [Keep pressing this on this. We’re not talking about ID being definitively refuted – nothing in science ever is. What we are talking about is strong disconfirming evidence against ID. Get the Darwinist to admit that such evidence could turn up and count against ID and that this possibility shows that ID is in fact testable.]

Let’s talk about creation and creationism a bit. Is it fair to say that you think ID is a form of creationism? Why do you think that?

Does ID try to harmonize its scientific claims, like those about specified complexity and irreducible complexity, with the Bible? If so, please indicate. [If witnesses invoke some of my theological writings where I connect ID with my Christian beliefs, draw the distinction between my publications with religious publishers and my publications with academic publishers, e.g., “Yes, but is there any connection with the Bible in Dembski’s Cambridge monograph *The Design Inference?*”]

Is it fair to say that ID is not in the business of matching up its scientific claims with the Genesis record of creation or any other system of religious belief? If otherwise, please indicate.

Is it fair to say that ID is not young earth creationism, also known as scientific creationism or creation science? [The important thing with this line of questioning is to get the witness to agree that ID is not creationism in any conventional sense.]

Is it possible to hold to ID and not be a Christian, Jew, or Muslim? Is it possible to be a Buddhist and hold to ID? Is it possible to be a Hindu and hold to ID? [The answer in all these cases is yes and there are respected scientists from all these systems of religious belief who hold to ID.]

Is it possible to hold to ID for philosophical reasons that have nothing to do with any sort of conventional belief in God? In other words, can one hold to ID and not believe in God, much less a creator God? Would you agree that Aristotle, who held to an eternal universe and an inherent purposiveness within nature (i.e., not imposed on nature from the outside), did not have a conventional belief in God but would today properly be regarded as an ID advocate? Are you familiar with Antony Flew’s recent embracing of intelligent design despite his rejection of conventional belief in God (for instance, he explicitly rejects personal immortality)?

Let’s now turn to someone like Kenneth Miller, who has remarked “I’m an orthodox Catholic and an orthodox Darwinian.” [Miller made this remark on the PBS evolution series that aired September 2001.] Miller, as a Catholic believer, holds to a doctrine of creation. Is Miller a creationist? [Obviously, adjust this question if it is actually addressed to Miller. The answer to this question will be no -- unless we’re talking a Frederick Crews or Richard Dawkins style Darwinist who does not see the strategic value of trying to keep KM Darwinists within the Darwinian fold and outside the creationist fold.]

[To KM Darwinists; I’ll make off the question is directed to Miller; adjust for other KM Darwinists; pose the question hypothetically to non-KM Darwinists:] Prof. Miller, as an orthodox Catholic, is it fair to say that you subscribe to orthodox views of divine action. In particular, do you believe that God has acted miraculously in salvation history, parting the Red Sea, performing miracles in the life of Jesus, notably

his miracles of healing, transforming water into wine, and above all the Virgin Birth and Christ's Resurrection? Were these miracles plain to see? For instance, when Jesus changed the water into wine, was it evident that a miracle had taken place?

[To KM Darwinists:] So you agree that God is able to act miraculously and that God has indeed acted miraculously and discernibly in salvation history. What then prevents God from acting miraculously and discernibly in natural history? [The answer here will likely hinge on the success of Darwinian evolution.]

Okay, let me get this straight. Miller is an orthodox Catholic. He holds to a creator God who has acted miraculously in history. And yet he is not a creationist. On the other hand, there are ID proponents (like David Berlinski) who have no religious belief and who, simply in virtue of supporting ID, are, according to you, creationists. Wouldn't it be fair to say that it is simply an abuse of language to identify ID with creationism? [What the Darwinist finds totally unacceptable about ID is that it claims that material causation is an incomplete category for scientific explanation; it's this incompleteness that the Darwinist wants to label creationism. Our line of questioning must point up that this label is tendentious.]

Your main beef with ID seems to be that it claims that material causation is an incomplete category for scientific explanation. Is that true or is there any other criticism that you think is more significant? If it is true, how can you claim that ID is creationism? Creationism suggests some positive account of an intelligence creating the world. But your problem with ID seems to be in its denial that a certain category of causation can account for everything in nature?

Are you merely a methodological materialist or are you also a metaphysical/philosophical materialist? In other words, do you pretend that everything happens by material causation merely for the sake of science but then bracket that assumption in other areas of your life? Or do you really hold that everything happens by material causation -- period? If the latter, on what grounds do you hold to metaphysical materialism? Can that position be scientifically justified? How so? If you claim merely to be a methodological materialist, then whence the confidence that material causation is adequate for science? [This cycles back to some previous questions.]

What is the nature of nature? Does nature operate purely by material causation. If not, how could we know it?

Consider the following riddle (posed by Robert Pennock): If you call a tail a leg, how many legs does a dog have? Wouldn't you agree that the answer is four: calling a tail a leg doesn't make it one. Accordingly, wouldn't it be prejudicial to define nature as a closed system of material entities in which everything happens by material causation? Wouldn't you agree that nature is what nature is, and it is not the business of scientists to prescribe what nature is like in advance of actually investigating nature?

Consider the following statement: "To make methodological materialism a defining feature of science commits the premodern sin of forcing nature into a priori categories rather than allowing nature to speak for itself." Do you consider this statement right or wrong? If wrong, why?

Let's return to the issue of testability in science? Do you agree that for a proposition to be scientific it must be testable? Good.

Would you agree, further, that testability is not necessarily an all-or-none affair? In other words, would you agree that testability is concerned with confirmation and disconfirmation, and that these come in degrees, so that it makes sense to talk about the degree to which a proposition is tested? For instance, in testing whether a coin is fair, would finding that the coin landed heads twenty times in a row more strongly disconfirm the coin's fairness than finding that it landed only ten heads in a row? [Keep hammering on this until there's an admission that testing can come in degrees. Examples from the history of science can be introduced here as well.]

Okay, so we're agreed that science is about testable propositions and that testability of these propositions can come in degrees. Now, let me ask you this: Is testability symmetric? In other words, if a proposition is testable, is its negation also testable? For instance, consider the proposition "it's raining outside." The negation of that proposition is the proposition "it's not the case that it's raining outside" (typically abbreviated "it's not raining outside" -- logicians form the negation of a proposition by putting "it's not the case that ..." in front of a proposition). Given that the proposition "it's raining outside" is testable, is it also the case that the negation of that proposition is testable?

As a general rule, if a proposition is testable, isn't its negation also testable? [If you don't get a firm yes to this, continue as follows:] Can you help me to understand how a proposition can be testable, but its negation not be testable? To say that a proposition is testable is to say that it can be placed in harms way of empirical data -- that it might be wrong and that this wrongness may be confirmed through empirical data, wouldn't you agree? Testability means that the proposition can be put to a test and if it fails the test, then it loses credibility and its negation gains in credibility? Wouldn't you agree? [Keep hammering on this until you've gotten full submission.]

Doesn't it then follow that whenever a proposition is testable, so is its negation, with a test for one posing a test also for the other?

Let me therefore ask you, are the following propositions scientific and, as a consequence, testable: (1) Humans and other primates share a common ancestor. (2) All organisms on Earth share a common ancestor. (3) Life on Earth arose by material causes. Are the negations of these propositions therefore scientific and testable? If not, why not?

Let's focus on the third of these propositions. How is it tested? How would its negation be tested? If its ne-

gation is not testable, how can the original proposition be testable? Wouldn't it then simply be like arithmetic -- simply a necessary truth and not something in contact with empirical data?

Let's now turn to evolution. Back in 1989 Richard Dawkins remarked that those who don't hold to evolution are "ignorant, stupid or insane (or wicked, but I'd rather not consider that)." Is Dawkins right?

Evolutionists distinguish between common descent (also known as universal common ancestry) and the mechanisms of evolution. Common descent is a historical claim. It says that all organisms trace their lineage back to a last universal common ancestor (sometimes abbreviated LUCA). Do you hold to common descent? Why? Please be as detailed as you can in describing the scientific evidence that leads you to that belief.

Are you familiar with the work of Carl Woese and Ford Doolittle? What is their view of the origin of life? Is it monophyletic or polyphyletic (i.e., does it have a single origin or are there multiple origins)? Do you accept their conclusions? Why or why not? Would you agree that these are reputable scientists? Doesn't their work throw into question common descent? If not, why not? Do you accept that there were multiple origins of life but that the multi-cellular life that now exists traces its lineage back to a last universal common ancestor?

No doubt you have heard of the Cambrian explosion. Isn't it the case that fossil evidence suggests that many of the animal phyla first appear over a period of 5 to 10 million years in the Cambrian rocks without evident precursors?

What multicellular precursors are there to the Cambrian fauna? [Usually the Ediacaran fauna are invoked here.] Why should we think that these are ancestral to the Cambrian fauna?

Stephen Jay Gould and Simon Conway Morris have both cast doubt on whether the Ediacaran fauna are ancestral to the Cambrian fauna. Are you familiar with their arguments? Do you share their doubts? If not, why not?

Consider an octopus, a starfish, an insect, and a fish. To what phyla do these belong? Is there solid fossil evidence that these share a common ancestor? If so, please provide the details.

Do you regard the Cambrian explosion as providing a challenge to common descent? If not, why not?

I want next to turn to the mechanisms of evolution. What are the mechanisms of evolution? [Get as many out of the evolutionist as possible. Natural selection and random mutation will be at the top of the list, with genetic drift, lateral gene transfer, and developmental factors also receiving mention.] Are these all of them? [Take your time. Wait until the witness admits that these are all he/she can think of.]

So, you're not sure that these are all the mechanisms that drive the process of biological evolution. Is intelligence a mechanism? If you can't be sure that you've got all the relevant mechanisms of evolution, how

can you rule out intelligence as a factor in biological evolution?

Okay, you're convinced that the neo-Darwinian mechanism of natural selection and random genetic change is the most important factor in biological evolution. Why is that? What is the evidence that it deserves this place in evolutionary theorizing?

Are you familiar with the bacterial flagellum, a miniature bidirectional motor-driven propeller that moves certain bacteria through their watery environments? Are you familiar with the standard account told about its evolution, namely, that a microsyringe embedded in this system eventually evolved into it? Do you accept this explanation?

Would you agree that this microsyringe, known as a type three secretory system (abbreviated TTSS), is much simpler than the flagellum (requiring only about 12 different proteins whereas a full flagellum requires about 40 different proteins)? How then does pointing to the TTSS as a precursor of the flagellum explain it? How is this different from pointing to a motor of a motorcycle and saying that the motor evolved into the motorcycle? How does pointing to the TTSS give us the "numerous successive slight modifications" that Darwin described as necessary in any evolutionary pathway?

Have you read the work of Milton Saier at UCSD? Are you aware that Saier's work suggests that the TTSS evolved from the flagellum rather than into it? Wouldn't you agree that the challenge of evolution is to explain how you get complex systems from simpler ones and not vice versa? Thus, if Saier is right, wouldn't you agree that to explain the TTSS as evolving from the flagellum is only of limited evolutionary interest and that it leaves untouched the evolution of the bacterial flagellum in the first place?

Are you familiar with the writings of James Shapiro (who is on faculty at the University of Chicago) and Franklin Harold (who is an emeritus professor at Colorado State University)? Shapiro is a molecular biologist, Harold a cell biologist. They both claim that there are no detailed Darwinian accounts for the evolution of systems like the flagellum. Do you agree with their assessment? Are there any other evolutionary mechanisms that yield a detailed, testable scenario for the origin of the bacterial flagellum?

Theodosius Dobzhansky, one of the founders of the neo-Darwinian synthesis remarked toward the end of his life that nothing in biology makes sense except in the light of evolution. Do you accept this statement?

But isn't it the case that for systems like the bacterial flagellum, evolutionary biology has no clue how they came about? [If the witness balks, keep pressing for detailed evolutionary accounts of such irreducibly complex systems.] So was Dobzhansky wrong? [Be careful here. Someone like Ken Miller will want to find some particularly simple systems or aspects of systems that do in fact evolve under the Darwinian mechanism. The point is to focus on classes of complex systems that -- as whole classes -

plex systems that -- as whole classes -- have resisted conventional evolutionary explanations. The key class in these discussions comprises Michael Behe's irreducibly complex biochemical machines.]

Earlier you expressed reservations about ID being testable? Do you also share such reservations about the testability of evolutionary theory? No? Could you explain how evolutionary theory is testable? What sort of evidence would count against evolutionary theory?

The evolutionist J. B. S. Haldane once remarked that what would convince him that evolutionary theory was wrong was finding a rabbit fossil in Precambrian rocks. Would such a finding convince you that evolutionary theory is wrong? And wrong in what sense? Would it show that common descent is wrong? If such a fossil were found in Precambrian rocks, why not simply explain it as an evolutionary convergence?

Suppose we bracket the issue of common descent and accept, for the sake of argument, that all organisms trace their lineage back to a last universal common ancestor. In that case, why should we believe that natural selection and random genetic change is the principle mechanism driving biological evolution? Is that claim testable?

Darwin in his Origin of Species remarked that if it could be demonstrated that some complex structure "could not possibly" have come about "by numerous successive slight modifications" that his theory would absolutely break down. But he hastened to add that he could think of no such case. But how is restricting evolutionary paths as proceeding by "numerous successive slight modifications" any restriction at all? How could the claim that some system did not evolve by numerous successive slight modifications ever be tested? Please describe in detail how this possibility could be tested. If it cannot be tested, then how can evolutionary theory be regarded as scientific?

Do you accept that there are other mechanisms involved in biological evolution besides natural selection and random genetic change? If so, how do biologists know that the totality of these mechanisms account for all of biological complexity and diversity? Is the claim that these mechanisms account for all of biological complexity and diversity itself testable? Have you tested it? How so? How can it be tested? If it should be tested and disconfirmed (as can always happen to testable propositions), then what is the alternative hypothesis that correspondingly is confirmed? Wouldn't it have to be a design hypothesis? If not, why not?

[Note: with these questions, we don't need to get into the positive ID program -- i.e., what ID is doing specifically to advance our understanding of biology. That will come out under cross-examination of our side. It's not for the critics to lay out our positive program. Let's not give them that opportunity, since they'll be sure to botch it -- and purposely so.]

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Siehe auch [www.designinference.com](http://www.designinference.com) und

[http://www.designinference.com/documents/2005.11.Vise\\_Strategy.pdf](http://www.designinference.com/documents/2005.11.Vise_Strategy.pdf)



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B.A. in Psychology (University of Illinois at Chicago)

M.S. in Statistik (University of Illinois at Chicago)

S.M. in Mathematik (University of Chicago)

Ph.D. in Mathematik (University of Chicago)

M.A. in Philosophie (University of Illinois at Chicago)

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M.Div. in Theologie (Princeton Theological Seminary).

#### Fellowships/Awards:

Nancy Hirshberg Memorial Prize for best undergraduate research paper in psychology at the University of Illinois at Chicago, 1981.

National Science Foundation Graduate Fellowship for psychology and mathematics, 1982-1985

McCormick Fellowship (University of Chicago) for mathematics, 1984-1988

National Science Foundation Postdoctoral Fellowship for mathematics, 1988-1991

Northwestern University Postdoctoral Fellowship (Department of Philosophy) for history and philosophy of science, 1992-1993

Pascal Centre Research Fellowship for studies in science and religion, 1992-1995

Notre Dame Postdoctoral Fellowship (Department of Philosophy) for philosophy of religion, 1996-1997

Discovery Institute Fellowship for research in intelligent design, 1996-1999

Templeton Foundation Book Prize (\$100,000) for writing book on information theory, 2000-2001

#### Akademische Tätigkeiten:

Lecturer, University of Chicago, Department of Mathematics teaching undergraduate mathematics, 1987-1988

Postdoctoral Visiting Fellow, MIT, Department of Mathematics research in probability theory, 1988

Postdoctoral Visiting Fellow, University of Chicago, James Franck Institute research in chaos & probability, 1989

Research Associate, Princeton University, Department of Computer Science research in cryptography & complexity theory, 1990

Postdoctoral Fellow, Northwestern University, Department of Philosophy teaching philosophy of science + research, 1992-1993

Independent Scholar, Center for Interdisciplinary Studies, Princeton research in complexity, information, and design, 1993-1996

Postdoctoral Fellow, University of Notre Dame, Department of Philosophy teaching philosophy of religion + research, 1996-1997

Adjunct Assistant Professor, University of Dallas, Department of Philosophy teaching introduction to philosophy, 1997-1999

Fellow, Discovery Institute, Center for the Renewal of Science and Culture research in complexity, information, and design, 1996-present

Associate Research Professor, Institute for Faith and Learning, Baylor University research in intelligent design, 1999-present

#### Mitgliedschaften:

Discovery Institute-senior fellow

Wilberforce Forum-senior fellow

Foundation for Thought and Ethics-academic editor

Origins & Design-associate editor

Princeton Theological Review-editorial board

Torrey Honors Program, Biola University-advisory board

American Scientific Affiliation

Evangelical Philosophical Society

Access Research Network

International Society for Complexity, Information, and Design-executive director

Weitere akademische Aktivitäten:

Endowed Lectures "Truth in an Age of Uncertainty and Relativism." Dom. Luke Child's Lecture, Portsmouth Abbey School, 30 September 1988.  
"Science, Theology, and Intelligent Design." Staley Lectures, Central College, Iowa, 4-5 March 1998.  
"Intelligent Design: Bridging Science and Faith." Staley Lectures, Union University, Tennessee, 28 February - 1 March 2000.  
"Intelligent Design." Staley Lectures, Anderson College, Anderson, South Carolina, 15 & 16 January 2002.  
"The Design Revolution." Norton Lectures, Southern Baptist Theological Seminary, Louisville, Kentucky, 11 & 12 February 2003.  
Participant, International Institute of Human Rights in Strasbourg France, 28 June to 27 July 1990.  
Summer research in design, Cambridge University, sponsored by Pascal Centre (Ancaster, Ontario, Canada), 1 July to 4 August 1992.  
Participant, The Status of Darwinian Theory and Origin of Life Studies, Pajaro Dunes, California, 22-24 June 1993.  
Faculty in theology and science at the C. S. Lewis Summer Institute, Cosmos and Creation. Cambridge University, Queen's College, 10-23 July 1994.  
Canadian lecture tour on intelligent design (Simon Fraser University, University of Calgary, and University of Saskatchewan), sponsored by the New Scholars Society, 4-6 February 1998.  
Faculty in theology and science at the C. S. Lewis International Centennial Celebration, Loose in the Fire. Oxford and Cambridge Universities, 19 July to 1 August 1998.  
The Nature of Nature, conference at Baylor University, 12-15 April 2002, organized by WmAD and Bruce Gordon.  
Seminar Organizer, "Design, Self-Organization, and the Integrity of Creation," Calvin College Seminar in Christian Scholarship, 19 June - 28 July 2000. Follow-up conference 24-26 May 2001 (speakers included Alvin Plantinga, John Haught, and Del Ratzsch).  
Contributor, "Prospects for Post-Darwinian Science," symposium, New College, Oxford, August 2000. Other contributors included Michael Denton, Peter Saunders, Mae-Wan Ho, David Berlinski, Jonathan Wells, Stephen Meyer, and Simon Conway Morris.  
Participant, Symposium on Design Reasoning, Calvin College, 22-23 May 2001. Other participants were Stephen Meyer, Paul Nelson, Rob Koons, Del Ratzsch, Robin Collins, Tim & Lydia McGrew. Tim will edit the proceedings for an academic press.  
Presenter, on topic of detecting design, 23-27 July 2001 at Wycliffe Hall, Oxford University in the John Templeton Oxford Seminars on Science and Christianity.  
Debate with Massimo Pigliucci, "Is Intelligent Design Smart Enough?" New York Academy of Sciences, 1 November 2001.  
Debate with Michael Shermer, "Does Science Prove God?" Clemson University, 7 November 2001.  
Discussion with Stuart Kauffman, "Order for Free vs. No Free Lunch," Center for Advanced Studies, University of New Mexico, 13 November 2001.  
Program titled "Darwin under the Microscope," PBS television interview for Uncommon Knowledge with Peter Robinson facing Eugenie Scott and Robert Russell, 7 December 2001  
Canadian lecture tour on intelligent design (University of Guelph, University of Toronto, and McMaster University), sponsored by the Canadian Scientific and Christian Affiliation, 6-8 March 2002.  
Debate titled "God or Luck: Creationism vs. Evolution," with Steven Darwin, professor of botany, Tulane University, New Orleans, 7 October 2002.

Veröffentlichungen:

Bücher:

The Design Inference: Eliminating Chance through Small Probabilities. Cambridge: Cambridge University Press, 1998.  
Intelligent Design: The Bridge between Science and Theology. Downer's Grove, Ill.: InterVarsity Press, 1999. [Award: Christianity Today's Book of the Year in the category "Christianity and Culture."]  
No Free Lunch: Why Specified Complexity Cannot Be Purchased without Intelligence. Lanham, Md.: Rowman & Littlefield, 2002.  
Edited Collections:  
Mere Creation: Science, Faith, and Intelligent Design (proceedings of a conference on design and origins at Biola University, 14 - 17 November 1996). Downer's Grove, Ill.: InterVarsity Press, 1998.

Science and Evidence for Design in the Universe, Proceedings of the Wethersfield Institute, vol. 9 (co-edited with Michael J. Behe and Stephen C. Meyer). San Francisco: Ignatius Press, 2000.

Unapologetic Apologetics: Meeting the Challenges of Theological Studies (co-edited with Jay Wesley Richards; selected papers from the Apologetics Seminar at Princeton Theological Seminary, 1995-1997). Downer's Grove, Ill.: InterVarsity Press, 2001.

Signs of Intelligence: Understanding Intelligent Design (co-edited with James Kushiner). Grand Rapids, Mich.: Brazos Press, 2001.

Artikel:

"Uniform Probability." *Journal of Theoretical Probability* 3(4), 1990: 611-626.  
"Scientopoly: The Game of Scientism." *Epiphany Journal* 10(1&2), 1990: 110-120.  
"Converting Matter into Mind: Alchemy and the Philosopher's Stone in Cognitive Science." *Perspectives on Science and Christian Faith* 42(4), 1990: 202-226. Abridged version in *Epiphany Journal* 11(4), 1991: 50-76. My response to subsequent critical comment: "Conflating Matter and Mind" in *Perspectives on Science and Christian Faith* 43(2), 1991: 107-111.  
"Inconvenient Facts: Miracles and the Skeptical Inquirer." *Philosophia Christi* (formerly *Bulletin of the Evangelical Philosophical Society*) 13, 1990: 18-45.  
"Randomness by Design." *Nous* 25(1), 1991: 75-106.  
"Reviving the Argument from Design: Detecting Design through Small Probabilities." *Proceedings of the 8th Biannual Conference of the Association of Christians in the Mathematical Sciences* (at Wheaton College), 29 May - 1 June 1991: 101-145.  
"The Incompleteness of Scientific Naturalism." In *Darwinism: Science or Philosophy?* edited by Jon Buell and Virginia Hearn (Proceedings of the Darwinism Symposium held at Southern Methodist University, 26-28 March 1992), pp. 79-94. Dallas: Foundation for Thought and Ethics, 1994.  
"On the Very Possibility of Intelligent Design." In *The Creation Hypothesis*, edited by J. P. Moreland, pp. 113-138. Downer's Grove: InterVarsity Press, 1994.  
"What Every Theologian Should Know about Creation, Evolution, and Design." *Princeton Theological Review* 2(3), 1995: 15-21.  
"Transcendent Causes and Computational Miracles." In *Interpreting God's Action in the World (Facets of Faith and Science, volume 4)*, edited by J. M. van der Meer. Lanham: The Pascal Centre for Advanced Studies in Faith and Science/ University Press of America, 1996.  
"The Problem of Error in Scripture." *Princeton Theological Review* 3(1)(double issue), 1996: 22-28.  
"Teaching Intelligent Design as Religion or Science?" *Princeton Theological Review* 3(2), 1996: 14-18.  
"Schleiermacher's Metaphysical Critique of Miracles." *Scottish Journal of Theology* 49(4), 1996: 443-465.  
"Christology and Human Development." *FOUNDATIONS* 5(1), 1997: 11-18.  
"Intelligent Design as a Theory of Information" (revision of 1997 NTSE conference paper). *Perspectives on Science and Christian Faith* 49(3), 1997: 180-190.  
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"Mere Creation." In *Mere Creation: Science, Faith, and Intelligent Design*.  
"Redesigning Science." In *Mere Creation: Science, Faith, and Intelligent Design*. "Science and Design." *First Things* no. 86, October 1998: 21-27.  
"Reinstating Design within Science." *Rhetoric and Public Affairs* 1(4), 1998: 503-518.  
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"Are We Spiritual Machines?" *First Things* no. 96, October 1999: 25-31.  
"Not Even False? Reassessing the Demise of British Natural Theology." *Philosophia Christi* 2nd series, 1(1), 1999: 17-43.  
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"Conservatives, Darwin & Design: An Exchange" (co-authored with Larry Arnhart and Michael J. Behe). *First Things* no. 107 (November 2000): 23-31.  
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"Can Evolutionary Algorithms Generate Specified Complexity?" *In From Complexity to Life*, edited by Niels H. Gregersen, foreword by Paul Davies (Oxford: Oxford University Press, 2002).

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#### Short Contributions:

"Reverse Diffusion-Limited Aggregation." *Journal of Statistical Computation and Simulation* 37(3&4), 1990: 231-234.

"The Fallacy of Contextualism." *Themelios* 20(3), 1995: 8-11.

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"Alchemy, NK Boolean Style" (review of Stuart Kauffman's *At Home in the Universe*). *Origins & Design* 17(2), 1996: 30-32.

"Intelligent Design: The New Kid on the Block." *The Banner* 133(6), 16 March 1998: 14-16.

"The Intelligent Design Movement." *Cosmic Pursuit* 1(2), 1998: 22-26.

"The Bible by Numbers" (review of Jeffrey Satinover's *Cracking the Bible Code*). *First Things*, August/September 1998 (no. 85): 61-64.

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"Thinkable and Unthinkable" (review of Paul Davies's *The Fifth Miracle*). *Books & Culture*, September/October 1999: 33-35.

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"Intelligent Design Theory." *In Religion in Geschichte und Gegenwart*, 4th edition, edited by Hans Dieter Betz, Don S. Browning, Bernd Janowski, Eberhard Jüngel. Tübingen: Mohr Siebeck.

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"The Design Argument," in *Science and Religion: A Historical Introduction*, edited by Gary B. Ferngren (Baltimore: Johns Hopkins Press, 2002), 335-344.

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"Detecting Design in the Natural Sciences," to appear in Russian translation in *Poisk*. Expanded version of *Natural History* article.

#### Work in Progress:

*Debating Design: From Darwin to DNA*, co-edited with Michael Ruse; an edited collection representing Darwinian, self-organizational, theistic evolutionist, and design-theoretic perspectives; book under contract with Cambridge University Press.

*The Design Revolution: Making a New Science and Worldview*, cultural and public policy implications of intelligent design; book under contract with InterVarsity Press.

*Freeing Inquiry from Ideology: A Michael Polanyi Reader*, co-edited with Bruce Gordon; an anthology of Michael Polanyi's writings; book under contract with InterVarsity Press.

*Uncommon Dissent: Intellectuals Who Find Darwinism Unconvincing*, edited collection of essays by intellectuals who doubt Darwinism on scientific and rational grounds; book under contract with Intercollegiate Studies Institute.

*The End of Christianity*, coauthored with James Parker III, book under contract with Broadman & Holman.

*Of Pandas and People: The Intelligent Design of Biological Systems*, academic editor for third updated edition, coauthored with Michael Behe, Percival Davis, Dean Kenyon, and Jonathan Wells.

*Being as Communion: The Metaphysics of Information*, Templeton Book Prize project, proposal submitted to Ashgate publishers for series in science and religion.

*The Patristic Understanding of Creation*, co-edited with Brian Frederick; anthology of writings from the Church Fathers on creation and design.