Evolution/Creation Debate: A Rhetorical Analysis

James V. Miteff

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EVOLUTION/CREATION DEBATE:

A Rhetorical Analysis

(TITLE)

BY

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THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

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ABSTRACT

During the course of human history, many social issues have come and gone. One argument that caught the writer's eye is the argument about how man came to exist.

Purpose of Study

The purpose of this study is to analyze an evolution/creation debate that took place at Columbus College, Georgia, on May 6, 1981. Evolutionary theory was supported by Dr. Schwinner, a paleontologist from Columbus College. His partner was Dr. Frazier, a professor of geology at Columbus College. Creation theory was supported by Dr. Henry Morris, President of the Institute for Creation Research, San Diego, and Dr. Slusher, an astronomer and geophysicist from the University of Texas, El Paso.

Hypothesis

The working hypothesis is that an analysis of the language, arguments, and philosophical frameworks employed during a debate between scientists would yield a responsible perspective on theories of origin.

Materials

A transcript was made from a cassette tape of the evolution/creation debate that took place at Columbus College. This debate was chosen because of its comprehensive coverage of arguments supporting evolution and creation. The debate was complete and uncut without editing.
Methodology


This methodology provides for three basic identifications: emotive language, modes of argument, and philosophical frameworks. Each is described in the paper.

This methodology is applied to each debater.

Conclusion

The hypothesis was supported. The analysis revealed that the debaters marshaled their language and arguments to responsibly and clearly defend their respective philosophical frameworks.

Because the writer cannot claim that all possible arguments about the evolution/creation issue were employed in the one debate studied, the following suggestions for further study using the same methodology are offered:

1. A study of the same debaters in different settings.
2. A study of other evolution/creation debates by other responsible debaters.
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CHAPTER I

INTRODUCTION

During the course of human history a myriad of social issues have come and gone. In my brief lifetime alone, I have witnessed the rise of such issues as the Vietnam War, abortion, the war on drugs, and others.

One argument, however, which caught this writer's attention is the argument about how man came to exist. Although theories of the origin of humankind have been debated since the dawn of recorded history, the debate has been of particular interest in the United States of America as shown by conflicting court cases and public debates.

The specifics that follow indicate the historical continuum of the debate about origins. In 1926, John T. Scopes was convicted and fined for teaching the theory of evolution in Dayton, Tennessee. In 1976 (Ohio v. Wisner) the state court brought criminal charges against parents who put their children in a Christian school because the public school was teaching evolution and secular humanism. The Ohio Supreme Court ruled in favor of the parents and verified that secular humanism is a religion. In 1982 (McLean v. Arkansas) the Arkansas Supreme Court disallowed all views in science classes except those compatible with
purely naturalistic religions. Theories of evolution were retained. Creation theory was disallowed.

Clearly, the debate over origins is not settled. On the one hand, there is the evolutionist's camp, and on the other there is the creationist's camp. The evolutionists have won the educational victory, but the ideological victory must still be won. The debates between these two factions will no doubt continue for years to come. Mulfinger (1970, p.39) claims making plausible guesses as to the origin of the universe is evidently a challenging pastime.

To many, however, the debate is more than idle chatter. For the past fifteen years some very responsible debates about origins have taken place on college campuses in the United States. For example, creation scientists from the Institute for Creation Research have met evolution scientists before many college audiences. (A list is provided of these debates on page 5.)

PURPOSE OF THE STUDY

The purpose of this study is to analyze a creation v. evolution debate that took place at Columbus College Georgia, on May 6, 1981. Evolutionary theory was supported by Dr. Schwinner, a paleontologist from Columbus College. His partner, Dr. Frazier, is a professor of
geology at Columbus College. Creation theory was supported by Dr. Henry Morris, president of the Institute for Creation Research, San Diego, and Dr. Slusher, an astronomer and geophysicist from the University of Texas, El Paso. The working hypothesis is that an analysis of the language, arguments, and philosophical frameworks employed during a debate between scientists would yield a responsible perspective on theories of origin.

SIGNIFICANCE OF THE STUDY

The significance of this study is threefold: rhetorical, social, and personal.

First the study is of value to those having an interest in rhetoric and public address. Weaver (1970, p. 105) insists that a large part of the world’s oral and written expression takes the form of argumentation. Examining the speeches of each participant in a debate provides rhetorical insights.

This study deals with a controversial issue that is current and of great interest in our society. Faced with opposing theories about origins, it seems most unscientific to withhold consideration of one of the theories if it does not fit one’s personal ideas of how something happened (Heinze, 1980, p. 11). This study gives society a balanced view.
Finally, this study is of personal value. It is a learning experience for the author. Thompson (1947, p. 227) notes:

The preparation of the thesis can be a rich educational experience which provides training in research methods; requires the integration of the knowledge and the skills of several fields...makes the student an expert within a defined area; and leads to conclusions regarding the theory and practice of rhetoric in our own time.

Hockett (1955, p. 12) also advocates the personal value of a thesis. He claims:

...a master's essay may make a real even if minor contribution to historical knowledge and thus become a source of justifiable pride on the part of the author. More important...is the discipline which should result from the use of the critical methods.

REVIEW OF LITERATURE

A review of literature revealed that this is an original topic for a rhetorical analysis.

The Index to Journals in Communication Studies Through 1985, was consulted to determine if there were any relevant studies concerning theories of creation and evolution.

Several books did aid in providing general background information. What is Creation Science? (Morris & Parker, 1984). Creation vs. Evolution Handbook, (Heinz, 1980) was also helpful.
The other creation-evolution debates, available on tape and listed below, also aided my review. The creation debaters are listed first:


A recent NOVA television program, "God, Darwin, and the Dinosaurs," aired on WILL, channel 12 Champaign, February 25, 1989, discussed the creation-evolution issue. The program did not provide a balance of opinion and was slanted to favor evolution.

MATERIALS

A transcript was made from a cassette tape of the creation-evolution debate that took place at Columbus College Georgia, on the night of May 6, 1981. The transcript was then used for the rhetorical analysis.

This debate was chosen because of its comprehensive coverage of the arguments supporting both creation and evolution. The debate is complete and uncut without any editorializing.
METHOD

This paper applies a methodology created by B. F. McClerren and demonstrated in one of his rhetorical analyses. (See: "The Rhetoric of Abortion: An Analysis," unpublished paper, Eastern Illinois University, 1989). McClerren's method is a synthesis of his professional experiences in teaching rhetorical criticism and public address on the college level for thirty years. Moreover, he is indebted to the late Richard Weaver, professor of English at the University of Chicago, for many ideas.

This method provides criteria for three basic identifications: emotive language, modes of argument, and philosophical frameworks. Each of these is explained as follows.

EMOTIVE LANGUAGE

All rhetoric carries persuasive force with overt and concealed "should" and "ought" propositions (McClerren, 1989, p. 1). Weaver (1976, p. 221) instructs:

The condition essential to see is that every speech, oral and written, exhibits an attitude, and an attitude implies an act... Your speech reveals your disposition first by what you choose to say, then by the amount you decide to say, and so on down through the resources of linguistic elaboration and intonation. All rhetoric is a rhetoric of motives, as Kenneth
Evolution/Creation

Burke saw fit to indicate in the title of his book.

McClerren (1989, p. 1) continues that Weaver's "Ultimate Terms in Contemporary Rhetoric" invites us to identify significant words and phrases and to classify them as "god terms" or "devil terms." Some of the primary "god terms" of our society are "progress," "American," and "science." Some powerful "devil terms" are "unAmerican," and "prejudice." These terms address our society as a whole. The analysis of the evolution v. creation debate will reveal "god" and "devil" terms pertaining to the controversy of origins.

MODES OF ARGUMENT

Weaver (1967, p. 105) states argumentation aims to convince and persuade. In other words, argumentation seeks to make people accept a judgement and, sometimes, to act upon it. Clark (1979, p. 81) insisted that one of Richard Weaver's most important contributions to rhetorical theory is the concept of a hierarchical ethical worth of arguments. This hierarchy consists of definition, similitude, cause and effect, and testimony.

The following modes of argument will be identified as they appear in the debates.
Definition

Definition is the highest form of argument because it is based on the nature of a thing and helps people "see what is most permanent in existence or what transcends the world of change and accident" (Weaver, 1976, p. 212). Foss, Foss, and Trapp (1985, p. 60) offer this example; the speaker who wishes to argue that women deserve equal rights with men first would have to establish that all human beings deserve certain rights.

Similitude

This mode of argument embraces: analogy, metaphor, figuration, comparison, and contrast. McClerren (1989, p. 3) states that similitude, and its related forms, is favored by those with a creative sort of mind and may tactfully lead to generalizations.

Cause and Effect

Arguments from cause and effect assume something is the known cause of a certain effect. These arguments function in the realm of becoming instead of being and this mode is favored by pragmatists (McClerran, 1989, p. 4).

Argument from circumstance is a subvariety of cause-effect. No ramification is given for the argument. One just surrenders to the situation at hand. Reason is powerless.
Weaver (1967, p. 214) reports that it is not unusual to find a lengthy piece of journalism or an entire political speech which is nothing but a series of arguments from circumstance -- completely devoid of reference to principle or defined ideas.

Testimony

McClerren (1989, p. 5) admits that testimony or argument based on authority are only as good as the authority quoted. Weaver (1977, p. 87) warns that we may be misled when we are not sufficiently critical of the authority being used.

Weaver (1977, p. 87) concludes his discussion of the modes of argument with an indication of their value as a critical tool:

Follow the utterances of some public figure, past or present, in whom you have a strong interest and know what he seems to prefer as the bases of his appeal... Which mode does he employ most frequently? You will find that this examination will be both instructive and entertaining, and it may give you an understanding of the figure.

Overall, an analysis of all the modes of argument provides an index to the character and intentions of the rhetorician (McClerren, 1989, p. 5).
PHILOSOPHICAL FRAMEWORKS

McClerren (1989, p. 5) contends that the rhetoric produced by any social issue reveals philosophical starting points. Two philosophical—religious frameworks that take different positions on the evolution v. creation controversy are Secular Humanism and Christianity.

According to McClerren (1989, p. 6) three basic similarities exist between Secular Humanism and Christianity.

First, it should be understood that Secular Humanism, like Christianity, is a religion. In 1961 the U.S. Court (Torasco v. Watkins, 367 U.S. 488) recognized Secular Humanism as a religion. Secondly, each has a guidebook. Christians follow the Bible; Secular Humanists follow the Humanist Manifesto. Finally, each religion asks similar questions about existence. Different answers are given.

What is the source of existence? Christianity answers that we were created in the image of God with a reason for being. The universe was also created by God. Secular Humanists answer that we are products of time and chance. The universe is self existent.

Philosophical frameworks will be identified and analyzed as they appear in the debate.
PROCEDURE

In order to analyze the debate between the creationists and evolutionists on May 6, 1981, it was first necessary to listen to the tapes and then read the transcript of the debate. As this was done, special attention was focused on the debaters' emotive language, modes of argument, and philosophical frameworks.

The methodology, which was just presented, will be applied categorically to each speech given during the debate from the constructive speeches through the rebuttals.

ORGANIZATION OF STUDY

This paper is divided into three independent chapters. Chapter I provides an introduction and purpose for the study. Also, it reveals the significance of the study, reviews the literature, and mentions the materials that benefitted the author. Lastly, it provides the method and procedure for the analysis of the debate.

Chapter II presents analysis of the debate.

Chapter III presents a summary, conclusions, and suggestions for further study.
The appendix includes the transcript of the debate which took place at Columbus College Georgia, May 6, 1981.
CHAPTER II ANALYSIS
FIRST AFFIRMATIVE CONSTRUCTIVE
SCHWINNER

EMOTIVE LANGUAGE

Dr. Schwinner begins his speech by attempting to create goodwill between himself and the audience. He claims the evolutionists are not there to speak against religion or faith. The evolutionists are debating only to prove their model, and disprove scientific creationism.

The next instance of emotive language occurs when Dr. Schwinner relates that evolutionists believe that scientific creationism should not be taken seriously as a science. Furthermore, evolutionists consider the "process" of creationism as a bit of a threat to organized science.

Next, Schwinner states that scientific creationism enjoys the appeal to "pity" as a defense for creationism. In fact, Schwinner claims that is a popular tack in their logic. "You say everyone is against me so I must be right." Here, pity is an emotive term.

The last instance of emotive language is uncovered when Schwinner claims the logical flaws of creationist arguments cause the evolutionists to go "spluttery."
Schwinner interjects, "We don't even know where to begin. It's, it's so horrifying."

MODES OF ARGUMENT

Definition

The first argument to be analyzed is Schwinner's use of definition. Schwinner defines what evolution is not. Evolution is not against religion or God. They do not preach atheism and are not trying to test anyone's faith. Schwinner also says Dr. Morris defines evolution as godless and atheistic.

His next use of definition is a dictionary definition. Schwinner uses the Oxford English Dictionary to define a theory. It says theory, scientific definition, "a statement of what are held to be the general laws, principles, or causes of something known or observed." Not the idea; not a hairbrained idea; laws and principles. That is the scientific definition of a theory. Creationists use the popular definition of theory, "a hypothesis proposed as an explanation." A definite difference of terms, a clash of definitions.

Schwinner relies on common sense to define evolution as a law. "Evolution is right now in the scientific sense a perfectly valid theory. It can never be said to be just a theory. In the common sense, evolution is a law."
In this argument, a problem of popular notion versus full technical notion of definition is uncovered. The argument concerns transition fossils. Schwinner states,

If you were to ask me is there such a thing as a transition fossil or the perception of a nonspecialist, somebody who does not know every nuance of bone in an animal, I would say certainly, there are dozens. If you want to be as purely technical as you can and say every single thing is in perfect place, then I would probably be honest and say no.

The last reference to definition also concerns transition fossils by Schwinner. It takes place when Schwinner attacks Dr. Duyane Gish's definition of a "kind." Schwinner feels this definition is not adequate. "So Dr. Gish's kinds are the reason he can say there are no transition fossils because he will just put them, if it is too much a transition, he will put it in one kind or another and bingo." (No transition)

Similitude

Our first example of this argument occurs when Schwinner compares creationist rhetoric with communist rhetoric. Schwinner concludes, in fact as a curious exercise, you may take some creationist literature and put in the words "glorious socialist revolution" in place of "church and God," and you will discover you have excellent communist rhetoric.
The second example is a comparison between things theoretical. Schwinner explains that things theoretical do not always follow laws. Also, some things theoretical are also quite real. Schwinner continues, atomic energy is theoretical, so in all of medicine, and they do not always follow laws. As is the same with the theory of evolution.

Moving on, Schwinner debunks an analogy used by creationists. They compare fossils with rocks which is a method used forty years ago. Schwinner states it would be like him attacking bloodletting in medicine.

Lastly, Schwinner compares creationist logic with a comic strip, Winnie the Pooh. In the comic strip, we find Piglet asking Pooh, "What are we hunting for," and Pooh replies, "Hefalumps." Piglet asks, "How do we really know there are such things as hefalumps because we have never seen them." And Pooh uses the best creationist logic and says, "We have never seen a woozul either." Piglet says, "So," and Pooh concludes, "Well, that proves there are no hefalumps because woozuls lay low when hefalumps are around."

**Cause and Effect**

Schwinner begins his argument about the dating of fossils and rocks through cause and effect. He claims that since the creationists do not believe the circular
reasoning in dating rocks by fossils, and fossils by the
same rocks that dated the fossils, this circular reasoning
caused evolutionists to come up with a technique called
absolute dating.

Next, Schwiner denies the cause-effect relationship
used by Dr. Gish concerning the archaeopteryx. Gish
claims since the fossil has feathers, it should be a bird.
Schwiner asserts that just because it had feathers,
archaeopteryx was not necessarily a bird. Schwiner
supports this assumption with evidence to support that
archaeopteryx, in fact, was a transition between dinosaur
and bird.

Finally, Schwiner claims the creationists use
negative cause-effect relationships to prove creation.

Schwiner says creationists approve their model by
disproving evolution, the only problem with that is that
it still does not prove creation. Also, he states that
pointing to the complexity of a tree or uniqueness of life
does not produce that there was a special creation for
that form for each individual episode. False cause-
effect arguments by the creationists.

**Testimony**

Our first argument from testimony is negative.

Schwiner claims that Dr. Gish has no proof to support his
statement that most scientists are "unbelievers and
unbelieving materialistic men." Schwinner continues stating that Gish's information is his own opinion without any foundation. Schwinner then falls into his own trap when he states most clergy believe in creation without attribution to the source of his information.

Schwinner shifts his attention to another problem with the creationist testimony. Schwinner remarks that Dr. Morris says things do not exist, when in fact they have already been proven. The problem of fossil gaps is addressed here. Dr. Morris states, "One of the most important fossil gaps is that between the questionable one celled organism found in precambrian, and the abundant complex marine vertebrate life of the cambrian."

Schwinner produces slides of multicellular organisms that were identified and unquestionably accepted by modern paleontologists as being multicellular life since 1960.

Another case concerns the fact that Dr. Morris does not publicly refute evolutionist claims in professionally published literature. Therefore, "his word is just his word to you and he has not defend it to his scientific colleagues."

PHILOSOPHICAL FRAMEWORK

Schwinner's framework is science and logic...a humanistic framework. He does not eliminate the
possibility of an ultimate creation, but does not believe that every single thing was created. Schwinner states, "We're not saying there wasn't an original creator...What we're saying is that we do not believe that every single separate group had a creator."

SECOND AFFIRMATIVE CONSTRUCTIVE

FRAZIER

EMOTIVE LANGUAGE

Dr. Frazier begins his speech by smoothing over the crowd with social amenities. He thanks everyone for their attendance and thanks the people who set up the debate. He uses this to put the audience at ease and open their minds for his arguments. A nice technique to show you're not an overbearing propagandist to the audience members who favor creationism.

Frazier's next use of emotive language shows up in his conclusion. He states,

Creationists have a rather grand disregard for the principles of science; they misuse them; they are selective in their use of them; they use some when they want to and they throw the same principle away when they want to; they are rather cavalier in the way they quote authors...In other words, they are really presenting what is quite frankly a very deceptive case to make it sound scientific when it is not.
MODES OF ARGUMENT

Definition

Frazier enjoys the use of definition as a form of argument. He begins by defining uniformitarianism. "It simply means that modern day laws of science, presently observable processes, and events are assumed to have worked in the same way, in the geologic past."

Secondly, Frazier uses a definition from James Hutton to define uniformitarianism. Frazier relates Hutton's belief that "the earth is always been pretty much exactly the way it is today with very, very few changes... the earth is created in essentially a uniform manner based upon the principles, events, and processes that one sees today." Frazier claims Hutton went too far, however. "He probably carried it too far because he even said that the rates of geologic processes have always been constant. In fact he believed that there has been no change in the earth whatsoever." Frazier continues, "Modern geologists, of course, have had the benefit of 200 years of studies since Hutton's time. We know, for example, that there are probably periods in the earth's past when probably rates of geologic processes were not exactly the same as they are now." This statement then allows catastrophies into uniformitarianism processes.
Frazier next defines radiometric dating. Frazier claims, "Radiometric dating is based on the very sound and firm principle that radioactive elements decay or break down into different elements with time. The rate at which that process takes place is a known and constant geometric rate." This dating process is used to date the age of the earth.

Another way to estimate the age of the earth, according to Frazier, is the geologic column. Frazier defines the geologic column as a graphic representation of the various layers of rocks in the geologic record.

His last argument from definition concerns the different definitions that the evolutionists and creationists use for thermodynamics. Frazier states, "Basically the creationists say that the second law of thermodynamic principles, but they do not mention the other two." This is true in a closed system states Frazier, however, the earth is an open system. Frazier concludes, "...the biologic community on earth is an open system and receives energy constantly from the sun. Open and closed systems differ, this definition shows the difference in definition of the creationists and evolutionists."
Similitude

Only a couple of instances of similitude were exposed in Frazier’s rhetoric. Frazier’s first use of similitude is evident when he compares water flowing downhill today, and in the past to thermodynamics. "For example," states Frazier, "if you can observe water flowing downhill today, you may assume that water flowed downhill in the geologic past." Now the comparison, "If you, for example, can observe the workings for example of the principles of thermodynamics today, then you may be assured that the principles of thermodynamics have worked in pretty much the same way in the geologic past."

Frazier’s only other attempt at comparison is displayed when he compares a group of rock formations on slides. Frazier refers to a "...cross bedding in some coastal plain sedimentary rocks that are of crustacean age," which is the last of the three periods of great dinosaurs. It is almost exactly the same as the kinds of cross bedding features you saw previously.

Cause and Effect

Our first glimpse of Frazier’s use of cause and effect concerns the topic of uniformitarianism. Frazier comments, "Well, what do the creationists say about uniformitarianism? To start off with, they do not accept it...basically they reject the principle of
uniformitarianism for the very simple reason that if uniformitarianism is accurate, then the earth must be very old..." Of course, the creationists estimate the earth's age to be about 10,000 years old. A clear cause and effect argument by the creationists, revealed by Frazier.

The second argument concerns the geologic columns. Frazier claims that the creationists accuse the evolutionists of a faulty cause and effect relationship.

Dr. Gish says that the geologic column is arranged according to the assumption of evolution and that the rocks with the simplest fossils are put low in the columns...most complex in the top part...and bingo. The evolutionists approved evolution because they arranged the rock layers to suit their needs. Well, this is hogwash.

The next argument concerns the age of the earth. Frazier reports, "They say the earth is 10,000 years old. It's based basically upon scriptural analysis...we will talk about their scientific support for that. Well, there isn't any scientific support for it." The support that is provided by the creationists is discredited by Frazier.

Dr. Morris has made the case that if you assume that the known rate of decay is constant back in geologic time, if you go back more than 10,000 years ago, the strength of the magnetic field is so great that everything would be crushed, which of course is ridiculous, so therefore the earth must be young.

Frazier identifies one last faulty cause and effect argument by the creationists. For the creationists
argument above to even be considered, you must accept uniformitarianism. Frazier says,

You see, they assume what? They assume that the rate of decay of the magnetic field is constant through time. That's uniformitarianism folks. These guys don't believe in it, but they assume it...directly after telling you that uniformitarianism doesn't work, directly apply it to their theories.

Testimony

Other than the testimony used from Hutton as a definition earlier in this section, Frazier only has one other example. Frazier asserts that Dr. Morris misquoted Steven Gould concerning uniformitarianism. Frazier, however, does not present evidence to support his allegation.

PHILOSOPHICAL FRAMEWORK

Frazier takes evolution as his framework. He feels that science is the only way to describe the origin of man. He claims creationists attempt to be deceitful in conveying their theory of the origin of life. Creationists, states Frazier, "...are really presenting, what is quite frankly, a very deceptive case to make it sound scientific when it is not."
EMOTIVE LANGUAGE

Morris first uses social amenities to show gratitude for the audience and his opponents. Morris said, "Well, thank you. We certainly appreciate the opportunity of being here at Columbus College for this occasion and I want to express our thanks to Dr. Schwinner and Dr. Frazier for willing to participate with us..."

Discussing the evolutionary change in species, Morris injects some humor when he says: "If evolution has really taken place in the past, if we really have gone from one-celled organisms to human beings or from particles to people...Dr. Gish likes to say from fish to Gish."

MODES OF ARGUMENT

Definition

Morris begins by defining his position. According to Morris,

"We are not so much concerned of course to win a "debate" as to win a hearing because for whatever reason the creation model as we call it has been in effect banned...we think at least everyone deserves to hear the other side.

Next, Morris defines terms. He defines evolution first, "...basically the idea of evolution that we can..."
explain the origin and development of all things including the most complex systems that we have in this complex universe today by natural processes in a self contained universe."

Creation, on the other hand, is the opposite. Creation model postulates that the complex structure of the universe cannot be explained in terms of natural processes that are still going on today, and therefore not observable today. Therefore a Creator in postulated transient to the universe...

Morris also claims evolution calls for increasing complexity, while creation expects change downward to disorder.

Morris defines similarities between evolution and creation: "Both are concepts which believers know to be true; neither up to the present is capable of proof...evolution is a faith, it's a dogma, so is creation."

His next definition pertains to science. Morris states, "Science is what you see. Science means knowledge..."

Morris also addresses the second law of thermodynamics. He offers this definition. "Generally order tends to go to disorder, available energy tends to become unavailable, information principle to which no exception has ever been found."
Morris then delves into the open and closed system argument referred to by Frazier. According to Morris,

...in the real world there is no such thing as a closed system. A closed system is a circle you draw on a blackboard, but it doesn't exist in the real world. Every system is an open system, including the earth system...

Also Morris states that in open and closed systems order tends to go to disorder following the second law of thermodynamics. Morris states, "...if a flow of heat from an external source (sun) into the open system...it goes into disorder more rapidly than it would be if it were a closed system."

Once again, Morris defines evolution, or rather, evolution based on the concept of punctuated equilibrium. "Evolution takes place sort of in quantum jumps, by this, and they are forced to that because of these universal gaps in the fossil record."

Morris rounds out his definitions with a final gasp at a definition of evolution. Morris states,

I don't mean to be facetious, but this does seem like what it is. You can't see evolution take place in the present world because evolution goes too slowly for you to see. You can't see it in the record of the past world because evolution went to fast for you to see.

Similitude

Morris begins his use of similitude by comparing the
fact that neither evolution or creation is accessible to the scientific method. Morris reveals,

There is no way to determine whether evolution is true or false, because no matter what you see, you can explain it by evolution. Now the same thing is exactly true of creation...neither is really accessible to scientific method for confirmation or falsification.

Morris’ next comparison is between increase of order and growth of a tree. "In an open system if the conditions necessary are present, you can have an increase of order. A good example would be a seed growing into a tree with lots of seeds in it..."

The final example of Morris’ use of comparison is discovered where he compares the ability of each model to deal with the second law of thermodynamics. Morris claims, "Maybe someday...the evolutionary model will be able to accommodate the second law of thermodynamics in it’s system. Even though, it won’t be as good as the creation model." Creation model doesn’t have to explain or accommodate the second law; the creation model predicts the second law.

**Cause and Effect**

Morris uses a cause and effect argument to discredit evolution initially.

Do we see things evolving into higher forms as we should if evolution is true? Can we see dogs evolving into horses, say? Or frogs into princes? Or anything like that? Can we see one
type of organism developing into a higher kind? If we could, of course, the creationists would immediately sit down and be quiet...we couldn't argue.

Morris utilizes another argument from cause and effect when he discusses the relationship between the Laws of Thermodynamics and order to disorder.

Creation model does predict not only the second law of thermodynamics but the first law of thermodynamics...the kinds are conserved therefore they can adapt to different environments without becoming extinct within limits, but the order tends to go, that is if there was any vertical changes, tends to go to disorder.

Morris moves to the question of a conversion mechanism the evolutionists are lacking. This is a simple cause/effect relationships, no mechanism, no evolution.

...a program to direct that growth in some kind of a marvelous conversion mechanism to energize that growth getting the energy from the sun and converting it and then besides that, the sun's got to get its information somewhere too, or else you won't get any growth, and so far the evolutionist does not have the answer to this question.

Morris claims for evolution to be true, there must be transition fossils between "kinds." Morris continues, "Lots of fossils have been found. Lots of fossils of one kind have been found, but no intermediate forms between basic kinds." No transition fossils, no cause/effect, no evolution. Morris finishes, "...no transition between the vertebrates and invertebrates has been found."
Morris employs cause/effect one last time, when considering ancestors of man. "Now back when I was in school...I was told there were three proofs that humans evolved." Piltdown man, Java man, and Peking man were these proofs. "Now all of those three are more or less not in favor anymore." According to Morris, if you have no ancestors, you have no evolution occurring.

Testimony

Testimony is used extensively by Morris. The first case is when Morris uses Dr. Paul Erlich's testimony, an evolutionist, against the evolutionists. "Our theory of evolution has become one which cannot be refuted by any possible observations. Every conceivable observation can be fitted into it." Morris claims that this makes for a bad theory. Erlich proceeds, "...evolution is thus outside of empirical science though not necessarily false..."

Testimony is again used by Morris to descredit evolution. Dr. Cora Pauper says Darwinism is a metaphysical research program. Dr. Matthews, a prominent biologist concurs, "belief in the theory of evolution is thus exactly parallel to belief in special creation."

Morris uses testimony further, again by a non-creationist, Dr. Harold Blum. Blum, a Princeton biochemist describes the Second Law of Thermodynamics. He
says, "it's one of its consequences that all processes go irreversibly. Any given process in this universe is accompanied by change in magnitude of a quantity called entropy."

Morris continues to discount evolution by using the testimony of evolutionists against themselves. Dr. David Kitch, a professor of geology at the University of Oklahoma, states, "Evolution in the sense that Darwin speaks of it cannot be detected within the lifetime of a single observer." Morris argues from this that you cannot see creation either, therefore they require equal study.

Morris also uses testimony to support his stance that archaeopteryx is a bird. He quotes Dr. Carl Dunbar of Yale, "Because of its feathers it is distinctly to be classed as a bird."

Another use of testimony, by Morris, questions the authenticity of australopithecus. Morris states,

The Leakies, Johanson, and others have made a great deal of study of australopithecus found a good many fossils...those that have made the most detailed study...concerning australopithecus do not accept australopithecus as a link in the line leading to man.

The last reference Morris makes to testimony is when he claims he did not misquote. Morris claims, "I did not misquote or misrepresent Dr. Gould. We are often accused of misquoting or misrepresenting."
PHILOSOPHICAL FRAMEWORK

Morris works under the framework that there was an ultimate creator for everything we see, and of our existence. "Therefore a Creator, a Creator is postulated transient to the universe...able to create the complex universe, and that Creator would create it perfect for his purpose...," claims Morris.

SECOND NEGATIVE CONSTRUCTIVE

DR. SLUSHER

EMOTIVE LANGUAGE

Slusher begins with the normal thank you’s and so on. Once more, Slusher is attempting to create a sense of good will with the audience, and a non-adversarial relationship upon which to present his message. Slusher says: "Well thank you very much. It is a pleasure to be on the campus of Columbus College tonight. I bring you greetings from the campus of the University of Texas at El Paso."

According to Slusher, the evolutionists’ view of the origin of life is explained by the "big bang" theory. Which, simply put, is that a hydrogen cloud exploded and formed everything necessary for all life. But, a question is raised, "...where did the hydrogen come from?" An
evolutionist claimed, "...you just have to start with that. Assume that, and go from there." Slusher, in a very satirical voice exclaims, "Very scientific. I have been very impressed with that. Very scientific."

Slusher moves ahead to discuss the disordering of the universe. Slusher reports:

We see clusters tending to break up, clusters of galaxies, clusters of stars. We see exactly the opposite of what the evolutionists talk about. Now if we are going to talk on the basis of scientific evidence and not wishful thinking and some sort of 'pie in the sky by and by and let's stand by' and hope we win a few...you do not see at all what an evolutionist is talking about.

Dr. Slusher uses some emotive language when he speaks about matter and antimatter. Slusher states satirically, "If elementary particles produced matter and antimatter, they nod at each other when they get close to each other. Get up next to a little bit of antimatter and it's goodbye matter. It is goodbye Charlie."

Emotive language is used when Dr. Slusher discusses what scientists can observe. Slusher states,

We do not see any of these things that the evolutionist in his Alice in Wonderland type world that he talks about in that topsy turvy sort of thing that has nothing whatsoever to do with reality. We don't see what he claims to profess to see.
Definition

Slusher's first use of definition concerns the evolutionist's definition of the origins of the universe. Slusher reveals,

...this is something that happened by chance, by the random action, by irrational processes in which the physical forces interacted with the mother energy to produce stars, to produce galaxies, to produce clusters of stars, and clusters of galaxies.

Slusher then reports what scientists observe about our universe and defines the universe:

One has never seen a cluster of galaxies by observational evidence form. One has seen the very opposite. We have seen galaxies collide. We have seen stars that explode...We see things getting older. We see things dying. We see things running down. We do not on the basis of scientific observation see stars popping into existence.

According to Slusher, a mechanism takes energy that is available and "...uses it in a useful fashion."

From there, Slusher moves on and defines the circular reasoning used by the evolutionists. Slusher claims, "He uses fossils to date the rocks and turns around and uses the rocks to date the fossils." Slusher feels that such flagrant use of circular reasoning should not be tolerated.

Similitude

Slusher begins this section by comparing the two models as they consider the question of age in our
universe. Slusher states, "...this is a universe that is very, very old," according to evolutionists. Because of the idea of chance, "...if the universe in its present form came into existence by chance, it is something that takes a long, long, long time..., 15-20 billion years..."

Slusher continues, "Now the creationist's position is contradictory to that. The creationist's position would say, in the first place, matter and energy don't pop into existence..."

The only other example of similitude is found later in Slusher's lecture. He states that just because you have matter, energy, and the physical laws in the universe, does not mean anything will come out of it.

Slusher compares this to a junkyard.

Once upon a time I thought about buying a Datsun 240Z...I thought to myself later on, why didn't I just go up to a junkyard somewhere...there are pieces of all sorts of cars...there's energy galore...There's energy pulling in, they obey the physical laws and all I need to do then is what? Wait around for my Datsun 240Z, for the laws to put it together, the physical interaction between the pieces of the automobile, there's plenty of energy there, and out comes my Datsun 240Z.

Cause and Effect

Slusher's first cause and effect argument is from the negative. "We do not on the basis of scientific observation see stars popping into existence. We do not see clusters of galaxies coming into existence."
According to Slusher’s argument, if we do not see them now, they must not have happened in the past.

The next example of cause and effect occurs when Slusher relates the evolutionist’s explanation of the universe. "The so-called big bang." Slusher concludes that the cause for our universe, according to the evolutionist, is the big bang.

Slusher’s next argument from cause and effect pertains to the second law of thermodynamics. Slusher states,

The second law of thermodynamics says there is no way for information to increase in a system of mattered energy unless there is a mechanism to put that information into it. You can never have an increase in information. What must you have always? A decrease in information.

This argument is in direct opposition to the theory of evolution.

**Testimony**

Slusher uses the testimony of the evolutionists against themselves. Shapley made this statement: "Some people record 'In the beginning God,' but I say 'In the beginning hydrogen.'" Slusher uses this against the evolutionists. Where did the hydrogen come from? No answer is provided by the evolutionists.

Slusher also cites evolutionist George Lemonder:

He said the whole thing stopped. The stars and galaxies formed and there it was sitting. Then
he said this, 'the expansion resumed.' How about that? Newton's first law of motion says an object in the state of equilibrium does what?...remains in that state...

Since the evolutionists could not counter the creationists' argument, they came up with the theory that the universe formed on the run. Slusher uses testimony from Russian astronomer Lischitz to dispute this claim. Lischitz said, "...there is no way to form stars and galaxies in the expanding universe...the stuff is moving apart so rapidly that you can't form the stars and galaxies."

PHILOSOPHICAL FRAMEWORK

Slusher's framework is similar to Morris'. That is evident in his argument concerning the origin of the universe. Slusher's question of where did the hydrogen come from, relates that he feels there must have been something to create the hydrogen.

FIRST REBUTTAL CONSTRUCTIVE

DR. SCHWINNER

EMOTIVE LANGUAGE

Emotive language is used by Schwiner when he accuses Dr. Slusher of "gobbly gooking." Schwiner states, "Now
I'm not an astrophysicist so I can't respond to the rest of the gobblty gook because it is not my field..."

MODES OF ARGUMENT

Definition

First Dr. Schwinner refutes a definition given by the creationists. Schwinner says,

One of the interesting points that the creationists bring up is that...they state that evolutionists believe life evolved by purely random processes. That is just wrong. That is not what the synthetic theory of evolution says. Random mutations are random components of evolution but we have the process, the extremely non-randomizing process of natural selection.

The second law of thermodynamics generally defines the increase of entropy in our solar system. In his refutation of Dr. Slusher, Dr. Schwinner states, "I have never claimed, no one this far is seriously claiming that our galaxy is not running downhill, according to the second law."

Similitude

Schwinner uses comparison to prove that you can see evolution take place. He compares viruses with the process of evolution. Schwinner reports,

Creationists claim that evolution is so slow that you can't see it in operation and therefore, you know, it is totally unfounded. Well actually you do see evolution in operation...In viruses which are extremely simple organisms evolution in fact progresses fast enough to see.
Also along these same lines, Schwinner interjects that insects evolve fast enough to see. "Resistance to DDT among various strains of insects is an evolutionary change."

Finally, Schwinner compares creationists' arguments to a mess he must clean up. Schwinner concludes,

Spill a mess in your house and try to clean it up and you will see how long does it take...that is what they are doing. They are making mess piles, and we have to clean them up.

**Cause and Effect**

The only example of cause and effect in Schwinner's rebuttal concerns the forming of crystals. Schwinner claims, "Every time a mineral crystalizes, it goes from an unordered state to an ordered state...they form like that into a very ordered structure."

**Testimony**

Schwinner utilizes testimony to counter Slusher's use of Shapley's testimony. Schwinner claims Shapley rejects his first hypothesis about the origin of life. Schwinner offers further testimony from Shapley. "...there never was an original creation. The universe we know according to this hypothesis has no beginning and presumably will have no end."
PHILOSOPHICAL FRAMEWORK

Schwinner reveals his framework by confirming Shapley’s view of the origin of life. "...no beginning and presumably...no end."

FIRST REBUTTAL NEGATIVE

DR. MORRIS

EMOTIVE LANGUAGE

Morris’ only use of emotive language is shown when he accuses the evolutionists of creating pseudolaws about order and disorder. Morris exclaims,

To ignore such fundamental differences in an effort to arrive at some general overview or law is to create a false overview and a pseudolaw. To say that there is an obvious tendency of nature from disorder to order and organization, is to completely compromise all of thermodynamics.

MODES OF ARGUMENT

Definition

On Dr. Schwinner’s insistence, Morris redefines an open system. Morris states,

Dr. Schwinner doesn’t understand what I said about the difference between open and closed systems, and I did point out that even in an open system, and all systems are open, you have to have more than just an open system.
Similitude

Morris uses similitude to compare catastrophism vs. uniformitarianism. Morris contends,

With respect to catastrophism versus uniformitarianism...when I was going to school...and in those days of course uniformitarianism was the watch word. You just didn't use the word catastrophism...but now it is different, and there are even two societies for the study of catastrophic geology now..."

Morris continues his comparison, "...ripple marks, for example, cannot be explained in terms of uniformitarianism..." while "ripples and footprints and wormtrails and so on is evidence of catastrophic formation."

Cause and Effect

The evolutionists, according to Morris, use a false cause and effect argument pertaining to the peppered moth. Morris states,

In exactly the same way the coloration of the peppered moth, classic example of so called evolution in action...In other words, the peppered moth adjusted to the different coloration of the environment...but it is still the same species of moth, not even a mutation, just variation and recombination of factors already present.

Testimony

Concerning the evolutionists charge of the misuse of testimony, Morris has this to say,

We are frequently being accused of misquoting or quoting out of context, not only here tonight,
but this is another one that is hard to refute, because we have to go back and give you the whole context and show you that when they say that we are quoting out of context, it is what they are doing.

Morris uses testimony to dispute the evolutionists claim that insects resistance to pesticides is evidence of evolution. Morris relates,

Dr. Ayala, a geneticist, states...insects resistance to a pesticide was first reported in 1947...Since then resistance to pesticides has been reported in at least 225 species of insects and other arthropods...resistance...were apparently present in everyone of the populations exposed to these man made compounds.

The next instance of testimony utilized by Morris comes in his discussion of crystals. Morris uses testimony from Dr. George Strelovopolus, an American scientist, to refute the evolutionists assertion that crystals of one type act the same as all crystals. Strelovopolus says,

He makes it appear as though crystals in highly ordered organic molecules belong to the same class, when in fact they do no. When crystal is broken up, the smaller crystals are physically and chemically identical to the original.
PHILOSOPHICAL FRAMEWORK

The basis for Morris' arguments indicate his creationist framework.

SECOND REBUTTAL CONSTRUCTIVE

DR. FRAZIER

EMOTIVE LANGUAGE

Frazier begins his rebuttal by claiming he is not a Marxist or an atheist. "In fact," states Frazier, "underneath this beard, I am basically a nice American young man."

Later in his rebuttal, Frazier criticizes Dr. Slusher's use of humor. Frazier relates, "I am certainly not an astronomer with a yearning to become a stand-up comic."

MODES OF ARGUMENT

Definition

Frazier describes a logical fallacy that the creationists use. "There is one called argumentum ad hominem, which means that you disprove what a person says by saying that that person is a naughty person," claims Frazier.
Frazier refutes Morris' assertion that evolution has no ordering system through definition. Frazier insists that evolution does have,

...an information sorting process that Morris says doesn't exist. You see it is evolution. It is natural selection. Natural selection is the process by which energy is organized, or it allows organic materials to be organized by evolutionary progression.

Similitude

Frazier compares the food chain to the second law of thermodynamics. Frazier insists, "In other words, the energy flows through that food web system. Alright, at every step in the process entropy is increased or energy level is decreased, precisely as the second law demands."

Testimony

Frazier denies that Dr. Morris quoted Dr. Gould correctly, Frazier relates, "Dr. Morris said, that Gould said, that we are all supposed to be catastrophists. And I read the quote to you and say, Gould says he didn't say that. In fact, Gould specifically said he didn't say that."

PHILOSOPHICAL FRAMEWORK

Frazier reveals that he does not believe in a creator as the originator of life. Frazier says, "...if all of this were divinely created, it was divinely created
specifically by a god who made it look very, very old to fool us."

SECOND REBUTTAL NEGATIVE

DR. SLUSHER

EMOTIVE LANGUAGE

Slusher starts his rebuttal responding to Dr. Schwinner's charge of gobblty gooking during his lecture. Slusher responds sarcastically, "I must confess, Dr. Schwinner, that I understood your lecture, and I think if you would, if...and Dr. Schwinner, I believe if you would study real hard you would understand mine."

MODES OF ARGUMENT

Definition

Slusher begins by defining radiometric dating using a mathematical equation. The reason Slusher does this is to show the amount of variables involved in this supposed exact method of dating. According to Slusher, "The equation says what? Lead in the rock now equals lead in the rock then plus the uranium in the rock, now times E to the lambda T, minus one." The reason Slusher gives this definition is to show the great deal of variation, "...using the same atomic admitter," claims Slusher.
Similitude

Slusher compares a watch to the universe. Slusher states,

You take a watch for instance, that is one of those self-winding things, you know some people say, 'ah there is your beautiful violation of the second law of thermodynamics.' Wave your arms and your watch winds itself. Well, you know good and well that you are taking random energy and putting it in an ordered form. But, you take that little mechanism out of the watch, you know, and that takes that random form of energy and puts it in another form. And you can wave your arms like a windmill all day and it is not going to wind itself.

Slusher then uses similitude to disqualify the big bang theory. Slusher insists, "Have you ever seen an explosion produce order? People set off things of that sort to produce disorder." So, how can the big bang produce order.

Cause and Effect

Slusher utilizes cause and effect relationships to show how radiometric dating can come up with erroneous ages. Slusher states,

The Palivious off the Hawaiian Islands using potassium argon dating in those Palivoious...by potassium argon dating those Palivious were dated for instance as 160 million years and 200 million years. But the flows occurred in historic times of 160 years ago and 200 years ago.
Testimony

Finally, Slusher uses testimony to justify the creationist’s lack of being published in scientific journals. Slusher contends,

You know, Hans Alfen, who is one of the greatest cosmogeneticist, one of the greatest astronomers of our time, he is a professor of applied physics out at the University of California at San Diego among many places. He commented that in the United States there is what is called the peer system. You know, for judging articles and seeing what will be published and what won’t be published. And he said if you come up with an idea that you get pretty well accepted by your peers; the peer system in the United States with scientific journals will ensure that it has eternal life...You come up with an idea and it goes against the main stream, and it won’t get published as a matter of fact.

PHILOSOPHICAL FRAMEWORK

From Slusher’s arguments, it is clear that he believes in a Creator for the origin of life. All his arguments attempt to negate the idea of a chance occurrence of life.
CHAPTER III
SUMMARY AND CONCLUSION

This summary does not include all the instances of emotive language, modes of argument, or philosophical frameworks used in the debate. Major representations are offered.

Dr. Schwiner

Dr. Schwiner's arguments concerned what the theory of evolution is not. Another major argument from Schwiner revolved around the lack of logic used by creationists. Schwiner's next arguments turn to the fossil gap in evolutionary theory. Finally, Schwiner argued that creationists misquote sources.

Schwiner argued from definition to illustrate what evolution is not. Schwiner said, evolution is not against religion or God. Also, it is not trying to test anyone's faith.

Schwiner employed several modes of argument to discredit creationist logic. Schwiner first defined an instance when creationists used faulty logic. Schwiner claimed that creationists place fossils into "kinds" which is not a logical way to group fossils. Schwiner also compared creation logic to a "Winnie the Pooh" comic strip. Schwiner finally used Morris' own testimony to
show the lack of logic in creationist literature.

Schwiner said Dr. Morris claimed things do not exist in his writings, when they actually do exist.

Schwiner utilized cause and effect to argue the fossil gap question. The evolutionists, according to Schwiner, have a transitional fossil between reptiles and birds, archaeoptryx. But, Schwiner said the creationists use a negative cause and effect argument to discredit the evolutionists transition fossil.

Lastly, Schwiner used testimony to argue that the creationists misquote sources. Schwiner read the full context of passages in an attempt to show where the creationists misquoted.

Overall, Schwiner did not appear to favor one mode of argument over the other. Schwiner tended to use each mode equally.

Dr. Frazier

The main topics in Frazier's arguments included: uniformitarianism, radiometric dating, and the laws of thermodynamics.

Frazier used definition to argue the uniformitarianism problem. He said that uniformitarianism basically states that things we see happening now (gravity, erosion, etc.) occurred the same way in the past.
Frazier also used cause and effect arguments with the topic of uniformitarianism. Frazier insisted that the creationists must reject uniformitarianism, because if they did not, then the earth must be very old.

Frazier utilized definition to argue the radiometric dating question. Simply put, Frazier related that radiometric dating is based on the principle that elements break down at a constant geometric rate.

The last of Frazier's major arguments concerned the laws of thermodynamics. First, Frazier defined thermodynamics. He stated that creationists believe one definition, which is that the earth is running down and disordering. The evolutionists accept the creationist view as correct, but the earth is an open system and the creationist's view of thermodynamics only works in a closed system. Frazier also employed similitude for the argument of thermodynamics. He insisted that if we see the principle of thermodynamics at work today, then you can be assured they worked the same in the geologic past.

Frazier clearly enjoyed arguing from definition. While Frazier did use other modes of argument, he favored definition.
Dr. Morris argued similar topics as his opponents Schwininer and Frazier. Those being thermodynamics and the alleged misquoting issue.

Morris argued thermodynamics first from definition. He said that according to the second law of thermodynamics, order tends to go to disorder. Later, Morris used similitude to argue thermodynamics. He compared the ability of each model to deal with the laws of thermodynamics. Finally, Morris used testimony to argue thermodynamics. Morris presented testimony from Dr. Harold Blum, a known evolutionist, to support his view of thermodynamics.

Concerning the misquoting issue, Morris claimed he did not misquote. Morris used personal testimony to defend himself.

Morris uncovered some new issues. He discussed the foundations for evolution and creation more fully. Morris defined evolution first as a natural process in a self contained universe. Morris then proceeded to define creation as the opposite of evolution. A process that cannot be explained in terms of natural processes, therefore, a Creator is postulated. Next, Morris used similitude to compare the two theories to decide which was more accessible to the scientific method. Moving on,
Morris utilized cause and effect to discredit evolution, and to show creation in a favorable light. Finally, Morris used the testimony of Dr. Paul Erlich, Dr. Cora Pauper, and Dr. David Kitch, all evolutionists, to strengthen his claims about evolution and creation.

Morris argued somewhat differently than his opponents. Instead of just defining a concept, Morris would employ several other modes of argument to stress his point. However, Morris did seem to favor definition and testimony as his primary argumentative tools.

**Dr. Slusher**

Dr. Slusher had a limited amount of topics. However, the topics he covered were comprehensive in nature. Thermodynamics topped Slusher's list. Also he spoke on the origins and age of the universe.

Thermodynamics was thoroughly covered by Slusher. He began by comparing the laws of thermodynamics to a junkyard. Slusher stated that a junkyard was an open system like our universe, but following the laws of thermodynamics, we do not see junk ordering itself to become a car. Furthermore, Slusher used cause and effect to discuss thermodynamics. Slusher claimed that the second law of thermodynamics assures that there is no way for information to increase in a system. The law is in
direct opposition to evolution. Next, Slusher defined thermodynamics and showed it to be in direct opposition to the theory of evolution. Evolution says things are going uphill, while thermodynamics says things are going downhill. To finish his discussion on thermodynamics, Slusher used testimony from Lischitz to defend his views on thermodynamics. Lischitz reported that a universe could not form on the run according to the law of thermodynamics.

Slusher's other major argument concerned the origin of the universe according to evolution and creation theory. Slusher began by defining the origin of the universe according to the evolutionists. Slusher claimed the evolutionists felt the universe originated by chance. Next, Slusher compared each model as they considered the age or original beginning of the universe. Following that, Slusher used cause and effect to show the evolutionist's view of the origin. The "big bang" caused the universe, related Slusher. Finally, Slusher used testimony concerning the origin of the universe. Slusher used the testimony of Harlow Shapley, an evolutionist, against the evolutionists' theory of the beginning of the universe.

Slusher also raised several questions that the
evolutionists could not counter. Those being, the "big bang" or the origin question, and the age of the universe. 

Slusher enjoyed using satire in the delivery of his arguments. Slusher had a favorite topic, rather than a favorite mode of argument. At one point in the debate, Slusher commented that he wished it were a thermodynamics lecture.

In general, the language used by each debater revealed expertise within one or more scientific field, with the ability to marshall evidence for a rhetorical purpose. Although all were scientists, they all engaged in emotive language.

The philosophical frameworks of origins were evident. The evolutionists argued for an energy, time and chance theory of origins. The creationists insisted on origins by purpose, design, and an original Creator.
CONCLUSION

The purpose of this study was to provide a rhetorical analysis of a debate on the evolution/creation issue.

The hypothesis was that a responsible perspective on theories of origin could be provided by making a comprehensive rhetorical analysis of a debate between responsible scientists. The analysis, therefore, focused on the language, arguments, and philosophical frameworks used during the debate.

The debaters chosen were: (1) Dr. Schwinner, a paleontologist from Columbus College, (2) Dr. Frazier, a professor of geology at Columbus College, (3) Dr. Henry Morris, president of the Institute for Creation Research, San Diego, (4) Dr. Slusher, an astronomer and geophysicist from the University of Texas, El Paso.

The analysis was made from taped and written transcripts of the debate at Columbus College, Georgia, May 6, 1981.

The hypothesis was supported. The analysis revealed that the debaters marshalled their language and arguments to responsibly and clearly defend their respective philosophical frameworks.

Because the writer cannot claim that all possible arguments about the evolution/creation issue were employed
in the one debate studied, the following suggestions for further study using the same methodology are offered:

1. A study of the same debaters in different settings.
2. A study of other evolution/creation debates by other responsible debaters.
APPENDIX A

MODERATOR:

Thank you. Thank you too. How man or woman, as the case may be, came to be is very much a question that has been debated since the earliest dates of recorded history. I don’t have to tell you that. How we came to be is an issue that has currently caught or re-caught the attention of the public eye as legislation has come forth of many states to permit the teaching of a new theory of creation in public schools. And of course tonight we will look at both the evolutionary model and the scientific model of creation. Tonight our distinguished panelists will discuss the scientific principles and validity of both theories. The religious and moral implications will be left unargued. We will debate specifically on scientific principle. Regardless of where you stand on this particular issue, I think we should all be reminded that it is a grand privilege to live in a country where everyone, regardless of their beliefs has a guaranteed freedom to speak as he or she wishes without fear of reproach. Thank you for the Constitution. I didn’t write that. And of course, we should all exercise that freedom in a spirit of understanding and respect for these gentlemen who have consented to speak to us tonight and
your cooperation, attention, and devotion to the honor of this debate is greatly appreciated.

The question tonight resolved that the evolutionary model is superior to the creation model in explaining the origin and history of life. Speaking for the affirmative side we have two distinguished panelists both of which are on the faculty of Columbus College. As I call your name please signify who you are. First is affirmative is Dr. David Schwinner. Dr. Schwinner received a Bachelor’s in Science from the University of Wisconsin, and MA at the State University of New York in paleontology and got his Ph.D. in paleobiology at that same university in 1973 and now on the faculty of Columbus College. A nice hand for Dr. Schwinner please. Thank you.

The second affirmative, Dr. William Frazier received a Bachelor’s in geology from Furman University and his Ph.D. in geology from University of North Carolina at Chapel Hill. He is now a geologist on the faculty here at Columbus College. Dr. Frazier.

On the negative side, the first negative is Dr. Henry Morris. Dr. Morris is President of the Institute of Creation Research. He received his Ph.D. at University of Minnesota and with a major in hydraulics and hydraullogy with minors in geology and math. He has had 30 years of various university faculty positions, including 13 years
as head of civil engineering department at Virginia Tech University. He is the founder of the Christian Heritage College and the Institute for Creation Research. Will you please welcome Dr. Henry Morris.

And our second negative is Dr. Harold Slusher. He is a professor of astronomy and geophysics at the University of Texas at El Paso, and he is a research associate at the Institute for Creation Research which, of course, is located in San Diego, California. Dr. Harold Slusher please.

The format for tonight's debate will be as follows: the affirmative will speak for one hour followed by the negative side for one hour. There will be a ten minute break for each of us to do whatever is necessary in that ten minutes. And then this ten minute break will be followed by the first affirmative's rebuttal lasting ten minutes long. The second rebuttal again ten minutes. Again, the second affirmative and the second negatives rebuttal. At the end of each ten minute period or the total...1, 2, 3, 4, or the 40 minute rebuttal period we will take questions and answers from the audience. I must say that I was hired to be a neutral party and so I will remain. Thank you and let's get started. Good luck to both of you. Dr. Schwinner will be first.
Thank you. Thank you all for coming. We should also thank Reverend Hildebrand from the Edgewood Baptist Church for his efforts to organize this event. The first thing I have to do is state as firmly as I can and as gently as I can that we’re not speaking against anybody’s religion. We’re not denying the Bible. We’re not denying God. We’re not preaching atheism. Evolutionists do not preach atheism. Never in my courses did any of my professors tell me that evolution was against any religion or speak against any religion. We would like you to make sure that’s clear. We’re not testing anybody’s faith. The trouble is that Dr. Morris and his associates have been directly and indirectly telling the public that in fact evolution is godless, atheistis, and etc., etc. And there’s where it began to take exception and probably part of the reason why scientists are beginning to take this business seriously. Not that we take scientific creationism as a science seriously but we consider the process to be a bit of a threat to organized science. And I hope I can demonstrate why I am making these charges. Once again, let me give you some examples of these statement to back them up. Dr. Duayne Gish, who is not here, who is the co-director with Dr. Morris, as I understand, of the Institute for Creation Research in his
book, "Evolution: The Fossils Say No," I have a copy there if you would like to see it, on page ten says in italics, "Most scientists are unbelievers and unbelieving materialistic men." That's on page ten of his book. Well, it's funny. He didn't ask me. He didn't ask Bill. My colleagues at Columbus College told me they were never asked. I belong to four scientific organizations and we have never taken a poll. Dr. Gish's information is his own opinion. The trouble is he makes statements to the public like this without foundation, and these are inflammatory. By the way, on page twelve of the same book he says, "Many evolutionists believe in God." Which means we got our faith back in only two pages and one editing mistake.

Let me reiterate finally again. I am not speaking against religions. You can find any number of ways of conforming evolutionary theory with whatever belief you have. They are not contradictory. There are many clergy. I have no statistics to prove it, but I would dare say the majority of clergy do not have antagonism to evolution. The real trouble is that the anti-evolutionists are taking the tack that if you are against evolution, you are against God, you're against motherhood country, and you're teaching sin and perversion to your students. This is a very, very, if you want to put it, "unamerican" approach.
In fact as a curious exercise, you may take some creationist literature and put in the word glorious socialist revolution in place of church and God, and you will discover you have excellent communist rhetoric.

Now, I have made some strong charges and I would like to defend them. First I am going to discuss scientific methods, and I know it's not the most fascinating topic but I'll try to make it a little less rigorous. Evolutionists, sorry, scientific creationists have been making much of the term theory in describing scientific...in describing evolution. They say evolution is just a theory. Now, the Oxford English Dictionary, which is quite a good standard reference, defines a theory. It says theory, scientific definition, "A statement of what are held to be the general laws, principles, or causes of something known or observed." Not the idea; not a hair-brained idea; laws and principles. That is the scientific definition of a theory. The same dictionary says popular definition, you may look this up if you like in the Oxford Dictionary or Webster's, popular definition of theory, "A hypothesis proposed as an explanation." That means an idea. Hypothesis is the scientific word for idea. So, what our creationists friends are doing is playing the game two ways. They use the word theory to mean just an idea in
the popular definition, and we, scientists, use the word theory to mean the technical definition, a valid, tested, concept based on principles and laws. Do you see? They use the definition as they want it. Have you ever heard the term just a theory? That is like saying just supported by law and observation. That is the problem. It is a matter of using our own scruples and our own principles against us in ways that were not intended to be used.

To continue just for the sake of completeness. Hypothesis is the scientific word for an idea. By definition, scientific creationism is a hypothesis, an idea. To date not one single scrap of positive evidence for scientific creationism has been published in the professional literature, it only appears in books...part of the literature it appears, scientific creationism appears in the rest is largely in books published by creationist societies. These are not what are called referree journals, these are not professional publications, they are not subject to cross examination. What we call peer review, that is the professional literature. These do not constitute in any way, shape, or form scientific material. They are not evidences. For completeness, by the way, a law in science is defined by the Oxford Dictionary in scientific notation as a
theoretical principle. Theoretical principle. This is the exact wording. Expressable by a statement that a particular phenomenon always occurs if certain conditions be present. That means any random event, any science that involves random events cannot be subject to scientific law. In other words, all of geology, all of biology, parts of chemistry, and especially atomic physics; atomic theory, atomic energy is theoretical. So is all of medicine. Diseases do not always follow laws. In other words law only applies when you can predict what something’s going to do. None of the natural sciences that have a random element can be subjected to laws. If you want to get an example of whether scientific law and whether scientific theory is a valid concept, consider what would happen if Dr. Slusher and Morris had diagnosed malignancies, and would they decline to go to have it removed because it is only theoretical but it will kill them? That’s what theory is, based on experience but not perfectly predictable. And on that basis, evolution is right now in the scientific sense a perfectly valid theory. It can never be said to be just a theory. In the common sense evolution is a law. That’s the difference there. There giving the common sense and mistaking it for the technical sense.
Now this is to the essence my argument. Along with this hypothesis law theory business there are a lot of ways in science that facts can be abused, and I am going to base my presentation on just to show you how our opponents are abusing the concept of fact and information in their methods. In science the absolute worst of logical errors is wrong fact, incorrect, plain, dead wrong statement, that is inexcusable unless it is purely accidental and a pure result of human error that cannot be overlooked. A logical error is just inexcusable.

Let me have the first slide. Can I...I am not sure how this system is going to work. Can we have lights please. Supposedly when I say something lights go down. There they go. Can we have the first slide? Can I have the stage lights too? Thank you. I'm fortunately the guinea pig of mechanics. This is from Dr. Gish's book, "Evolution: The Fossils Say No." This is a photocopy from his book. Now the purpose of this particular picture is to show how the amphibian up on top could never possibly be the ancestor of the fish...Now note, the beastly on top certainly does not look like a fish and he says reconstruction of an ichthyostegid amphibian, but let's look at the next slide please. The thing on top is the same thing he represented. Unfortunately it is not an ichthyostegid amphibian. That's called eriopse. Can I
have the next slide? That's an ichthyostegid amphibian. It is a whole lot more fish-like. Take away the legs for example. In other words, he just plain put the wrong name on the wrong animal, but it is very coincidental that the wrong animal just happens to look much more what he wants to show. One of the kinds of examples. It is hard to document what they are doing. Top east is labelled by Professor Romer is two classic x of vertebra paleontology as eriopse. Go back one more please, and he calls that an ichthyostegid amphibian. Now two forward, and Dr. Romer ichthyostegid itself. And they are not at all similar. He is just plain got that wrong. Now can I have the house lights back please? That's one example.

Another basic problem in presenting fact is when you don't first refute what has been previously been disproven in literature. In other words when a scientist has absolutely shown by fact or observation or law or by some extremely careful method that something is wrong. You don't use the same idea and go back and represent it especially to the public as being possibly true. For example, Dr. Morris in the book "Scientific Creationism" states, "One of the most important fossil gaps is that between the questionable one celled organisms found in precambrian strata and the abundant complex marine vertebrate life of the cambrian. That's on page 80 of
"Scientific Creationism." Dr. Gish in the same book, "Evolution: The Fossils Say No," states that not a single indisputable multicellular fossil has been found in precambrian rocks. Can I have lights again and the next slide? In 1960 Dr. Glazner described an incredibly complex fauna of multicellular animals that occur 500 feet stratigraphically below the first cambrian trilobites in Australia. These are examples. Whether the exact nature of the fossils is not that well known, but they are unquestionably accepted by modern paleontologists as being multicellular life. In addition, Dr... I suspect Dr. Morris has an answer for this because he will probably say that these are just more cambrian animals or that they are not properly dated or something to the effect. Unfortunately he is not published professionally refuting this, so therefore his word is just his word to you and he has not defended it to scientific colleagues. Can I have the next slide?

These are more of the same things. This is a penatualid, a sea pen, it is a type of coelenturate. The top is, it appears to be a segmented worm, which by the way is being accepted now by paleontologists as a possible ancestor for trilobites. Therefore, the trilobites did not appear by magic or by special creation. And the next page please. In addition what the creationists have not
latched onto yet, although it has been in literature for twelve years, is that there are other fossils besides the ones in the Ediecaran Fauna. In fact they are now known from nine different, sorry five different continents. (There are only nine continents as far as I know.) And they are common and abundant and more and more of these things are in literature and yet they keep spouting the same line. There is no precambrian multicellular fossil record. Well, that’s just wrong. The fact error is they have not been aware, they’re not bothering or not trying to see what’s in the professional literature. Fact error number two, in addition...can I have the house lights; I am sorry I have to keep turning them off...In addition, among the factual errors I would like to point out Dr. Gish in the same book attempts to prove that there are no transition fossils. And he states, all mammals have a single bone, the dentary on either side of their jaw. Every reptile, however, living or fossil has at least four bones in the jaw. And the idea is to prove that there could not be transition between mammals and reptiles. So once again please house lights, this is the last time I will do this for a while. Bill. He illustrates, well, he forgot about that guy. This is overleaf from the specimen, this is on the page one page behind the specimen he illustrates in his book. This is diadiaphorus, a well
known upper triassic mammal-like reptile from Africa. It has only a single dentary bone. There are approximately thirty other species, thirty other genera of mammal-like reptiles with single dentary bones. Next slide please, Bill.

These are the ones he choses to describe which are mammal-like reptiles of the group called therapsid, and they have multiple jaw structures. In fact, there is actually an excellent transition sequence between the multibone jaws in these therapsids and the single bone types. Just to give you an illustration what this group looks like. They are excellent transition fossils by the way. Next slide please.

Reconstruction of the complete skeleton of therapsids. One of the more primatives of the lot, but it shows a very mammalian suspension. The structure is incredibly mammalian. It has among other things a double occipital condyle, a secondary palate, a number of skeletal features that show it is quite close to the line of mammals but not quite there. One more slide on that please. I think we have another example. This is from a different publication of lycinopse which is also the very mammal-like reptile and shows only a vestige of the last of the two jawbones. At the very tip, the right hand tip of the jaw there. So it is a very nice transition from
having multipiece jaws to having single piece jaws as all mammals have, but somehow Dr. Gish just missed this. These have been in literature for thirty years. Can I have the lights again and the slide projector off for a second.

I have tried to document and there are, this is, I don't want to say take my word for anything I am trying to document, but I have, there are dozens and dozens and dozens of these things that are used as part of their evidence for scientific creationism. You cannot base science on the slightest fallacy.

But let's talk about some of the other kinds of logical problems we have, and one of the reasons why we are bothered by the concept of scientific creationism as is presented. One of their tacks is the appeal to pity. That is it is a very popular tack in fact in logic. You say everyone is against me so I must be right. Let me give you a quote. Dr. Morris in describing this in *Scientific Creationism* describes on page 14 that a Californial law in favor of creationism admits strong resistance. In fact he quotes he says, "Tremendous pressure from the triple AS," the American Academy Further Advancements in Science, the National Academy of Science, and the American Association of Biology Teachers, for that in total at the time was approximately 500,000 members.
And we are supposed to pity the poor scientific creationists by being ganged up on by the big guns in science. I ask you whether that speaks well for scientific creationism or not.

We also, they use logical trap of the false assumption. That is, it is also called setting up a straw man. You set up a false statement by your opponents and then you handily destroy it. How many of you have heard that creation, that evolutionists are supposed to say humans descended from apes? Well I'll tell you, we didn't. As far as I know anthropologists are not accepting human decent from apes. We do claim, they do claim, I am not an anthropologist, that humans and apes have a common ancestry, and there is a big difference between saying a chimp is my ancestor or saying that somewhere roughly in the late my Miocene epoch about fifteen million years ago there was common, a common gene pool, a common group of organisms that on either end that may have been geographically separated and one end evolved into humans and one end may have been ancestral apes. There is a big difference. We are decended from apes. We are not decended from monkeys. We are not decended from gibbons or anything like that. But the point is that they say we say that. And one logical thing you cannot do is to say,
put false words in your opponents mouth. That is not just a logical flaw, that is a deceitful tactic.

Let's try another false assumption. And grant that there may be evolution minded teachers who make this mistake. Dr. Morris in fact in one of his ICR impact series describes the circular reasoning in geology where rocks dated by fossils and fossils dated by rocks, and he is quite correct, forty years ago. Unfortunately the last forty years we have been using widely the technique referred to as absolute dating. In which case you use radiometric techniques, the same principle that brought you the atomic bomb to date your rocks. And funny thing is the atomic dates confirm the dates derived by the fossil record method. In other words, he never once said in his whole circular there that the circularity of reasoning evolved with fossils dating rocks, rocks dating fossils was broken forty years ago. He's attacking a forty year old idea in a recent publication. It's a little like my attacking bloodletting in medicine. Just for the record, Bill's going to talk more about this because this is in a more strict geology. Can I have one more...can I have the slide again please and the lights.

This is, I don't know how well this one's going to come out. It is a very light slide. Could I have the lights totally down. This is from a Shell Oil Company
publication. I hope you can see it. It’s a precambrian map showing the absolute dates done. This is by Shell Oil Company for Shell Oil personnel. They are not trying to prove creationism to their personnel. They are trying to make money. They don’t waste money on this sort of stuff. This business of taking an absolute date using radiometric methods is not a one shot deal, it’s not a wants to prove for creation or for evolution. It is hundreds of thousands of dates which all work out right. The rocks underneath date younger, they date older than the rocks on top. The ones cutting other ones are younger than the ones being cut. In other words, these absolute dates confirm the fossil record, and yet Dr. Morris never once mentioned this in his print. Okay, lights again please. House lights please.

I am going to have to skip a couple because I see that I’m running out of time and I want to give Bill his full time. One of the things that really intrigues me is the argument against the transition fossils because it is my profession, it’s palientology. Once again the creationists are playing popular notion versus full technical scientific level of presentation. If you were to ask me is there such a thing as a transition fossil on the perception of a nonspecialist, somebody who does not know every single nuance of bone in an animal, I would say
certainly, there are dozens. If you want to be as purely technical as you can and say not every single thing is in perfect place, then I would probably be honest and say no. But for the sense that he is presenting to the public, the sense of common sense level is this thing clearly related to both of these? The answer is undesputably yes. And their methods are to describe half of the features and not all of them. The best example is the one that Dr. Gish brings up all of the time about archaeopteryx, that poor old first bird. First of all, he makes his incredibly false assumptions that we should find all kinds of transition fossils in the record. Well that is just plain wrong. Had he done a little bit of professional paleontology he might know. For example, I found the first dinosaur fossils in Georgia. Do you think I have about a shoebox full of material? Do you think one dinosaur lived here? One shoebox full of dinosaur? They are rare. Sometimes fosilization may be a one in a billion chance. But he says blandly, if I can find the quote here, in I think it is discussed in the earlies amphibians he said, "There should be hundreds of thousands of fossils of transition forms." No, there is absolutely, that is a straw man again. I can't even figure out what logical flaw he is falling into. He is just simply making a false assumption. That's not...no
paleontologist agrees with that. Maybe Dr. Gish has the ability to find fossils that I, none of us seem to have. But let's look at this first bird. Archaeopteryx is known from exactly six specimens, all from one limestone outcrop in Germany. If that limestone had been withered away we would have no early bird fossils whatsoever, and in fact two of those archaeopteryx specimens were placed in museum dinosaur collections because paleontologists couldn't tell that they were birds without the feather imprints. But Dr. Gish states let me quote this, he says, well basically my notes are getting kind of messed up. He says basically it's got feathers, it's got feathers it's a bird. What he is really saying is that I can only see the feathers. I can't see the rest of the tails so it's got feathers, to me it is a bird. What he misses is the fact that archaeopteryx also has a whole in the jaw in common with all dinosaurs and no birds. It doesn't have a beak. It has two claws on the wings. It has a reptilian tail. Let me have slides again. I have illustrations of this. Lights please this is the last time promise.

This is the popular reconstruction of archaeopteryx. The only thing that is really noticeable in this particular reconstruction, sure it has wings and it has feathers, by the way it doesn't have wings, we will get to that in a second. It has got a long tail. It's got
teeth. The reconstruction of the head is arbitrary. That's not from fossil evidence. Can I have the next...wait, here's the skull and this is accurate. That whole up there, the foramen and the jaw is only found in dinosaurs, no other bird has it. It has teeth. In fact the head is a perfect dinosaur head. There are coelurosaursian dinosaurs that have identical heads. Can I have the next slide please.

This is a drawing from the actual specimens and one of the points of this archaeopteryx did not have wings. It had hands. Those things are just large, long fingered hands. They're not fussed together as every single other winged bird has in it's wings. Next slide please.

These are sketches from Robert Bocker's paper and signed "a big American," not for the purpose of convincing anyone of evolution versus creation. Atkins carrying a coelurosaursian dinosaur in archaeopteryx by skeleton, not by the wings, which only Dr. Gish can see, I am sorry by the feathers. The basic difference is only one's got feathers and one has longer fingers. And yet Dr. Gish does not mention these things. He just says it's got feathers, it must be bird kind, it can't be dinosaur kind. In fact, Dr. Gish has invented a new taxonomic term called the kind. And that is exactly how he gets around the problems of evolution. Can I have the lights. He simply
redefines things as kinds. And of course he can't find a transition fossil because it then becomes the next kind. And some of his kind, he says humans are one kind, in other words, the species. And he says dogs, wolves, and coyotes are another kind. That means he using degenera as his kind. He lumps together, he separates out the apes into what we, the rest of the scientists call families, but he accepts, he says there is sponge kind and there is jelly fish kind and he says there is worm kind and that is 11 different phyla in one kind. And of course you can't show him a transition fossil because he will just put it in whichever kind he wants to. What he is doing is using a common sense, what seems like a common sense approach and he is violating the entire science of comparative anatomy. And I didn't know exactly how far I was along.

So Dr. Gish's kinds are the reason he can say there are no transition fossils because he will just put them, if it is too much of a transition he will put it in one kind or another and bingo. No more transitions. But do you wonder why scientists consider these people threats to order and logic? This violates all the principles of science just simply trying to put things into logical systems that can be analyzed effectively and testably. How can I analyze what Dr. Gish considers a kind? He's just, the words are almost, I think one of the problems in
a lot of these debates is that scientist just go, get’s spluttery when they are confronted with this kind of thing. We don’t even know where to begin. It’s, it’s so horrifying.

Let me conclude with one more serious line of problem in creationists logic and then I will turn the microphone over to Bill. This is a very essential one. This is what we call argument from the negative. You approve creation by disproving evolution, and the only trouble with that assuming they could disprove evolutionary theory is that it still doesn’t prove creation. The only way that works is if you have only two hypotheses, A or B. Disproving A proves B only if there is no other possibilities. So for example, you point to the complexity of a tree and say, something that complex could only have gotten formed by divine intervention. And I’m not saying that there wasn’t divine intervention somewhere in the early stages of it, but the immediate ancestor of that tree if it has got a fossil is a more logical way of figuring out where it may have come from directly. But pointing to the complexity of a tree or the uniqueness of life or the complexity of life does not produce that there was a special creation for that form for each individual episode. We’re not saying there wasn’t an original creator. We’re not even entering that argument. What we’re saying is that we do
not believe that every single separate group we have evidence from the fossil record. We have evidence from the sciences of genetics, from observations of natural selection. We don’t...we find direct evidence that every single group was not spontaneously created as it appears today. That is the basic difference. Whether you want to have a single creator who originated scientific processes, fine. I am not going to say there’s the slightest problem with that, but pointing to complexity of life and saying that proves divine creation, it may prove ultimate divine creation but it doesn’t prove that tree, that species, was created directly; that it didn’t evolve to it’s form. And that’s an important difference. Negatives do not prove anything, they just oppose. And later in our discussion if Dr. Gish, no if Dr. Morris and Dr. Slusher bring up and argument, I can’t counter or Bill can’t counter. That means we don’t know the answers. It may be our fault. It does not disprove our science. It means that I don’t know everything. Bill doesn’t know anything...everything, sorry. Really, that’s an awful thing to say. I can’t wait to see what he does when he get’s up. But seriously, it doesn’t disprove our side. It means that is something I might not know. Or that Bill might not know. We don’t claim to know everything there is in the world.
Let me finally conclude with an example of creationists logic. It happened to be in last Sunday's "Ledger Inquire" and it was in the famous philosophical comic strip Winnie the Pooh. In this particular comic strip we find Piglet asking Pooh, "What are we hunting for?," and Pooh replies "Hefalumps." Piglet asks, "How do we really know there are such things as hefalumps because we have never seen them." And Pooh uses the best creationists logic and says, "We have never seen a woozul either." Piglet says, "So," and Pooh concludes, "Well, that proves there are no hefalumps because woozuls lay low when hefalumps are around." Thank you. I'll turn it over to Bill now.

FRAZIER:

I used to know everything, but I forgot it. I would also like to start out by thanking you all for coming out tonight and listening to and later on participating in this debate. I would very much like to thank Mr. Hildebrand and the Edgewood Baptist Church for seeing to the arrangements for tonight's meeting. We very much appreciate the opportunity to bring our side of this debate to you tonight, and we very much appreciate your being here to listen.
David has been...David has been talking with you about some of the evidences for and some of the arguments against some of the major concepts of organic evolution; the evolution of species. Alternate, side of the story is some of the geological evidence that supports the basic idea of evolution. Things for example as the age of the earth, the principles upon which all of these subjects are based such as for example uniformitarianism. I'd like to start out tonight by talking about what uniformitarianism is, and what some of the comments are that have been made by some of the creationists.

Uniformitarianism is basically a very simple, if perhaps, a very long-winded word. It simply means that modern day laws of science presently observable processes and events are maybe assumed to have worked in the same way, in the geologic past. For example, if you can observe water flowing downhill today, you may assume that water flowed downhill in the geologic past. This is because one assumes gravity has always functioned in the same way that it does now. If you, for example, can observe the workings for example of the principles of thermodynamics today, then you may be assured that the principles of thermodynamics have worked in pretty much the same way in the geologic past. And over and over you can bring up most of the modern scientific principles,
theories, and say if they happen this way today, then we assume that they must have been this way in the past. In other words, this is basically essentially the appeal to reason in geology.

The original idea of uniformitarianism was developed about 200 years ago by a Scottish geologist by the name of James Hutton. Hutton believed that the earth is always been pretty much exactly the way it is today with very, very few changes. In fact, he did not even particularly want to talk about beginning of the earth because he believed that everything that the earth is is created in essentially a uniform manner based upon the principles, events, and processes that one sees today. He probably carried it too far because he even said that the rates of geologic processes have always been constant. In fact he believed that there has been no change in the earth whatsoever. Modern geologists of course have had the benefit of 200 years of studies since Hutton's time. We know for example that there are probably periods, there were periods in the earth's past when probably rates of geologic processes were not exactly the same as they are now. If you go back prior to the advent of land plants, for example, you can obviously see that a barren landscape would not undergo erosion and weather and the same manner and at the same rate as it does today. Therefore,
sedimentation rates would have been different in the geologic past prior to the advent of land plants. If you go even further back in geologic time, you can get to a place where apparently there was no oxygen in the atmosphere. There is abundant evidence for this, but I am going to leave the evidence off and just proceed as if I had presented it. If you want to talk about it later I will present you with some of the evidence. The point is that if there is no oxygen in the atmosphere, then many of the fundamental weathering processes that go on in the earth's crust today would not have taken place in quite the same manner. The thing that I'm trying to get at is that the modern view of uniformitarianism allows for different rates of geologic processes in the past in some cases. It allows for events which are not happening today for example, the non-oxygen atmosphere weathering, and it even allows for local catastrophes, which is to say for example, Mount St. Helen's goes off and devastates a local area, and so you have a sedimentary deposit with thousands and thousands and thousands of destroyed logs. Well, the creationists will come up and say, see that's evidence of Noah's flood. All those logs, trees torn down everywhere. But it's not. It's an evidence of a local catastrophe.

Well, what do the creationists say about uniformitarianism? To start off with, they do not accept
it. They waffle a little bit and say well there are some laws that are uniform, there are some laws that are not uniform, but basically they reject the principle of uniformitarianism for the very simple reason that if uniformitarianism is accurate, then the earth must be very, very old because the processes that we see working today by and large are relatively slow. Now they are not all slow. Clearly a storm can deposit a large amount of sediment in a relatively short time. Mount St. Helen's was certainly not a slow geologic process, but the general tendency is for sediments to be relatively slowly deposited, as a general rule. But if that is true, then the earth can't possibly be only ten thousand or twelve thousand or so years old. You see the evolutionists, I mean pardon me, the creationists want the earth to have been formed miraculously, literally in seven days. They want all of the earth's sedimentary deposits to have been formed in approximately a year as a result of Noah's flood, and clearly for that to happen modern day laws of physics and chemistry must have been at least for that moment of time suspended, miraculously.

How do they argue the case? Well, basically, they argue the case by saying geologists don't agree with uniformitarianism. They never specifically come up and state their evidences in favor of the catastrophists view.
They nearly say, "Well, geologists don't believe uniformitarianism." Which is a remarkably interesting...argument. They do it by misquoting geologists right and left. For example in "The Scientific Creations" which Dr. Morris' book on page 93 Dr. Morris quotes Steven Gould who is a very well-known paleontologist at Harvard is saying, "Uniformitarianism is as a descriptive theory has not lifted the test of new data and can no longer be maintained in any strict manner." That I am abstracting slightly from the whole quote. Alright, well, let's see what Gould really said. This is from an article that was written several months later by Gould published in the same journal, published in the Journal of Geologic Education. This was written in 1967. Gould says talking of his earlier article, the article that that quote came from, "I did not suggest as some critics have stated that the concept of evolution is unnecessary..."...but there's abundant evidence, scientific evidence, in favor of the earth's great age. One of the best pieces of evidence is radiometric dating which David mentioned to you a little while ago. Radiometric dating is based on the very sound and firm principle that radioactive elements decay or break down into different elements with time. The rate at which that process takes place is a known and constant geometric
rate. Now this is not exactly debateable. The theory upon which this is based as David mentioned is the same theory that is utilized in nuclear reactors and nuclear bombs and in other kinds of nuclear physics. It is true as the creationists point out that rigid use of radiometric dating requires closed systems, that is to say systems into which no none of the reactants can enter or leave. And indeed, there have been some radiometric dates that have been in error because of some sort of an open system problem, but David showed you the map with all of the various dates on it. The point of that map is very well taken because most of those dates, say 95–98% of them are congruent, which means they agree with each other. Even though these, some of these methods, I mean some of the dates were from different radiometric methods. Even though for example one was from lobidian strondiam, one was from potassium argon, another one might be from lead lead or uranium lead or some other method, and there are many different radiometric techniques. When you apply all of those techniques, you find out that in most cases they agree with each other. Now such high reproducibility means that any open system problems that may exist are very likely negligible. This is not to say they don’t exist, but when you can take different methods and reproduce the evidence, the data, over and over and over
again, not in any random manner but in a very concise and precise manner then that suggests, you see. It suggests that the dating techniques are accurate and when they are also validated as it were, by noticing the position in the stratigraphic sequence from which the samples were taken and by noticing their relationship to the fossils and all of that comes together, to make a single coherent picture then you say to yourselves that's a pretty good dating technique.

Another aspect to the age of the earth has to do with what is referred to as the stratigraphic or the geologic column which is a representation, a graphical representation, of the various layers of rock in the geologic record. I would like to show you a picture of it. I suspect many of you have seen this before in newspapers or magazines or books on the subject of geology or evolution. Each of these names represents a pair or series of rocks and the series is arranged in such a way that the oldest rocks are on the bottom and the youngest rocks are near the top of the column. The geologic column is divided into eons, eras, periods, in facts the periods themselves are subdivided into smaller scale. How is this put together? Alright, I would like to have now the first slide please. Alright, this is probably a very well-known photograph. It's the Grand Canyon. I'd like for you to
look at the sedimentary rocks that make up the Grand Canyon and I would like for you to notice that they are all very nicely layered. They are arranged in sequence with the oldest ones being on the bottom. Naturally, it is very difficult to deposit sediment on top of something that is not there. So each layer is younger than the one beneath it. Alright, you may leave the projector on but let me show you another transparency. This is the geologic column of the Grand Canyon. It is a diagramatic representation of it. Each of these other columns represents a series of layered rocks that occur in other parts of Nevada, Utah, Colorado, and I'm sorry, Arizona and New Mexico. The point is that each of those outcrops reveals a certain part of the geologic section in which there is no question about what rocks are below or above what other rocks. So you go around this four state region and you observe that different places have the same series of rocks but some have a few more on top or a few more on the bottom. So you put them all together and you have literally a complete geologic column from the oldest rocks in the precambrian system or the precambrian era rather at the bottom of the Grand Canyon all the way up to rocks that are relatively young in the tertiary period at the top in the Bryce Canyon region. Now, the point of all of this comes in what the creationists say about the geologic
column. Dr. Gish for example, well I just have the quote here, Dr. Gish says that in his book, "Evolution: The Fossils Say No," says that the geologic column is arranged according to the assumption to evolution and that the rocks with the simplest fossils are put low in the column and the rocks with the most complex fossils are put in the top part of the column and bingo. The evolutionists approved evolution because they arranged the rock layers to suit their needs. Well, this is hogwash. This is a geologic column, same one that I just showed you with the dates. Each of these dates is the dates that these periods were proposed. Right? The cambrian was proposed by Adam Sedgewick in 1835 and each of these other dates shows you the period of time when these periods were proposed and when they were put in their sequence. Okay? They were proposed and sequenced as you can see primarily in the early 1800's. There's really only one up here after 1859. That's the ordifition which is 1879. You see the point of this is that Darwin's book was published in 1859, 20 or 30 or 40 years after these periods were named. They were not set up on the basis of evolution. They were not set up on the basis of the theory of monkeys to men. They were set up on the very reasonable and geometric properties of one sedimentary layer lying on another sedimentary layer. The one on the bottom is the oldest.
The one on the top is the youngest. And that is the basis on which the column is produced. It is not, it is not based on evolution. It turns out that the fossil record within that sequence indeed goes from lower order or more simple to higher order or more complex, but that was an observation made after the column was set up not the other way around.

Alright, I have been talking about the geologists view of the earth. You can bring the house lights up please. Let me talk for a minute about the creationists view of the age of the earth. They say the earth is 10,000 years old. It’s based basically upon scriptural analysis, but since we’re not going to talk about religion in tonight’s debate, we will talk more about their scientific support for that. Well, there isn’t any scientific support for it. What they do is play, what I refer to as hypothesis gymnastics. They take a series of hypotheses and they run them through the loops and they turn around and they show something that didn’t really show. For example, they say that the earth’s magnetic field has decayed since the middle 1800’s, and this is true. There have been measurements made ever since the middle 1800’s by physicists that have shown quite well that the earth’s magnetic field decays in strength from then until now. Well actually it is not a constant decay
it is more of a zig zag type decay but it is still true that it was greater then that it is now. Dr. Morris has made the case that if you assume that the known rate of decay is constant back in the geologic time if you go back more than 10,000 years ago, the strength of the magnetic field is so great that everything would be crushed which of course is ridiculous so therefore the earth must be young. Well of course this completely overlooks the scientific evidence that the earth's magnetic field in fact fluctuates in strength. There is definite proof from the study of magnetic minerals and besalt rock that show that the field strength fluctuates. In fact as I am sure Dr. Slusher knows the earth's magnetic field has periodically reversed it's polarity. But those are scientific details and sometimes the creationists are not really strict about scientific detail anyway. There is a much better argument. You see, they assume what? They assume that the rate of decay of the magnetic field is constant through time. That's uniformitarianism folks. These guys don't believe in it but they assume it. Not only that, that's not only modern uniformitarianism because they are assuming the rate is constant. There's not a modern geologist alive that would make that kind of assumption. But these guys directly after telling you that uniformitarianism doesn't work directly apply it to
their theories. That is what you call very scientific. How much time do I have? Thank you.

Another argument that the creationists use about the earth's age has to do with the sedimentary record and this is, I just checked my time because this is the thing that I can usually lose myself in because my particular field of geology is sedimentology and stratigraphy. Dr. Morris in his book, "Scientific Creationism," has a long series of geologic proofs that the earth's age is very, very young. I just simply don't have the time to go into all of them, but he makes the statement that sedimentary rocks prove that the earth is very, very young. Well, I think it would be very interesting to look at some sediments and some sedimentary rocks and see if we can make any observations about them as to whether or not they reveal the workings of special catastrophes or whether or not they reveal the workings of modern principles of physics and chemistry. So with that introduction let me have the house lights out and the first slide.

This is just a photograph to set the stage. This next series of photographs comes from the outer banks of North Carolina. Next slide please. This is an aerial photograph of one of the outer Banks Islands. What I want you to look at is the sediments in all of these pictures. In this particular one as you probably know if you have
ever been to the beach, the shore zone is the zone where the sediments are very sandy and they have a certain appearance and then if you go back into the main part of the Barrier Island there are sands that are formed in wind-blown dunes, and then if you go back to the other side of the barrier there are marshes and there is a lagoon. Next please. There are also inlets that cut through the barrier sequences and there's a whole series of various types of sandbars and sand scholls and sedimentary features that are very characteristic of what title inlets through barriers are and how one can recognize them. Next please. If you get right down to the beach itself, you can look at the character of the sediment, dig little trenches in the sand and look at the nature of the bedding in the sand. You can go back and look at the sand dunes. Next picture please. This is some sand dune from a barrier island actually in the coast of Georgia, but I would like for you to notice the layering, the cross bedding. It doesn't show up very well. I have to apologize for the slide, but these are wind-blown dunes that have actually pretty well developed cross bedding when you see them on the actual outcrop. Next slide please. Behind the barrier there are marshes. This is a little creek running through a marsh. Next slide. This slide shows the kinds of sediments that occur
in a marsh; very fine, very muddy, very organic rich therefore very dark in color. Alright, these are all recent sediments. There is simply no question as to the fact that they are forming according to the very slow and very definite processes of sedimentation, erosion, and such like. Next slide please. This is some cross bedding in some coastal plain sedimentary rocks that are of cretaceous age which is the last of the three periods of the great dinosaurs. It is almost exactly the same as the kinds of cross bedding features that you saw previously. Next. This is some burrowed sand in another one of these coastal plain units. It is identical to the same kinds of burrowed sands that are found today forming in the low beach zone in place...many years old. Next. These are cross beds river sediments deposited along the banks of the Upitoy Creek just south of here. Next. These are ancient stream sediments again of cretaceous age. As you can see, they are almost identical. Next. Mudcracks in the recent. Next. Mudcracks on ancient rock surfaces. Next. Ripple marks in the recent. Next. Okay, ripples in the ancient rocks. You see what I am trying to show you is that there is an exact correspondence between features of sedimentary rocks that we see today forming and features of ancient sedimentary rocks. That correspondence, that one to one correspondence of
appearance leads you to believe that the possibility exists that they formed in the same way. Now of course, that is an assumption but it is basically the assumption of uniformitarianism that modern events can describe ancient events. Now, Dr. Morris or Dr. Slusher will probably say, "Oh, well this is all very good evidence of Noah's flood." I mean these are water laid deposits. Now the mudcracks aren't but most of the things that I have shown you are associated with some sort of water environment, but when they do that they once again get into the realm of sort of hypothesis gymnastics because as Dr. Morris well knows, he is after all a hydraulic engineer, the nature of sedimentary structures that is formed in a particular type of flow is characteristic of that flow. These kinds of ripples don't just form any old way. In fact, if I may have the next couple of slide please. I am going to go through these quickly. These are a series of different types of ripple marks. Next. I want you to look at the different shapes and sizes. Next. Here are some more different ones. One more. You can leave this on for a minute. This is an ancient rock surface, again with a slightly different type of ripple. Now the point is that very different physical conditions like different depth of water, different velocity of flow, different grain size of the sediments, all of these things combine to alter the
nature of the ripple or other sedimentary structures. You can prove this to yourself just by going out to a creek and looking at the ripples in the creek bed. What you will find is that they will change their shape and they change their geometry in different depths of water and in different places in the stream where the water is flowing more or less rapidly. In other words, you can use the shape of the sedimentary structure to determine something about the nature of the flow in which that sediment was deposited. This is not just wild speculation. Studies have been made in flumes, in laboratories by private concerns, by academic institutions, and by the United States Navy and Coast Guard which demonstrate very conclusively that there is in fact a very good relationship between flow and sedimentary structure. In other words, you don't expect to find ripples like this forming in a flood that lasted one year that covered the entire earth rapidly and was seven and a half miles deep. This is not the kind of ripple that forms in a seven and a half mile deep body of water, and it certainly isn't the kind of ripple that forms in the kind of a flood that these gentlemen envision as carrying huge boulders over thousands of miles.

I am talking longer than I mean to so let me get to the last point very quickly. And that is the principle of
thermodynamics. I'll have to go quickly on this. Basically the creationists say that the second law of thermodynamics says that...you can turn the house lights up if you wish...that all systems go from more complex to less complex. It is only one of the thermodynamic principles, but they don't mention the other two. They mention this one so we will stick to it. It is true that they do that in isolated or closed systems. That is systems in which energy does not go into the system or come out of it. But in open systems the principles of thermodynamics are not rigorously true. One can say that the systems tend to be the way thermodynamics says, but you always have to be careful because a part of the system may be behaving one way and another part may be behaving a different way when you are looking at a closed system, or an open system pardon me. Well the point is that the earth and especially the biologic community on earth is an open system and receives energy constantly from the sun. If you want to see the second law of thermodynamics work what you should do is cut the sunlight off and the entire biologic system on earth will go spontaneously and rapidly to disorder just as the second law states.

Alright, in conclusion, what we have tried to do this evening, David and I both, in addition to showing you some of the evidences in favor of the modern scientific view of
the earth and of evolution is to show you that the creationists have a rather grand disregard for the principles of science; they misuse them; they are selective in their use of them; they use some when they want to and they throw the same principle away when they want to; they are rather cavalier in the way they quote authors, sometimes completely turning the sense of their meanings around; they deliberately misrepresent the opinions and the data of authors. In other words, they are really presenting what is, quite frankly, a very deceptive case to make it sound scientific when it is not. I would like to leave you with this observation. Whether you came tonight representing the creationists side or whether you came tonight representing the evolutionists side or whether you came tonight simply representing the middle, do you believe that that kind of deception is a valid way to support a theory which is basically a religious, a religious concept. Thank you very much.

MODERATOR:

Thank you affirmative side. The affirmative side did go over a couple of minutes so we will allot the negative side a couple of more minutes. Okay. And now we will turn it over to first negative, Dr. Henry Morris.
MORRIS:

Well, thank you. We certainly appreciate the opportunity of being here at Columbus College for this occasion and I want to express our thanks to Dr. Schwinner and Dr. Frazier for willing to participate with us in this discussion, debate, dialogue, whatever you would like to refer it. We are not so much concerned of course to win a "debate" as to win a hearing because for whatever reason it is true that for a long time the creation model as we call it has been in effect banned from the public universities and public schools and other public institutions, and we think that at least everyone deserves to hear the other side. And that is the purpose tonight. Now we don't have, we obviously don't have the time and hour to really cover this subject we just can barely outline some of the considerations. I think you should at least realize this that even though certain gentlemen known, referred to as Dr. Morris and Dr. Gish have been quoted rather freely tonight, we are not the only scientists or creationists. There are literally thousands of scientists today who are creationists. These men come from every field of science and they have studied the issue. They may not have all the answers. We don't have all the answers anymore than the evolutionist does. We think that a two model approach in which both points of
view are continually kept open and studied and evaluated as a prudent and healthy approach in science. Not only are there thousands of scientists who are creationists; most of those like myself once were evolutionists and have been on both sides of the fence; looked at the evidence from both sides, but also of course not only scientists but hundreds of thousands of others as a matter of fact the Gallup poll that was taken a couple of years ago showed that even after generations of evolutionary indoctrination in the schools still more than half of the people in this country believed in a literal Adam and Eve as the first man and woman, the ancestors of the human race, and so there is at least something intuitive that suggests to the people that creation is a viable alternative and this is what we think is a reasonable approach in the schools not to ban evolution. We're against that as much as anyone else would be. We don't want any anti-evolution law passed, but we believe that in a scientific open community that both models ought to be explored and discussed freely.

Now we need to define terms of course and I think probably to some degree these two concepts have already been defined, but let me also illustrate it graphically. I would like to have the first slide if I may and while we are getting that let me also quote from an evolutionist
who is a very prominent evolutionists who does agree that evolution is not a proved fact of science. We can discuss the scientific method and the difference between theories and hypotheses and models and so on, but the question of whether or not evolution is a theory in the sense that it is supported by laws and an abundance of observations with no difficulties and is not still and open question we think is premature. This is the evolution model in a generalized sense. The idea as time goes on the degree of order or complexity or information in the universe increases from primeval particals say back billions of years ago up to complex molecules and into stars and planets finally on this planet perhaps several billion years ago complex chemicals became replicating chemicals and life began and then more complex forms of life and finally human life and who knows what in the future. That's basically the idea of evolution that we can explain the origin and development of all things including the most complex systems that we have in this complex universe today by natural processes in a self contained universe. Creation model on the other hand, next slide, is the opposite. Creation model postulates that the complex structure of this universe cannot be explained in terms of natural processes that are still going on today and therefore not observable today. Therefore a Creator is
postulated transient to the universe, not saying who or what or anything else about the Creator in terms of the scientific model just a Creator able to create the complex universe and that Creator would create it perfect for his purposes and all the different systems, and then if there are any vertical changes as time goes on, that is net vertical changes, they will be downward because the Creator would make things perfect for their purpose to begin with and so you cannot improve perfection so any changes, net changes that is, would be downward. So that basically the evolution model would expect to find a principle of what you might call innovation in nature, integration, things developing into higher complexity. Creationists would expect to find a principle in the opposite direction towards decreasing complexity and towards disorder. Let me have the lights again.

I wanted to quote from Dr. Paul Erlich of Stanford, one of the leading evolutionary biologists of our day, and he points this out and I'm not quoting a creationist understand, and I am not misquoting, I'm not quoting out of context. This is his thought. He says, "Our theory of evolution has become one which cannot be refuted by any possible observations. Every conceivable observation can be fitted into it." At first you would think well that makes it a good theory. No, that is what makes it a bad
theory. In other words, it is so broad and so flexible that no matter what you see you can explain it by evolution. There is no way to determine whether evolution is true or false because no matter what you see you can explain it by evolution. Now the same thing exactly is true of creation and we will admit that. Therefore, neither one is really ultimately accessible to the scientific method for confirmation or falsification. The best we can do is use models and then see which model does the best job of correlating and predicting data. We believe the creation model does, but at least we do acknowledge you cannot prove creation but certainly you cannot prove evolution in the ultimate sense. Dr. Erlich goes on to say, evolution is thus outside of empirical science though not necessarily false. No one can think of ways in which to test it. Ideas either without basis or based on a few laboratory experiments carried out in the extremely simplified systems have obtained currency far beyond their validity. They have become part of an evolutionary dogma except of the most of us is part of our training. Evolution, he says, is a dogma. Dr. Cora Pauper, probably the world's leading philosopher of science says it's a, says Darwinism is a metaphysical research program. It's fine for that but it is metaphysics, it is a dogma. Dr. L. Harris and Matthews in
the forward to the 1971 edition of Darwin's "Origin of Species," of course this edition was not revised by Darwin but it did have a new forward written by a current leader, Dr. Mathews is a fellow of the Royal Society in England, prominent biologist, and he says this, belief in the theory of evolution is thus exactly parallel to belief in special creation. Both are concepts which believers know to be true; neither up to the present is capable of proof. And then he says this, the theory of evolution is plausible and most biologists accept it as though it were a proven fact. It forms a satisfactory faith on which to base our interpretation of nature. Okay, but evolution is a faith, it's a dogma, so is creation. They cannot be tested in the ultimate sense and therefore we ought to keep the subject open. Instead of having the closed system that we have had in our schools for so long teaching only the one model, which is based on a naturalistic universe. Now, if we define the two models in some such way as this, evolution trying to explain the origin and development of all things in terms of continuing natural processes from primeval simplicity to present complexity creation model going in the other direction, then at least we ought to be able to test them to the extent that we can see where they are, which one of these two principles seems to be operating in nature. Do
we see things evolving into higher forms as we should if evolution is true? Can we see dogs evolving into horses, say? Or frogs into princes? Or anything like that? Can we see one type of organism developing into a higher kind? If we could, of course, the creationists would immediately sit down and be quiet because evolution would be visible before our eyes and we couldn’t argue. Science is what you see. Science means knowledge and if we could see it take place in this way, why of course we would have to accept it. But of course, the answer to that is that evolution goes slowly and maybe so, but now it immediately becomes outside the scope of science, you see because we cannot test something, we cannot observe something that takes a million years to produce a real vertical change or increase in complexity. As a matter of fact, all of the real changes that we see in the present order of things are exactly what the creation model predicts. People like to say the creation model doesn’t make any predictions. It certainly does. We find exactly what we expect to see in terms of creation. The creator would make basic, distinct kinds of organisms, whether these are the species or the genera, we don’t know any more than the evolutionists knows exactly what a species or genera are, but a distinct kind of organism within which horizontal change can take place and many varieties in order to
enable the organism to adapt to different environments without becoming extinct. The peppered moth can change its color from light to dark, for example. It is still the same species of moth, and so on. This kind of horizontal change is exactly what the creation model predicts directly, but it also predicts that never will you find one kind becoming a different kind at a different level of complexity, different level of information, particularly not from one level to a higher level as must be true if evolution has really taken place in the past, if we really have gone from one-celled organisms to human beings or from particles to people. My colleague, Dr. Gish likes to say from fish to Gish. If that sort of thing has really happened, then there must be something in nature that makes things go from simple systems to complex systems, and we don’t see it in the present world. What few vertical changes we do see, mutation, say, extinctions, things of that sort are harmful as the creation model predicts downward changes, not upward. Now we think that the reason for this is because there is a basic law operating in all systems in the present world which specifies or rather describes the fact that systems do tend to go from order to disorder. We do not see a law operating the present world that makes systems go from low order to higher order as we would expect to see if
evolution is true. What we see is exactly what the creation model predicts. Creation model does predict not only the second law of thermodynamics but the first law of thermodynamics, that is the law of conservation of quantity decay of quality. The kinds are conserved therefore they can adapt to different environments without becoming extinct within limits, but the order tends to go, that is if there are any vertical changes, tends to go toward disorder. That is what we see operating in terms of the second law of thermodynamics. Now this has already been defined so I don't need to stop and define the second law of thermodynamics. It is expressed in many different ways and you can express it in either a very simple qualitative sort of fashion or in many different complex mathematical descriptions, but generally order tends to go to disorder, available energy tends to become unavailable, information tends to become garbled, the concept can be applied to all sorts of different sciences. As a matter of fact, it is a universal principle to which no exception has ever been found. If there is such a thing as a law of science, this is it along with the first law.

Conservation of quantity, decay of quality. This is what the creation model predicts. This is what we see in every system we know anything about in the real world. Now the answer to this, the evolutionists will say is that the
laws of thermodynamics, particularly the second law, only applies in a closed system and the earth is an open system. May I have the next slide now please.

This is a statement taken from Dr. Harold Blum, who is certainly not a creationist, a Princeton biochemist, and he is describing the second law of thermodynamics. He says, its one of its consequences that all real processes go irreversibly. Any given process in this universe is accompanied by a change in magnitude of a quantity called the entropy. The entropy also measures the randomness or the lack of orderness of the system. The greater the randomness, the greater the entropy. All real processes, this is the universal law, no exception is known. Dr. Blum was writing to his fellow evolutionary biologists who have convinced them that it applies in biology as well as chemistry and physics and so on. It applies in biological systems as well as any other kind of systems. Now that doesn’t mean that in a certain open system there cannot be an increase of order. No creationist have ever said anything like that. We are always quoted that way, but nobody ever said that. In an open system if the conditions necessary are present, you can have an increase of order. A good example would be a seed growing up into a tree with lots of seeds in it or a pile of bricks growing up into a building or an embryo growing up into an
adult organism. Lots of examples of open systems increasing in order. But now it is true as it has been recognized already that in every system there is a tendency even if it is an open system, a tendency to go from order to disorder, and so in order to hold it in equilibrium or maybe to even push it up to a higher degree of order, additional considerations, criteria have to be satisfied. It is not simply enough to have an open system. Matter of fact, in the real world there is no such thing as a closed system. A closed system is a circle you draw on a blackboard, but it doesn't exist in the real world. Every system is an open system including the earth system, and every system ultimately is open to the energy from the sun. The earth is open to the energy from the sun and every system on the earth gets its energy ultimately from the sun except the earth's structure itself, maybe the matter, the atomic structure. Everything else gets its energy either directly or indirectly from the sun so every system is an open system and open either directly or indirectly to the energy from the sun. And so to say that says nothing. It isn't true of everything. So it has no specific information. It is a vacuous statement simply to say that the earth is an open system and therefore evolution; there is not problem with evolution. Remember now in every system there is a
tendency to go from order to disorder unless certain things are applied to it, it is true that you have to have an open system in order to have an increase of order and you have to have available energy. Those are necessary conditions but those are not sufficient conditions. Now the next slide will kind of illustrate this. Here we have say a closed system and I have tried to illustrate this kind of crudely I guess by time one and time two. And at time one inside of this system there is a certain degree of order represented by those hexagons. And then anybody would agree that within a closed system as you let time, as time goes on that the closed system tends to go toward disorder, that is the entropy in the system or of the system tends to increase and so it would break up into less order in a closed system, and I suppose you open that system up. If you just open it up to energy from outside is that going to be sufficient to increase the order in that system? Of course not. In fact if you want to call this the earth, okay, and let the earth be open to energy from the sun. Now the next slide shows what would happen. In other words if you know the equation to thermodynamics, you know that if you have an open system into which there is a flow of heat such as from the sun say, a flow of heat from an external source into the open system, that increases the entropy of that system much more than it
would if it were a closed system. In other words it breaks it up into disorder more rapidly than it would be if it were a closed system. So just having an open system doesn’t do you any good at all. In fact it hurts it. And that is what would happen back in that primeval soup that has been postulated in the supposed reducing atmosphere back four billion years ago if the sun’s energy had just bathed the chemicals in that soup and there had been a tendency for any of them to become a little more complex the sun’s energy would have broke them down into simpler chemicals. It wouldn’t have built them up into living systems at all. Now that isn’t enough in other words. You have got to have more than just that.

The next slide shows the conditions that would have to be satisfied. Well these are the two necessary conditions, open system and available energy, but then that isn’t enough because that is true of every system. And certainly not every system increases in order, most of them don’t. The next slide shows another condition that has to be satisfied. There must be some kind of program either in that system or accessible to that system to direct its growth or if it isn’t, if there isn’t you won’t get any growth. Now in the seed for example there is a marvelous complex information program called a DNA molecule and the genetic code and all the other complex
information programs in the living cell and mechanisms and programs just don't generate themselves randomly. They have to be designed. Now you have got all of these complex information systems to direct the growth, the raw energy of the sun comes into the seed and somehow then it is directed by the DNA molecule and the genetic code to become a plant, and the same thing is true with any other kind of a system that we know about in which there is an increase of order in the open system. But even that isn't enough. The next slide shows another condition that has to be satisfied. There must be some kind of a program or combination of programs, some sort of a membrane or motor or something to take the raw energy which is destructive and store it and convert it and then give it out in just the right way and time to do the very specific complex work required to build up the complex structure. The case of the seed you have got the marvelous mechanism of photosynthesis which takes the raw energy from the sun and converts it to a very complex chain of processes which are not understood even yet in spite of all the research been done on them and builds up then the structure of the plant. In the case of the building you have got the blueprints as the code, you have got the muscle of the work men and the electrical machinery and all else to take the sun's energy and goes through all kinds of indirect
processes until finally you get the specific work needed to build the structure. Now in other words you have to have a code and a mechanism in addition to an open system and an available source of energy or you will not get any growth, order in that system. And the question is in the most complex growth system of all that is the evolutionary growth of the biosphere and the space time continuum which is our universe, after all this is all the same because it came from a common ancestor so it is all one big continuum in a space-time frame, and the degree of information in that system has tremendously increased over the ages and the complexity is built up over the ages. Now in order for that to be true there must be a program to direct that growth in some kind of a marvelous conversion mechanism to energize that growth getting the energy from the sun and converting it and then besides that the sun's got to get its information somewhere too, or else you won't get any growth. And so far the evolutionist does not have the answer to this question. Now may I have the lights please. Maybe some day evolutionists will be able to resolve this very obvious conflict between evolution and entropy. They haven't begun to do it yet. Some people have tried and Dr. Prigisene, for example, even got a Nobel Prize for suggesting a way that this might be done in the future, but he certainly did not solve the problem.
It is far from being solved. Maybe someday though it will be solved and evolution will be, the evolutionary model will be able to accommodate the second law of thermodynamics in its system. Even though it won't be as good as the creation model. Creation model doesn't have to explain or accommodate the second law, the creation model predicts the second law. That is exactly what you would expect to find throughout the world if creation is true, and that is exactly what we do find. Now that has to do with the present and it could be conceivable made but in the geological past the laws might have been different. Now creationists do believe in uniformitarianism of laws, natural laws, even through the flood period. At least back into the creation period when the laws themselves weren't bad. We do believe in uniformitarian laws and of many rates within limits of course, but maybe the laws were different in the past so that the second law of thermodynamics did not pose a problem to evolution in the past. Now what do we have to look at the past with? How can we determine what happened in past time before the beginning of written records? Remember history in the form of written records only goes back a few thousand years. That's all we have to really go on and rely on. And the various other geologic structures and particularly in the fossil contents of
those rocks, and so this gives us clues to the different forms of life that once live, also may give us clues as to how those forms of life died and were buried because obviously they are dead things buried in the rocks and so we can get some information about that. Well now if evolution, if the evolutionary model is correct then we would expect of course to find a lot of these transitional forms. Maybe not multiplied hundreds of millions of them as maybe was suggested but at least there ought to be some. In other words, there have been billions of fossils documented out in California for example in the mild scene shields out there is a formation of four square miles shield formation which they have calculated they have four billion fossil haring. Lots of fossils have been found. Lots of fossil of one kind have been found, but no intermediate forms between basic kinds. Now this has been questioned so let me just, I don't expect you to really take my word on this but let me at least read what some others have said about it. Dr. David Kitch, professor of geology, philosophy of geology at the University of Oklahoma, a man with whom we had a debate a few years ago, says this, "Evolution in the sense that Darwin speaks of it cannot be detected within the lifetime of a single observer." Well, of course that is what we said, just said. You cannot see evolution take place, science is
what you see. You can't see evolution so it is more

science than creation is. Neither one of them can be
proved, but both of them can be considered as scientific
models within which you try to correlate and predict data.

But then he goes on and talks about the past and he says,
despite the bright promise that paleontology provides a
means of 'seeing evolution', it has presented some nasty
difficulties for evolutionists the most notorious of which
is the presence of gaps in the fossil record. Evolution
requires intermediate forms between species and
paleontology does not provide them. The gaps must
therefore be a consistent feature of the record. Now we
don't have the time of course to go through the entire
geological column. Dr. Gish has done this in his book
"Evolution: The Fossils Say No" which was referred to
frequently and we appreciate the publicity for the book,
maybe you would like to buy it and read it for yourself.

Just a few of the high points, now there, it may be true
that there have been some, many, probably true that many
protozoan fossils have been found in precambrian rocks.

When Dr. Gish said there were no undisputed multicellular
fossils in precambrian rocks he was quoting Dr. Preston
Cloud, who is one of the leading paleontologists,
micropaleontologists of the precambrian, and Dr. Cloud has
changed his mind on that since that was quoted, and he now
says there might be a few. At any rate, let's say there are a few one-celled organisms and maybe some questionable many-celled organisms. But there's still the basic problem still exists that between the questionable organisms of the precambrian and then the tremendous proliferation of an abundance of all sorts of complex multicellular organisms in the cambrian, the next theological age up is still unresolved. Now let me quote again from two leading geologists, Dr. Moris Elkay and Dr. Edwin Colbert, in their book "Stegritry in Life Histoy." They are talking about that, they say the introduction of a variety of organisms in the early cambrian, including such complex forms of the arthropods as the trilobites is surprising. The introduction of abundant organisms in the record wouldn't be so surprising if they were simple. Why should such complex organic forms be in rocks about 600 million years old and be absent or unrecognized in the records of the preceding 2 billion years. If there has been evolution of life, the absence of the requisite fossils in the rocks older than the cambrian is puzzling. Usually it is explained maybe because they were soft-bodied organisms and the soft parts did not get preserved or something. But there must have been tremendous transitional series in there to lead up to all the different phyla and kinds of the, of the invertebrates and
the cambrian. But when we go from the invertebrate to the vertebrate we find another great gap. There is a tremendous change that has to take place to evolve in invertebrate organisms whether it is a worm or tilobite or whatever it might be into a vertebrate such as a fish or some other marine vertebrate maybe, but no transition between the vertebrates and invertebrates has been found. And as I go on up the scale from the fish to the amphibian, from the amphibian to the reptile, from the reptile to the bird and to the mammal, and from the common ancestor of ape and man to man. Again, a tremendous absence of intermediate forms. Well it is suggested of course that archaeopteryx was a classic example of an intermediate form between the bird and the reptile, that it just the fact that it had feathers didn’t prove it was a bird, for example. Let me quote Dr. Carl Dunbar of Yale who says concerning archaeopteryx, "Because of its feathers it is distinctly to be classed as a bird." Now as to whether it had wings or hands it used to be said that archaeopteryx couldn’t apply with so primitive that its wings were not sufficiently developed yet to permit it to fly, more recent studies on the aerodynamics of the wing structure of archaeopteryx particularly the feathers have shown that it was a not only a flyer but and unusually strong and good flyer. If you want to put
on this, feathers of archaeopteryx by Producia and Tordoff asymmetric veins indicate aerodynamic functions *Science Magazine*, March 9, 1979. The shape and general proportion of the wing and wing feathers in archaeopteryx are essentially like those of modern birds, and I won’t go into that any further but if you want further you can look that up. But now of course the whole question has become sort of academic because now what fossils or what is acknowledged to be true birds, not the ancestors of birds, the intermediates between birds and reptiles, but true birds have been found in the geararic strata of the same age as archaeopteryx. This is in *Science*, January 20, 1978. The oldest fossil bird arrival for archaeopteryx, where archaeopteryx is generally considered the earliest bird on record or recent find suggest the creature has lived some 300,030 million years ago may not have been the only bird alive then and so on and so on. And then it talks about the fossils. It says the fossil resembles the five bone of modern birds more closely than the comparable archaeopteryx bone does. Now whatever archaeopteryx is, it isn’t the ancestor of the modern bird because the modern birds are as old as it is so therefore we do not have an intermediate between the reptile and the bird found in the fossils yet. But then when we go on further and get to the most recent arrival, that is man, now here
of course we ought to have the best fossil record because this is the most recent of all and other remains might have been washed away or destroyed or something, but we ought to have the best record of man because that is the most recent. So whatever the ancestor of man may have been, it may not have been the ape, although George Gaylord Simpson did say that if we could find that common ancestor of man and the ape you would probably call him an ape. So whatever he was, at any rate it was some kind of common ancestor between man and the ape and man and the monkey, maybe the leanier or the torcier or something else might have been the ancestor. Whatever it is there is no intermediates. Now there has been a whole series of intermediates postulated from Ramapithecus to Australopithecus and so on up to Neanderthol, but you should at least realize that these are still very much an object of discussion and controversy and continual rethinking by evolutionary anthropologists themselves. Now back when I was going to school, which I know was back in the dark ages, but I was told that there were three proofs that human evolution. One was Pithecanthropus, the Piltdown man, I mean the Piltdown man; Eoanthropus; Pithecanthropus, the Java Man; Sinanthropus, the Peking Man. Now all of those three are more or less not in favor anymore. Now we have Australopithicus and Romapithecus.
only recently Romapithecus has been discarded and let me just quote from Dr. Pelbean who was one of the chief advocates of romapithecus as an ancestor of man, and he says this after acknowledging that he had to change his whole viewpoint. He says, "Perhaps generations of students of human evolution, including myself, have been flailing about in the dark. Our data base is too sparse, too slippery for it to able to mold our theories. The theories are more statements about us and our ideology than about our past." As far as Australopithecus is concerned now this is accepted by more people, the Leakies, Johanson and others made a great deal of study of Australopithecus found a good many fossils, primarily dental remains but also some limb bones, but those that have made the most detailed study of all of the measurements and characteristics of all of the fossil data concerning Australopithecus do not accept Australopithecus as a link in the line leading to man. Here for example, Dr. Charles Oxnard who is a university professor of biological science and anatomy at the University of Southern California dealing with the graduate school there, who was one of the team of Lord Zuckerman in England who devoted years to the detailed and multivarious statistical analysis Australopithecus and all these fossil remains as well as man and the chimpanzee and other modern
primates, and he says in the...let us return to our original problem the australopithecine fossils the new investigations suggest that the fossil fragments are usually uniquely different from any living form when they do have similarities with living species. They are often as not reminiscent of the orangutan. It is far more likely that genus homo is much older than currently believed and that the Australopithecus of old of Eoanthropus represent only parallel evolutionary remnants. It is really somewhat unlikely that Australopithecus who have been hailed as human ancestors can actually have very much to do with the direct human pathway. And then he talks about the remains in the past that have been propagated and then abandoned such as hesperopitheus, the ape of the west used in the Scopes trial as a link between man and the ape later turned out to be in the, it was one tooth was all it was when the complete skeleton was found, found out to be an extinct pig, extinct peccary, our Piltdown man which was found to be a hoax and so on. So he says you better take caution about these rapid conclusions based on a very few fragmentary bones. And Dr. Zuckerman, Lord Zuckerman, Sally Zuckerman, in his book man certainly, these men are evolutionists understand, but the man certainly very familiar with all the evidence particularly about australopithecus said
this, he said, "If man evolved from some ape-like creature, he did so without leaving any fossil traces of the steps of that transformation. And man is supposed to be the most recent evolutionary rival. Well, I must close but let me just summarize about what Dr. David Raup says and Dr. Steven J. Gould. Dr. Raup who is curator of geology at the Field Museum of Natural History in Chicago and one of the leading younger paleontologists says this about the whole fossil record, the fossil record is a whole, he says, "Instead of finding the gradual unfolding of life what geologists of Darwin's time and geologists of the present day actually find is a highly uneven and jerky record that his species appeared in the sequence very suddenly, show little or no change during their existence in the record then abruptly go out of the record. And it is not always clear, in fact it is rarely clear that the descendents were any better adapted than their predecessors." In other words biological improvement is hard to find. And of course he and Dr. Gould and a number of other men are now beginning to develop what they call a new theory of evolution based on the concept of punctuated equilibrium rather than neo-Darwinism as slow and gradual evolution but mutation and natural selection. Evolution takes place sort of in quantum jumps by this and they are forced to that because of these universal gaps in the
fossil record. Dr. Gould in an article in *Paleobiology* in 1980, and by the way I did not misquote or misrepresent Dr. Gould we are often accused of misquoting and misrepresenting, we have never said, suggested that Dr. Gould was a creationist in any respect whatever. He is a thorough going convinced evolutionist. He is not a Darwinian. He is more or less giving up that concept of evolution in favor of his own new theory, but he is certainly an evolutionist, in fact he is a humanistic, and I am not telling secrets, he himself claims to be a Marxist evolutionist. No question that he is an evolutionist. So I have never accused him of that, of being a creationist and neither has Dr. Parker or anybody else. He has advocated a return to catastrophism. Many articles not only the one which was quoted which was referring to catastrophism versus uniformitarianism had nothing to do with evolution or creation, but he had advocated a return to catastrophism in terms of catastrophism of rates, not laws. There is a difference between substantive and methodological catastrophism, he makes that distinction. One must, let me just read what he says about..."Is a new and general theory of evolution emerging." He says, "Thus our model of punctuated equilibrium holds that evolution is concentrated in events of speciation and that successful speciation is an
infrequent event punctuating the stasis of large populations that do not alter in fundamental ways during the millions of years that they endure. Now punctuated equilibrium simply means that populations stay more or less the same for a long time but then because of some special consideration a boot gets isolated or something, you have rapid evolution take place in a very short period geologically and then there is a new equilibrium so that the intermediate forms is so rare that they don’t get preserved. Maybe that is true. You see this isn’t arguing from evidence. This is from lack of evidence. It would be a lot better proof of evolution if you could find the intermediate forms, but you don’t find the so therefore you say evolution took place rapidly. It seems like to us what they are saying is, and I don’t mean to be facetious here, but this does seem like what it is, you can’t see evolution take place in the present world because evolution goes too slow for you to see. You can’t see it in the record of the past world because evolution went to fast for you to see. At any rate you don’t see anywhere any evidence of evolution.

SLUSHER:

Well thank you very much. I have figured out I would get a bit cross-eyed looking at that thing sitting out
there the whole time if I tried to lecture with that in
the way. It is a pleasure to be on the campus of Columbus
College tonight. I bring you greetings from the campus of
the University of Texas at El Paso. I left my students
with exams there today so I could be here tonight, and it
is certainly an honor to be invited to this debate and
certainly a pleasure too. And I have some things to say
tonight in regard to this discussion. Now I am an
astronomer and geophysicist in the work that I do and the
courses that I teach and so tonight and for my lecture I
am going to work along those lines. The evolutionist
since the statement of you know what the debate was about
was that evolution was a better explanation for things, a
superior model than creation. I have heard very little
about that. I have heard a lot about errors and this and
that that everybody keeps making, but I have heard very
little about evolution supposed to being a better model,
but I am going to present the contrast between the two
models as an astronomer would look at it. Then I want to
take a look at the evolutionist explanation from the
viewpoint of astronomy for the present universe that we
have. Then I would like to take a look at the time
question which is I believe the achilles heal of the
evolutionary concept.
Some years ago the late Harlow Shaply who was long time professor of astronomy at Harvard University made this remark, and I would like to quote Shaply because he and I both studied the same star in doing our thesis. We both worked on the eclipsing binary star, Usysigmy, at two different schools. He did it at Princeton and I did it at the University of Oklahoma. Before you smile too much it is obvious which is the superior of those two schools. Anytime a...in football that Oklahoma could beat the Princeton varsity and obviously that sets the intellectual climate without the slightest doubt in regards of the whole thing. But anyway, we both studied the same star and therefore I would like to quote Shaply because he represents very well what the evolutionist has to say in regards to the origin, the universe, and in regard to what has happened in this universe. Shaply made this statement. He made this in a public lecture which I heard once upon a time, and he also made this in an essay in adventures in earth science. He said, "Some people very piously record in the beginning God," yes, you may copy that. Good. Maybe you can find it right there it will do you a bit of good to read that statement. He made the statement, "Some people are very piously record in the beginning God, but I say in the beginning hydrogen." He said if we held the physical laws such as law of gravity,
the conservation laws dealing with momentum and energy, the various chemical laws, we can explain this universe in all its details without any recourse to myths and fables about a God or gods creating this universe. As I say I was in the lecture in the audience when Shaply made that statement in a public lecture and I wished some fellow in the audience asked him this question when it was over. He said Dr. Shaply, you said if you held the hydrogen and you held the physical laws you can explain the universe in all its details. He said I would like to ask you this, looking at this from the viewpoint of a physicist we don’t see matter and energy popping into existence from nothing. That is the first law of thermodynamics, by the way, which also creationists do mention quite often and I mention it everyday in my classes in astronomy and geophysics, but he said we don’t see matter and energy popping into existence so the first question I would like to ask you, where did the hydrogen come from. And in the second since physical laws seem to indicate reasoning and thinking and the forming of concepts and intelligence, he said I would like to ask where the physical laws themselves came. Shaply, who didn’t, wasn’t used to being questioned from the audience in such an impertinent manner turned a bit red in the face and he said that is a very unfair question. He said you just have to start with that. Assume that and go
from there. An apple for a fellow who said he was going to explain the universe in all its details and he said it rather pompously. He got off to a bit of a bad start. Dr. Frazier, you have such theatric ability I must borrow from you. Very scientific. I have been very impressed with that. Very scientific. Here was the man who said he was going to explain it all and yet he can't even explain what is necessary at the very beginning of the whole thing. Well, Shaply would say, to sum it up, that the universe is an isolated system but there is nothing outside it. There is an old popular song he used to say is that all there is. Shaply would say yes this is all there is. It is this universe. It is an isolated system and we can explain it in terms of itself, its origin, its past history, and its present in terms of itself. Shaply would say that this is a universe that developed from a chaotic state of a hydrogen cloud to the very complicated universe that you see around you. A universe made up of stars, clusters of stars, galaxies, clusters of galaxies, with extremely complicated motions, with extremely complicated processes involving the generation of energy and extremely complicated processes involving the transmission of energy from one place in the universe to another place in the universe. Shaply would say that this is something that happened by chance, by the random
action, by irrational processes in which the physical forces interacted with the matter energy to produce stars, to produce galaxies, to produce clusters of stars, and clusters of galaxy. And he would say all of this happened by chance, nearly the interaction of physical forces with matter and energy and you have got your universe out of it. Shaply would say that it is ever a development upward. It is not a movement downward. Stars are coming into existence. Galaxies are coming into existence. Clusters are coming into existence. Everything is developing ever upward. And if we look at the sky we would see things becoming more complicated. We would see more information in the system. We would see greater complexity. We would see greater form, greater body, more complication as time progresses. And if Shaply were here and if he were still around, I think he would agree to this last thing that I would add to what Shaply had to say. Shaply would say that this a universe that is very, very old because chance processes involve as the information theory engineer would put it, low intelligence. Chance involves low intelligence. Low intelligence takes what? A long time to do anything and if you are going to depend on the universe to in its present form to have come into existence by chance, it is something that takes a long, long, long time, and it would
take billions of years; the age of the universe 15-20 billion years, presumably, the age of the solar system 4.5 billion years maybe 5.5 billion give or take a few. It really doesn’t make much difference after the first billion, but anyway it takes a long, long time. Now the creationists position is contradictory to that. The creationist position would say in the first place matter and energy don’t pop into existence from nothing, that the system of matter and energy was created by being outside it all and in the second place since we do not on the basis of any kind of observations see systems ordering themselves and becoming very complicated and gaining information within themselves without some mechanism to produce it. The order and the complexity and the form and the body and the arrangements and the motions, the very complicated motions would have to be put in from the outside. One has never seen the star form from a hydrogen cloud by gravitational collapse. One has never seen a cluster of galaxies by observational evidence form. One has seen the very opposite. We have seen galaxies collide. We have seen stars that explode. We have seen comets being destroyed as they swim around the sun. We see the earth slowing down in it’s rotation. We see things growing older. We see things dying. We see things running down. We do not on the basis of scientific
observation see stars popping into existence. We do not see clusters of galaxies coming into existence. We do not see any of these things that the evolutionists in his Alice Wonderland type world that he talks about in that topsy turvy sort of thing that has nothing whatsoever to do with reality. We don’t see what he claims to profess to see. Observational astronomy says we have a universe that is running down. And that is exactly what we observe. We see matters shoot out of stars forming planetary nebula. We see super nova and nova. We see galaxies colliding. We see clusters tending to break up, clusters of galaxies, clusters of stars. We see exactly the opposite of what the evolutionists talk about. Now if we are going to talk on the basis of scientific evidence and not wishful thinking and some sort of pie in the sky by and by and let’s stand by and hope we win a few, and we are not going to lose them all, then when you get down to real observation, you do not see at all what the evolutionist is talking about. And I challenge my worthy opponents to show me one example in the stillery universe of formation of order and complexity in an increase of information in it. Now if it is a scientific matter what evolutionists are talking about, let’s put up, or as they say in science, shut up in regard to the matter.
Well, it is proposed today that the universe came into existence by the explosion of a primordial atom. Oh my goodness. I must watch this time. Time keeper, keep an eye on me to warn me when it is getting late. I have got a lot to talk about. I hope he reset his watch. I am hoping that somehow it will drag along. Well, anyhow, let's take a look at the evolutionists explanation of the universe. The so called big bang. The big bang says that once upon a time, I know it starts like a fairy tale but it is nature myth, there are no observations for it, and you talk about science. Science is based on observations. I look at it as a physicist does. Experiment, observation, and that sort of thing. Once upon a time there was a cosmic egg or primordial atom or primeval atom in which all of the matter and energy in the invisible universe was concentrated. This primordial atom was no larger than an electron in volume. Therefore it had an infinite density and had an infinite temperature. And somehow or other it sat there who knows how long, maybe for a little while maybe for an eternity who knows, very scientific this work, but anyway it sat there and finally an instability developed in it. And when that instability developed in it, it exploded. And when it exploded two things were produced, elementary particles and photons. The radiation, the photons were coupled with the
elementary particles. The elementary particles you know from your quantum mechanics, directs fuel theory of quantum mechanics, says that elementary particles are particles and antiparticles, matter and antimatter. They were produced in the explosion. They were coupled with radiation. All sorts of reactions took place in which the matter and the antimatter tend to annihilate itself producing only photons or radiation. That is one of the first or second objections one can lodge against the big bang. If elementary particles produced matter and antimatter, they nod at each other when they get close to each other. Get up next to a little bit of antimatter and it’s good bye matter. It is good bye Charlie. You know and so if elementary particles were produced in that explosion the first question arises how in the world did it keep from destroying itself right back to radiation because for every particle there has to be an antiparticle. At least that is what everybody believes in quantum mechanics. And by the way, one other objection I might lodge there if there was ever a black hole, that original cosmic egg was the black hole of all black holes because it was a volume no larger presumably than the volume of an electron with all of the matter in the universe in radiation concentrated in it. It had an infinite self-gravitation. How do you break up on a
materialistic basis or a naturalistic basis. How do you get a force that is larger than an infinite force because as Skip Thorne at Cal Tech puts it the original density of the cosmic egg was in infinite in size. It was infinite size, the volume was infinitesimal, therefore you have to have an infinite self-gravitation for it. My students, you know nobody even knows if there are such things as black holes, I tell my students know one knows and they think I have insulted their mothers when I tell them that. But if there ever was a black hole, that was it. How would you explode the thing. Secondly, did you produce particles and antiparticles? How does it keep from destroying itself? But anyway, for the purpose of fending issue out my lecture at this debate and in participating the rest of it, I will go on with the story. I have said enough already, but anyway, if you go on with it presumably through reactions finally the particles and antiparticles destroy themselves essentially producing those electrons and protons. And after a while the electrons and the protons through electrostatic attraction got together forming hydrogen particles. You had a rapidly expanding cloud of hydrogen moving in all directions, moving uniformly they said, and I am not putting words in their mouth, no false words in their own mouths, just pick up Martin Horowitz's Astrophysical
Concepts, he states it plainly. It is publicly library, no skeletons in the closet here. No closet, well big bangers in this business. Alright you have got a rapidly expanding cloud in all directions, uniform density, uniform motions, no angular momentum only radio momentum, uniform temperatures everywhere. A uniform cloud with no temperature radiance in it and those are the words of the big band people, not mine. I just borrowed from them in order to further my lecture tonight. Thing expands at tremendously high speeds, not at the speed of light but at tremendously high speeds, and the radiation has already decoupled from the matter and presumably the radiation is zoomed on out, who knows where to infinity and of course there should be no background radiation because it is decoupled from the matter and it can't be around. But anyway there she goes.

So the first question rises, the proof from the big bang presumably is the red shift of the light from the galaxies, and presumably the universe is expanding. But the real universe that we have is a universe made up of galaxies. How do you jump all the way from a hydrogen cloud expanding uniformly in all directions with a uniform density, no temperature of radiance, no rotational motion, only radial motion from the point of explosion. How do you get stars and galaxies because the real universe is
stars and galaxies not hydrogen clouds expanding. Well
the first matter proposed, it was the Belgian, George
Lemader. Lemader said self gravity of the expanding cloud
brought it to a stop and he said when it stops it will
condensation a new cap condensation developed here and
there, got to have a lot of them by the way, a hundred
billion stars in the typical galaxy, a thousand typical
galaxies in this universe presumably. That’s a lot of
stars multiplied out into the 13 times 10 to the 11 and so
forth, 10 to the 24 stars. You have got to have a lot of
those nucleot condensations develop. And he says you
have got your, the whole came to a stop, you have got your
stars and your galaxies, but the thing is sitting still he
said. So a pertinent question arises, if it is sitting
still the proof for the big bang was the thing moving
apart. Well how do you get it to start back up? You
can’t go back and say well it exploded again because that
is good bye galaxies and good bye stars. You know you
have got stars and galaxies. Now you talk about science.
Here is a good example of it. This is why I have no curl
in my hair whatsoever and no waves. I have read
statements like this and lost it all. George Lemader in
his original writings, and I have read them and anybody
can read them if you can read French. He said the whole
thing stopped. The stars and galaxies formed and there it
was sitting. Then he said this, "The expansion resumed."

How about that. Newton’s first law of motion says an object in the state of equilibrium does what? Remains in that state unless acted upon by an unbalanced external force. Where is it? The universe is all there is. There are no external imbalanced forces. Internal don’t change the state of equilibrium, only external forces change the state of equilibrium. He said the expansion resumed.

Now that’s enough to take the curl out of a physicist’s hair, to hear a statement of that sort. Now, very scientific to put it as an understatement. Then that was bothersome, so today they say no, forget about that.

Things might collapse by themselves and how in the world do you ever get a start back up? So today they say let’s let the stars and galaxies form on the run. You know.

Whole thing expanding very rapidly. Let’s let condensation nuclea development here and there and form your stars and galaxies on the run. The very, the famous Russian astronomer, mathematician, Lischitz in 1946 in the Soviet Journal of Physics in a paper entitled, oh, I have got a while yet, in stability or rather gravitational instability in an expanding universe he said there is no way to form stars and galaxies in the expanding universe.

He said the stuff is moving apart so rapidly that you can’t form the stars and galaxies. He said you can’t
develop your nucleate condensation. They are going to be erased right as quickly as they develop if they develop at all because it is all moving so rapidly apart, but there is no way that gravity to hold it down on the farm so-to-speak and form your stars and galaxies. I gave a lecture of this sort at the University of Adalade before the astronomy faculty there. And a young man at the end of the lecture, who by the name of John Ranking, came up. He had just received his Ph.D. in astrophysics at Adalade and he said, I had mentioned Lischitz papers of 1946, a rather old one but physics is physics after all when it comes to gravity. And he said his problem that he had been given for his Ph.D. dissertation was the formation of galaxies in a rapid expanding universe using the approach of relativity. He said Lischitz paper may be old, but he said I came to exactly the same conclusions. There is no way to form stars and galaxies in a rapidly expanding universe. He said you just erase those things as fast as they are formed, those little instabilities that might develop. He said there is no way. In a real universe you see there is no way. How much time do I have left? Oh, ten minutes. Terrible. Well anyway, meanwhile back at the ranch.

There are two, there are three other things about the big bang, then I will go through the time question right
quickly. They also the question arises if you can't get stars and galaxies, let's go on though so we have something to say, suppose you get stars and galaxies. How do you get rotational motion... rotational motion at all. Impossible physically according to the laws of simple mechanics. It is an impossibility if your tork sat up to zero, and they have to add up to zero because you have the uniform cloud. We have a universe that started out with a certain amount of information in it presumably. You know after that panamodial egg exploded, if it exploded, and you have your rapidly expanding cloud. You had a certain amount of information in the system. Now Dr. Morris has explained a great deal about the second law of thermodynamics to you. I will add this. It is well known that if you take the evolutionists position that the universe is an isolated system in isolated systems, the entropy must increase. It cannot decrease. The information cannot increase and a hydrogen cloud expanding uniformly in all directions does not posses the universe, the information does today full of galaxies, clusters of galaxies, stars, clusters of stars, a planet with life on it and so forth. The information had to be much smaller. Second law of thermodynamics says there is no way for information to increase in a system of mattered energy unless there is a mechanism to put that information into
it. You can never have an increase in information. What must you have always, a decrease in information. Have you ever seen in your life any engineers anywhere that believe if you have purely the matter and energy and the physical laws that somehow without an ideal, without a concept, without a machine, without planning, without a source of energy coupled with that planning, that it will become a building. Well of course not. No engineer who work on that basis. Once upon a time I thought about buying a Datsun 240Z. How much now? I thought about buying a Datsun 240Z, but it was red and you know a professor hates to drive a red, pure red Datsun 240Z around on the campus. So I bought a Toyota instead, perish the thought. But anyway, I thought to myself later on, why didn't I just go up to a junkyard somewhere on Donovan Drive in El Paso. There are the pieces of all sorts of cars. There's energy galore. We have more days of sunshine than Alberquerque. There's energy pulling in, they obey the physical laws and all I needed to do then is what? Wait around for my Datsun 240Z to laws to put it together, the physical interaction between the pieces of the automobile, there's plenty of energy there, and out comes my Datsun 240Z. My students think I was absolutely crazy standing around out there waiting for that. What does it take? A mechanism. Let a system, and that is an open system that automobile
junkyard, you have got to have mechanisms. It is observed to talk about open systems. The second law of thermodynamics applies to all systems. You have to have a mechanism there to take energy and use it in a useful fashion. Books don't write themselves even though you have pages and pencils. Do they? It takes a concept and an idea. Well, I can't spend anymore time on that. I wish I could.

The time question. Some people say that this is all established very well. I was in a debate in Holland once upon a time about three years ago at Utrecht. My opponent was Dr. Karl Koppershar of the University of Amsterdam. To give you an example of circular reasoning, it is involved in this time question, I asked Dr. Coppershar, I said, "I wonder about the ages of stars." He said "That is very simple. You get it from the theory of stellar evolution." I said then, "Dr. Coppershar, how do you get the time frame worked for the theory of stellar evolution?" He said, "Well that is obvious. You get it from the ages of the stars." I pointed out to that Dutch audience that we give students at the University of Texas at El Paso zeros for such flagrant, circular reasoning. He said, "You've got the ages of the stars from the theory" and then said, "You've got the time frame worked for the theory from the ages of the stars." That is
circular reasoning of the worst kind and I maintained, "Yes. The geologist with his use the index fossils engages in the most flagrant type of circular reasoning." He uses the fossils to date the rocks and turns around and uses the rocks to date the fossils. And by the way, he sets his radiometric clocks by the fossils. He said, "You have to set your clock some way to know what kind of time it is keeping."

Well there are a number of arguments that would indicate a young age for things. I am just going to list them since I have used all of my time up on the big bang, maybe if somebody asks a question I will come back, and I am sure there will be things asked in the rebuttal part. There are a number of arguments for a young age for the universe. Clusters of galaxies should have disappeared in a short time. You see there are no field galaxies. There are only clusters of galaxies, only cluster galaxies in the sky, and there are no field galaxies. No clusters have broken up, and this puts enough of them at only age of the universe if you go into the mechanics the break up of clusters of galaxies at a maximum of three to four million years. That is enough of them. That is how long it takes a typical cluster of galaxies to break up. They are moving so fast in those clusters. The mass is so small. It is about 1% of what is needed to hold them
together gravitationally that they should have disappeared in the sky. As Thomas Flyhard at the University of Arizona once remarked, he said, "Why oh why did clusters of galaxies wait 15 billion years before they began to break up?" They haven’t. The universe is young. They are still in the sky. There is the so-called breakup of short pig comets we have them in the sky. They should disappear from the sky in 10 thousand years. Exciting things that I have worked on myself and if the time comes I will try to explain some of this more tonight. Then there is the cosmic dust on the moon which is produced by the influx of cosmic dust there. And the presumed breakup of the surface due to high energy radiation. It is only a fraction of an inch to three inches at a maximum on the surface of the moon. Should be hundreds of feet in thickness. If you take, consider the breakup of the surface behind energy radiation there should be mouths in thickness but yet it is a fraction of an inch. You remember when they had that Bob Hope special in which they said to the first man who walked on the moon. "What were you most afraid of when you walked on the surface of the moon?" He said, "The Houston scientist warned me that I better watch out for all that dust on the moon. They should have accumulated there billions of years." He said, "They told me to watch out of that..." He was
serious. When I was a student they were afraid to send a man to the moon because they were afraid there was a dusk. Later there hundreds of feet in thickness demolishes in hundreds of feet of thickness. Now the deal was if you send a man to the moon in a rocket, the rocket will sink down by dust, and it was stuck and you couldn’t get it back. Then later on they decided, "Well there wasn’t much dust on the surface of the moon after all." Hindsight, you know, is better than after you have already done it there and so forth. Then there is the matter of the Pointing Robertson Effect which I would love to talk about tonight which causes material to spiral...one minute or did you say five minutes you know. I can see double there. But anyway there’s the Pointing Robertson Effect that swepted everything in the sun. Our solar system should be clean of small particles in only 10 thousand years. Then there is the decay of the earth’s magnetic field which seems to put an upper limit of 10 thousand years on it and I hope this comes back up in the questioning. And then there is the helium in the earth’s atmosphere. To account for the amount of helium we have we would have to lose it’s atmosphere 20 times in its past history. I don’t think there is a geophysicist living today who believes that he could. And then there, well, I guess my time...Alright, to sum up then, I am saying that the time
scale is short for the solar system, for the earth. Oh I should have told you about the work of my graduate students on the cooling of the earth putting in radioactive elements. We get times back smaller than what the evolutionists are talking about. When we consider we were starting molten and putting radioactivity in it by the way. This is one of those statements I make as a walk away from the microphone. So as the second law of thermodynamics, the basic physics that one would apply in regard to the big bang would say you can't explain the universe on a naturalistic basis and the time scale is short.

MODERATOR:

Thank you. The negative side and the affirmative side. The professors did want me to mention that you will be tested on all this material and we hope you took good notes. Okay? Now we are going to take about a ten to twelve minute break and I am going to ask the light, lighting people maybe in ten to twelve minutes could you like flick the lights outside or inside. Can you do that? Good. It is easier appointing row captains so see you in ten to twelve minutes.
SCHWINNER:

"...type offense. But I just happen to have the reference that Dr. Slusher referred to and let me read to you the whole thing. He told you he quoted again out of context and didn't bother quoting the end of it. This is from the article by Harlo Shapley in 1963 on the evolution of atoms, stars, and galaxies. You, that was the first thing he quoted. Dr. Shapley was not proposing that they were a universal matter at all times. What he was proposing was a second hypothesis which he rejected. Quote, as to the alternate hypothesis the proposers and their followers not him, the propers and again we know that they are not numerous, solved the problem of the original creation by saying that there were, there never was an original creation. The universe we know according to this hypothesis has no beginning and presumably will have no end. It is in a steady state. And although there are numerous small scale and localized regressions and progressions of evolution, the universe as a whole does not continuously progress or regress. Then the next paragraph by Shapley begins, "The second interpretation also is not wholly satisfactory and it too may perish under the onslaught of observational data." Dr. Slusher tells you Shapley adopts that as his hypothesis. It's back what I said about methods. Now I am not an
astrophysicist so I can't respond to the rest of the
gobbity gook because it is just not my field, but I think
Dr. Morris at least stays a little closer to the topic and
he gives me something I can work with. It is like
fighting, it is like punching a pillow. You don't know
where the beginning or the end of the thing is.

I noted a couple of things as Dr. Morris spoke so let
me go through a few. He quoted Paul Erlich who is a
professor of genetics if I remember. He also, Paul Erlich
is the famous author of "The Population Bomb" which
predicted that the earth, we would have a major world war
in 1974. Paul Erlich was a frequent guest on Johnny
Carson and he is unfortunately and maybe an excellent
scientist in his field he tends to be a bit of a publicity
hound. I personally am not a supporter of his. Great.
He shot off his mouth. We all do that occasionally.
Well, hopefully not too many of us do it. I agree it was
an irresponsible sort of quote from Paul Erlich. There
are roughly, I don't know the number there, about fifty
thousand members of the Geological Society of America.
There are about 8,000 Paleontological Society members.
You can quote me a hundred people who misspeak and it
doesn't mean a thing.

He quoted also that a few scientists expressing
faith, oh let me see if I can find some of the arguments.
I was trying to remelt this stuff. It is really hard to find them. One of the best arguments, let's let's go to this one, is that we don't see evidence, this is really at the core at what most of Dr. Morris. We see no evidence of evolution and that evolutionists which they call us, we don't call ourselves evolutionists. I call myself a paleontologist personally. But what they call us evolutionists claim that evolution is so slow that you can't see it in operation and therefore, you know, it is totally unfounded. Well actually you do see evolution operation. We have the straw man logic problem again. If you have never heard of influenza viruses, the pandemics we have periodically, those are mutated, simple viruses. In viruses which are extremely simple organisms evolution in fact progresses fast enough to see. If this is, I might as well be kind of daring to state this, if Dr. Morris doesn't really believe in rapid evolution in simple organisms, which we observe, I hope that he never encounters wrong kinds of people who get penicillin resistant bacteria. Resistance to DDT among various strains of insects is an evolutionary change. Resistant bacteria are evolution, and these are the ones that occur rapidly in simple organisms. It is true. We expect that evolution in more complex organisms is a bit more of a time consuming process. I think I showed you that there
are transition fossils. I have plenty more. In fact is it possible to have the next slide? Can you, is the projector still set up with my slides? It is okay just keep...okay while he is looking at that let me comment that I showed you some transition of fossils and it is true. We don’t have complete sets of transition fossils and as I tried to explain we don’t expect to. Let’s see if I can get some of these things. They are not set up. Somewhere in there is a slide. Now if you can’t produce this, you can tell that we are slightly less polished at this game of...okay here we are going to keep going through my slides and hopefully I can keep your amusement while this is going through. Not a very exciting series to see the same thing over again. We are getting there. We are evolving. This is one of the stem of reptiles very, very close to the line of late of advanced amphibians like seymouria. There is an extremely, in fact probably the very best of transitional sequences is from amphibians to reptiles of course Dr. Morris would then call that amphibian reptile kind, and we define the problem of that out of existence. By the way, another straw man, I did not claim. I did not claim that archaeopteryx was not a bird. I claimed that it was a bird with an incredibly good set of dinosaur features so and he argued a straw man. Had he been on top of the
literature, he might have realized that point. By the way in addition, the article from Cloud that he cited about no precambrian fossils is from 1948. Most of them were discovered after that because frankly our methods are getting better. This is called, this is a specimen from the burgh shale, a drawing and a photograph which is called an enochphorin. It is a ancestral form of, actually there are surviving representatives of this, found that the genus peripitis. This organism is probably not exactly at the transition point. That is true. But it shows a numerous characteristics of both analid worms and arthropods. It is a little difficult to figure exactly what this thing is, but there are a large number of forms that if they are not exactly right at the transition contain common features from several groups of organisms. These again are evidence for evolution.

One of the interesting points that the creationists bring up is that, another straw man, they state that evolutionists believe 'life evolved by purely random processes. That is just wrong. That is not what the synthetic theory of evolution says. Random mutations are random components of evolution but we have the process, the extremely non-randomizing process of natural selection. For example, and this is not part of natural selection but this is another example of how we do not
believe it is not just random processes, these are fibers of collagen, a substance in your body and most vertebrate bodies. These have been dissolved, and then allowed to reform and they form like that into a very ordered structure. This is a simple pen and ball model of, and this is another version of the same kind of thing, of a mineral crystal. Everytime a mineral crystalizes it it goes from an unordered state to an ordered state. I am not going to do the thermodynamics argument. I am going to leave Bill, let Bill have a chance to play with that because that one is, as you noticed Dr. Morris did not refute the open close system. He gobbled gookied. What I do want to show you is that every there are crystals and ordered structures reforming continuously in and out of life. Then that means there are living forms that are ordering. There are non-living things that order. This does not mean the total energy flow in our solar system is not going down hill, which it is. We are not arguing, dare I touch a little bit of Dr. Slusher's stuff because it is way out of my field, but another straw man. Evolutionary theory does not discuss the increase in entropy in our solar system, in our astrosystem, in our galaxy. I have never claimed, no one this far is seriously claiming that our galaxy is not running downhill, according to the second law. I, we, the topic
was the origin of life and the evolution of life. Dr. Slusher did not even come within a galaxy of it.

Another point of interest, this is I think while we are on or off the topic of fascinating things, these are photographs of graphite crystals from a meteorite. This is totally out of the earth. These are the ordered structures in simple, in what appears to be simple graphite crystals. There is structural order in the universe. No competent evolutionist, as they call us, states that evolution and events arrived by purely random processes. That is one of the worst of the straw men. Okay, actually could I have the lights again and the projector off. In my minute left let me see if I can, again this empty argument is so hard to get at that one doesn’t ever begin. But I just cannot believe Dr. Morris can come up and make statements without going back to the substance of the opportunity. He will say there’s no transition fossils after I showed you transition fossils. Dr. Slusher will talk on the topic, not even remotely the topic of the thing. I, as I said, I am not sure we can refute everyone of these things because they can just bring them up as fast as they want and it takes longer to refute things than to bring them up because it is like throwing out garbage. You have got to, it takes longer to get rid of it. Spill a mess in your house and try to
clean it up and you will see how long does it take a kid, a kid to knock something over and how long does it take you to clean up the mess? That is what they are doing. They are making mess piles, and we have to clean them up. It is an extremely tedious process. Thank you.

MODERATOR:

Why don't they make you debaters the same height? It would save me a lot of trouble. Okay.

MORRIS:

We are frequently being accused of misquoting or quoting out of context not only here tonight but this is another one that is hard to refute because we have to go back and give you the whole context and show you that when they say that we are quoting out of context it is what they are doing. I was quoted for example in "Scientific Creationism" on page 93 concerning a quote from Dr. Stephen Gould at Harvard. The point is this is my statement, one must distinguish between uniformity of natural laws and uniformity of the rates of particular processes. Then I quote Dr. Stephen J. Gould to that effect. An article entitled, "Is Uniformitarianism Necessary" and that was the essence of his article that there is a distinguishing, it is necessary to distinguish between uniformity of laws which creation has always
accepted and uniformity of rates which is an empirical subject and particularly in the concept of catastrophism, which Dr. Gould was advocating, has to frequently be modified. Now I was also accused in my article entitled "Circular Reasoning in Geology" to be way out of date and to be dealing with data that were forty years or more old. In fact older than that I suppose because the answer to the circular reasoning argument was supposed to be radiometric dating. As a matter of fact, however, every quotation in there, that was thoroughly documented although for a very brief article, in that was very up-to-date information from evolutionary geologists who were acknowledging the fact that there is circular reasoning in geological dating. As a matter of fact, Dr. J. F. O'Rourke, the author of one of those said in any kind of a system in which you use temporal reasoning, circular reasoning is essential. If you are going to deal with data before the beginning of history, you have to use circular reasoning and that was his whole point. He then made the point that it is okay because it works. It is pragmatic. The ideas, you can use it to find oil wells and so on, and so therefore it is valid even though it is circular reasoning, it, all that really counts is whether it works or not. Well, of course there is something to that however the ability of geologists to locate oil wells
is not conditioned upon whether or not they believe in evolution. As a matter of fact, we have graduates from Dr. Slusher’s geophysics major at our college. They are taught thoroughly creationism and catastrophism, and most of them work for odd companies. They do better, so far anyway, on percentage basis in locating wells and do their associates. So that is not a necessary function of anything. Now the article, the documents the articles quoted in that particular article were very thoroughly up to date and had nothing to do with back in the 19th century with Lyell and so on before they discovered radioactive dating. Dr. Slusher may have a little more to say however about radioactive dating.

It was mentioned that you can see evolution taking place today, particularly in such examples as the development of resistance to DDT by insects so I thought I just might give you one reference if you question this whether it is quoting out of context or not look it up. Scientific American, September 1978, Francisco J. Ayala, "Mechanisms of Evolution." Dr. Ayala was a student of Dr. Dobzhansky, the greatest probably geneticist dealing with this kind of a subject today. And he is talking about that and he says this after first pointing out that mutations are errors in the replication of DNA, part of their translation into protein. He says these are random
and so on. But then specifically speaking particularly about this matter of resistance to pesticides, "Insect resistance to a pesticide was first reported in 1947 for the housefly, musca domestica, with respect to DDT. Since then resistance to pesticides has been reported in at least 225 species of insects and other arthropods. The genetic variance required for resistance to the most diverse kinds of pesticides were apparently present in everyone of the populations exposed to these man made compounds." These were not mutations unless they were mutations way back in the devonian and past but they were just part of the gene pool that is in existence now. When the environment changed, why then the population shifted to a DDT resistant population as against the previous population. In exactly the same way the coloration of the peppered moth, classic example of so called evolution in action, really natural selection in action which is a different thing, is explained. In other words the peppered moth adjusted to the different coloration of the environment by the population shifting in that color but now that the environment is changing it is shifting back again, but it is still the same species of moth, not even a mutation, just variation and recombination of factors already present. The second law of thermodynamics apparently presumed, Dr. Schwiner doesn't understand
what I said about the difference between open and closed systems, and I did point out that even in an open system and all systems are open systems, you have to have more than just an open system. That is all the earth has with respect to the evolution of the biosphere. It has open system, open to the energy of the sun, but it does not have a program, does not have a mechanism for converting that energy into the evolution into the biosphere so far as any demonstration yet. And to talk about crystals is completely beside the point. Crystals apparently increase in order when a solution crystalizes into a crystal structure, but it has nothing to do with biology. As a matter of fact, once a solution crystalizes that is a dead end. That is as far as it can go and it just breaks up. It is not going to evolve into anything else at all. Dr. George Strevopolus, an American scientist, deals with that talking about someone else who had said exactly the same thing in a previous article. He says, "He makes it appear as though crystals in highly ordered organic molecules belong to the same class when in fact they don't. When a crystal is broken up, the smaller crystals are physically and chemically identical to the original." This is never observed with organic molecules. When the original molecule is split up lesser molecules appear and part of the original information is lost. To ignore such
fundamental differences in an effort to arrive at some general overview or law is to create a false overview and a pseudolaw. To say that there is an obvious tendency of nature from disorder to order and organization, is to completely compromise all of thermodynamics. Under ordinary conditions no complex organic molecule can ever form spontaneously but will disintegrate in agreement with the second law, and the more complex it is the more unstable it is. And the more assured sooner or later is this disintegration. The second law has not been reconciled in any respect by any evolutionists yet with evolution. And until evolutionists cannot only speculate but demonstrate that there is a grand biochemical predestinating program that directs the evolutionary process in space and time and a mechanism to convert the destructive energy of the sun into the construct of energy of building up the complexity of the biosphere, it will not work. Now if that can ever be done, okay. It is at least feasible or philosophically possible that someday a reconciliation will be developed. Now where near doing it yet. Even if it is as I pointed out earlier, the second law, if evolution is able to accommodate the second law that still is not as good as the creation model which predicts the second law. It is exactly what you would expect in terms of the creation model. With respect to
catastrophism versus uniformitarianism, three minutes or four minutes, that wasn’t the main theme either of the debate, just the origin and history of life, creation or evolution, not uniformism or catastrophism. But since that has been brought up, it should be recognized that there is a resurgence of significant of catastrophism among evolutionist geologists today, Dr. Gould being one of them, Dr. Ager is another. Now when I was going to school and I took a lot of graduate courses in geology too, that was my minor, and in those days of course uniformitarianism was the, was the watch word. You just didn’t use the word catastrophism. That was a bad word in the geology class. You just couldn’t do it. But now it is different and there are even two societies for the study of catastrophic geology now, and these are not creationist societies. There’s a great deal of interest in catastrophism. These of course are not considered to be one world-wide catastrophe or cataclysm, but rather local, regional catastrophes, but it is significant that more and more is it being realized that such things as ripple marks, for example, cannot be explained...in terms to uniformitarianism. It is true that the size and shape of ripples and dunes has to do with the hydraulic parameters of the flow that was producing them but can you ask the question then, how do you get fossil ripples? If
you are going to have uniformitarianism, you know that the
ripples on the bottom of a streambed or something if they
are exposed to the atmosphere at all if the deposition
process doesn't just continue right away will be eroded
away very quickly. How do you get fossil ripples? Not
only do the ripples have to be preserved, they have to be
covered quickly with another layer of sediment coming in
from somewhere else but also it has to be some cementing
agent present to cause them to set up and lithify quickly
or they won't be preserved. The very existence of these
so-called ephemeral markings such as ripples and
footprints and wormtrails and so on is evidence of
catastrophic formation. A book that I want to just cite
not by a creationist but Dr. Eric Ager "The Nature of the
Stratigraphic Record" is devoted to that subject and he is
not a creationist. He is anything but. He doesn't like
creationists at all. He makes that very plain. He
doesn't believe the Bible. He doesn't believe in creation
at all, but he does believe in catastrophism and he is a
confident geologist. In fact one of the most confident.
He was president of the British Geological Association. He
is head of the geology department at the University of
Swansea in England, and his book is devoted from beginning
to end showing that every single type of geological
formation and system instructor has to be explained in
terms of some kind of catastrophe. And then he closes his book this way. This is the very last sentence of the book. He says, "In other words, the history in any one part of the earth like the life of a soldier consists of long periods of boredom and short periods of terror." In other words, whatever you see in the geological column is a catastrophe. Now he thinks there might have been millions of years in between when erosion was taken place or something you can't see, but everything you see is catastrophe. Now remember science is what you see and if all we see in the geological column is catastrophism, by what rite do we say there are millions and millions of years in there for which we see no evidence. We have to accommodate evolution but other than that there is really no evidence for it at all. And Dr. Gould of course is saying the same things. He said, catastrophists are as committed to scientists as any gradualist. In fact they adopted and they were talking about the 19th century catastrophies here, but they adopted the more objective view that one should believe what one sees and not interpolate missing bits of a gradual record into a literal tale of rapid change. Then he says this about transitional forms, and Dr. Ager and Dr. Gould and others like this are tying nowadays the complete absence of retransitional forms, not these so-called mammal-like
reptiles and things like that that are not really transitional forms at all, but real intermediates between basic kinds. They are tying that with the catastrophes thinking that something that had to do with the catastrophes that took place speeded up the evolution so that is why you have these punctuations. And here is what Dr. Gould says, "The extreme rarity of transitional forms in the fossil record persists as the trade secret of paleontology." The evolutionary trees that adorn our textbooks have data only at the tips and the nodes of their branches. The rest is imprints, not the evidence of fossils. Okay, I am not through but...

FRAZIER:

I would like to start out by saying that I am not Dr. Shapley and I am not a Marxist or an atheist. In fact underneath this beard I am basically a nice American young man. It is not necessary to applaud. I know it already. Incidentally David has been telling you some logical, logical fallacies. See he did mention one which you just got a beautiful example of. There is one called argumentum ad hominem which means that you disprove what a person says by saying that that person is a naughty person. Obviously anything that Gould says must be wrong because he is a Marxist atheist. Well of course that has
nothing to do with scientific statements that he makes. Nevertheless, in fact if you want to consider some interesting scientific methods, consider using a Gallup poll to support creationism. Clearly if the most people accept it, it must be correct. Well, indeed.

Alright, let me talk a little bit about thermodynamics. This is a central issue. It is a very important and obviously it has received a good deal of attention tonight. Open systems, all in the world the earth is is an open system. This is what Dr. Morris has said. That is all we have. We can’t get anything from it, but you see that is quite literally not true. When he says there is nothing to provide order all there is is an open system, but there is no mechanism to provide an information. You see the whole point of tonight’s exercise, the whole point of this debate is precisely to debate the information sorting process that he says doesn’t exist. You see it is evolution. It is natural selection. Natural selection is the process by which energy ultimately is organized or it allows organic materials to be organized by evolutionary progression. There is a long discussion in a recently published journal referred to as Creation Evolution which is by and large and attempt on the part of evolutionists to begin to refute some of the materials that are being discussed by
the creationists. Up until this time most scientists had essentially not taken the creationists on because they were generally considered to be outside the realm of science. But these attempts are being made now and in a very long article which I very much suggest to any of you who want to follow this subject up, a very detailed argument on the nature of thermodynamics is applied to biological systems is developed. One of the arguments that can be made is this, sun light provides the energy for all ecological systems and the energy from the sun is used at every different level in the ecological system to provide the energy for the organisms metabolism. The energy is absorbed by plants, and the plants are eaten by plant-eating animals, herbivores. There herbivores are consumed by meat eaters, and the meat eaters are consumed by other meat eaters and sooner or later the top carnivore, the highest meat eater on the food chain, takes everything and he dies and when he dies his organic tissues are decayed by various bacteria. In other words, the energy flows through that food web system. Alright, at every step in the process entropy is increased or energy level is decreased precisely as the second law demands. But if you replace evolutionarily one form with another form, if you for example replace a particular mammal that is behaving as a carnivore with another
carnivore, if you replace a particular plant in the food chain with another plant that is occupying the same type of niche in the ecosystem, it does not fundamentally affect the way the energy moves through the system. It doesn't affect the second law of thermodynamics at all.

There is an organizing system in evolution, I mean in the second law of thermodynamics, and it is specifically natural selection.

Well, let me go on to a couple of other points. The truth of the matter is, I actually do feel a little inadequate with Dr. Slusher's discussions because as David told you he is not, I am not an astrophysicist or an astronomer. I am certainly not an astronomer with a yearning to become a stand-up comic. And I will tell you the honest truth. For me to comment on some of the discussions of astronomy that he brought out would be approximately comparable to pulling any one of you up here on the stage flopping in front of this microphone and then saying okay, argue with him, because I can't, and I don't know it, and I will tell you I don't know it, and I will tell him I don't know it because I am not an astronomer. But I will bet you anything that if Carl Sagan were standing here or if Harlow Shapley were standing here or if one of the other astronomers who constitute what is obviously the main stream of the astronomical profession
in this nation were standing here, they would be able to
argue with him. You see, it is just like David said
earlier. Just because we don't have the answers just
means that David and I are not omniscient. It does not
mean that these gentlemen are obviously correct.

One last point. One last point. You know I don't
know what I can do but simply just point out to you that
Dr. Morris said that Gould said that we are all supposed
to be catastrophists and I read the quote to you and say
Gould says he didn't say that. In fact Gould specifically
said he didn't say that. You know, what can I do? The
truth of the matter is I don't know Gould. David knows
Gould. Gould told David that he didn't, man he didn't
want to mention this, this is hearsay and would have
nothing, you know you couldn't use this in a court of law,
but when Gould was told that we were going to be debating
with Dr. Morris, of course he didn't know Dr. Slusher
would be here but when he heard that Dr. Morris was going
to be here he told David, "You know you really ought to
tell them on the stage, 'Quit misquoting me.'" In the
first place Gould is not advocating catastrophism.
Catastrophism is a term that has a very specific
definition in the history of science. It refers to a
school of scientific thought, scientific thought, back in
the middle 1800's. What is being described by Ager in his
book "The Nature of the Stratigraphic Record" what is being described by other geologists who are beginning to realize the presence of occasional local catastrophe is that there are cases where certain rapid events leave their mark on the geologic record but not the entire geologic record. You see Dr. Morris leads you directly from saying that some geologists say there are maybe some local catastrophes and all the sudden before you know it, he is into saying the geologic record shows nothing but catastrophes. Well that is just not true. I mean I don’t know any better way than to simply say to you to the best of my knowledge as a professional geologist honestly that’s not true. There are plenty of places on the coastal plain of Georgia and Alabama where I can take you and show you examples of sedimentary structures and rocks and fossils that are existing in the rock record that are precisely identical in their appearance to what you see in the present. It is that similarity of appearance that forces one to say either the earth’s past has been like the earth’s present or else if all of this were divinely created it was divinely created specifically by a god who made it look very very old to fool us. But the trouble with that of course is that if God makes things look very very old to fool us then who knows what he has done also to fool us. It is a very lousy theology. Thank you.
MODERATOR:

Before we go on let’s try to get the debate back into the creationists-evolutionists mold and not...because we did agree upon not bringing religious principles in.
Thank you.

SLUSHER:

Well thank you very much. I didn’t know I had the makings of a stand-up comic. I know though, that I am far from being able to compare or compete with that public humorous from Cornell University, Carl Sagan. Well, in regard to the quote that was made about Shapley and me, I don’t for the life of me see what in the world your quote reading from there what he had to say about the steady state of continous creation hypothesis had to do it all with what I quoted him as saying as his own views in regard to it. I did not misquote what he had said. That is what he had said, and then he went on certainly made a comment about the steady state. He didn’t believe the steady state. Alright, so I don’t really see what that has to do with it. And Dr. Schwinner, I really have my feelings hurt terribly. You said you didn’t understand my lecture and you referred to most of it as gobblty gook. I am going to remember that word. I must confess, Dr. Schwinner, I understand that your lecture and I think if
you would, if... and Dr. Schwiner, I believe if you would study real hard you would understand mine. One last word, my freshman students in astronomy and elementary physics don't have a bit of trouble.

Well finally going to other things then that have to do with this matter of creation and evolution I would like to make a few comments here and there back to the second law of thermodynamics. Natural selection preserves what changes might have taken place. Natural selection cannot give rise to new information in a system. Now that is as plain as can be. If you have mutations occurring in an organism in a system which is of course a disordering process by the very definition of the word and maybe now and then you might have something that, let's say, is good for the organism. Maybe the earthworm can understand the song of the blackbird or something of that sort which he couldn't understand before. But natural selection just prove, just what, preserves earthworms. Maybe they will understand the singing of the blackbird and understand when it is going to gobble one of them up. Natural selection is not an ordering process to give rise to anything new in the sense of developing new information. Mutations destroy information that is there. They do not give rise to new information that causes an organism to go up, up, up. Without mechanisms to produce, put new
information into a system you do not get an increase in complexity, in functionality, in organization, and in information in any system.

Now, one other thing though that I want to remark on, certainly what I had to say in astronomy was pertinent to this whole question. After all, no universe, no men. No universe, no solar system. No universe, no earth. No universe, no life. Well of course it has to do with this whole question. As a matter of fact, whether things can be explained with a naturalistic basis or not. I am absolutely amazed at the naiveness of one who says that it doesn’t really make any difference to talk about those things as to what is going on today. Well, pick up any typical astronomy textbook or astrophysics textbook and what do they say? They say we are all a part of a supernova, or we are all a part of the hydrogen produced in the big bang, or we are all a part of this chance process that started right back there with the explosion of the primordial atom. Well, if things didn’t start that way and the universe was created, which is what I try to argue, then what makes all the difference in the world in regard to this whole question? And certainly in regard to the second law of thermodynamics about the whole thing, the plain statement of the second law of thermodynamics is this, there is a tendency in natural systems to go from a
state of molecular order to a state of molecular disorder, university physics fears, and if that doesn’t apply to evolution, I don’t know what does because the evolutionist says things go by chance processes from simplicity to complexity, from low energy states to high energy states, from what? Molecular disorder to molecular order. And that is a contradiction of the second law of thermodynamics. Well certainly it has to do with the whole thing. As a matter of fact, now in regard to public, I just want to make a quick, how much time do I have over there time keeper? How much? Five, okay.

We hear a lot about publication of things. Is it published in this journal or published in that journal? You know, Hans Alfen who is one of the greatest cosmogeneticist, one of the greatest astronomers of our time, he is a professor of applied physics out at the University of California at San Diego among many places. He commented that in the United States there is what is called the peer system. You know for judging articles and seeing what will be published and what won’t be published and he said if you come up with an idea that you get pretty well accepted by your peers; the peer system in the United States with scientific journals will ensure that it has eternal life. And he says there is no way it will be displaced because the cronies, once cronies, are right
there to make sure that it stays right in. You come up with an idea and it goes against the main stream and it won’t get published as a matter of fact. This is a rather common thing and anybody knows this who has ever tried it disagrees with the establishment and see if he can get it published.

Now in regard once more, I wish we were going to have a thermodynamics class here tonight. I teach it once in a while down at the University of Texas at El Paso. How in the world can one talk about carnivores and carnivore and more carnivores eating this and eating that. What in the world does that have to do with the statement of the second law of thermodynamics that says things are running down and not going upward. The cell is a metabolic agent because it has the mechanisms in it. You take those mechanisms out of it and it won’t metabolize anything. Things do not arise by chance. You take a watch, for instance, that is one of these self-winding things, you know some people say oh there is your beautiful violation of the second law of thermodynamics. Wave your arm and your watch winds itself. Well you know good and well that you are taking random or energy and putting it in an ordered form. But you take that little mechanism out of the watch, you know, and that takes that random form of energy and puts it in order form. And you can wave your
arms like a windmill all day and it is not going to wind itself. I have got an Acutron on here and I wave my arms all the time and it never winds itself. Once that battery is down it is gone and the thing quits vibrating. The second law of thermodynamics has a lot to say in regard to all of this. Now Dr. Schwiner refers to clean things up. I asked him then to clean up the intellectual debris left by such silly notions as the big bang in which is proposed that an explosion can produce and ordered universe. Have you ever seen an explosion produce order? People drop bombs on things to destroy them. People set off things of that sort to produce disorder. I would also ask him to clean up the debris of the origin of life in which the second law of thermodynamics says that you have a violation of the second law when you say chance processes can produce order. Chance proofs produces the irrational and the irrational produces more irrationality.

Oh and by the way in regard to radiometric dating. Let me give you some examples of the precision of this business. Shaw Degger in his book, "Principles of Geodynamics," the second edition, Shaw Degger, a geophysicist out of the University of Toronto. In the first chapter of the textbook he says half of the time radiometric dating is uranium thorium lead techniques gives the precambrian younger than the cambrian. The
Palivious off the Hawaiian Islands using potassium argon dating in those Palivious, oh my two minutes, well anyway, by potassium argon dating those Palivious were dated for instance as a 160 million years and 200 million years. But the flows occurred in historic times of 160 years ago and 200 years ago. Out along the mid-Atlantic ridge you get a different value of robidian stratum along the Azores and you get over along the ridge itself, and you get over in Iceland. There are many difficulties with that. The equation says what? Lead in the rock now equals lead in the rock then plus the uranium in the rock now times E to the lambda T minus one. What do you have to know in that thing? You have to know whether the K constants are really constant or not and by the way 14 different radionucleoids have had their rates changed in the laboratory by external effects. That is common knowledge. Also the pleochroic halos show a great deal of variation when you are using the same atomic admitter. That is known. For the more you have to know how much rock is in the lead to start with. How much time there? One minute? And you guess at that. You see your equation remains just a family of solutions unless you put the right number in there. And how do you know the right number? Shaw Degger said you are going to have to use minerals that have half lifes about equal to the age of the earth itself. In
other words he said you are going to have to use minerals that have a half life of 4.5 billion years. Shaw Degger had already made his mind up in regard to you see on the basis the fossil evidence. You can’t say I am going to use this radiometric clock independent of the fossils without studying it with...but I have set a clock by something or the other. The radiometric clock is calibrated with the fossils, and I heard Preston Cloud himself say once upon a time on the UTEP Campus at a lecture. He didn’t believe that radiometric dating business at all. He said goodness we go by the fossils and our ideas regarding index fossils. Have I used my time? Well unfortunately that is it. Thank you for inviting me down here.

MODERATOR:

For everybody. Okay, but don’t go away. Don’t go away because now we are going to turn it over and let you do the asking of the questions. Alright, if, I tell you what we are going to do, if you will come right down there and stand we will put the microphone down there and you can ask one at a time. I will try to be as objective as possible without picking out people. Uncle Freddy, how are you. No, I am kidding. You don’t believe me.
QUESTION AND ANSWER

Question:

...used within the cell as well as outside the cell.
In turn there are enzymes and these are proteins and these control or regulate DNA activity. My question is, which came first? The regulatory protein manufactured by DNA or the DNA which is regulated by the protein.

Schwinner:

I will try that. Actually are my slides set up? I just happen to have something for that. Is the slide projector still available with my slides on it? I have a slide of protein called mioglobin which happens to have a very strongly, I think our thing fell on the floor there let me get a hold of that. Can we get my set of slides up. I would like to show you a couple of these. My answer of that, this is a pretty common question. It is a good question too. In fact it's, I don't have a firm answer for this but I will show you some evidence for it.

Okay we are going to run through the slide once more. I am sorry you have to keep seeing these things, really, then again you know it is like might remind you of just what we have been confronting. Let's get to this. To the section where I was showing you some ordered structures.

Okay we should be just about there. No we are not. Still
on transition fossils which don’t exist of course, and okay now I am finally up to order structure then I think we will hit mioglobin shortly maybe the next. No. There. This is a model not of DNA not of RNA but of a common molecule called mioglobin. By the way there is an entire chapter in Melvin, in Calvin’s book. I think it is Melvin Calvin on the, called "Organic Geochemistry" about this topic. It is not, there are very strongly structured non-DNA molecules with spiral structures and with even some billiga replicates. So it is entirely possible that early life did not have DNA or RNA. It may have been protein patterning the next protein. So the answer is, I don’t know this for sure, but it is entirely possible. Right. And one other point. The reason I brought up these illustrations of all these crystal models such as, let’s go back. This is a model of as I show you the graphite, and going back one further these complex crystals is the fact that it is entirely possible then the early ocean clays in the bottom sediment formed a mechanical template for the first organic molecules. Now I will grant you that stuff way back there without a fossil record except for fossilized organic chemicals is pretty speculative and I certainly am not going to claim to you that I have an answer, a definitive answer, but to try and answer your question I believe it was probably a prenucleic acid level
of reproduction, but again I am not an organic geochemist.

Okay. I hope that answers the question. It is a difficult question.

Question:

I would like to address this to the pro-side of the board here. The creationists models presented, they presented one vote for creationism and for the evolution model. My question is that they have adopted these to try to apply the laws that are in affect that we can see today. I would like for you to take a stand on the model that they have proposed for the evolution model as it concerns from going to a higher state or a lower state of order to a higher state of order. And if you don't see that model as being correct, how do you see these states of order progressing as time goes on?

Answer:

Well, I will try. The, in the first place, and this is something that wasn't specifically discussed, but there is some question about what exactly constitutes more or less order. For example, an amoeba which is a very simple apparently organism is in fact a very complex organism and if you try and understand everything about everything about the entire behavior of an amoeba, you quickly find yourself reading in tons and tons and tons and tons of
books and you suddenly discover that amebas are in some ways, metabolically and other ways, are almost as complex as what one sometimes calls higher organisms. Nevertheless, nevertheless, there is, there is the second law which does very definitely say that systems go from more to less, more to less order. Evolution, therefore, seems to be contradicted by it. Ultimately though and again this is an answer that nobody seems to like, you put out the answer and you say I don't like that answer, it doesn't really matter whether you like it or not. The answer simply is that biological systems do not strictly behave according to the principles of thermodynamics. Thermodynamics is not specifically violated because the specific principles of thermodynamics, the mathematical and rigorous principles are the defined to work in isolated systems and Dr. s Morris and Slusher know that. When they say well nevertheless even in open systems there is a tendency towards increase in entropy. That is true, but the word tendency is important because when you say there is a tendency to you by use of that word, the very word tendency imply that sometimes it doesn't work that way. Sometimes you actually do get a decrease in entropy with time in the system. This reminds me a lot of a little analogy I read in which one says take a whirlpool in a stream. Everyone knows that of course water runs
downhill, but you can, you can sometimes observe whirlpools along the side of the stream where part of the water is actually moving upstream. Well, that sounds like a complete violation of the laws of gravity. You could very easily say gravity is not supportive, there is no such thing as gravity. Well of course gravity is true, but the energy that it took to drive some of the water in the whirlpool back upstream, that energy was being taken from another part of the stream. Well you see what I am specifically trying to say is that when you consider the enormous...

Question:

The second thing is why should two models, if it is a fact that the earth is less old than they may suppose it is, why should we be isolated to two models if as they stated, as he stated, the religion, and in particular the Judeao-Christian book of Genesis, was not supposed to be a aspect of this debate. In other words, this was heavily biased. You have got a great deal of fundamentalist Christians in the audience as your institute is made up of, why are they cheering you if you are advocating just as strongly by your statements that the earth could have come into an instantaneous creation by a giant grapefruit. The point is you have no basis for saying that God caused
this by attacking them. So specifically why should we use, be isolated to their model of evolution and yours of scientific creationism when you haven't even defined what scientific creationism in specific says. You have only attacked their model, so exactly what is scientific creationism? Wait, without using the Judeao-Christian books of Genesis, the first two chapters without using that, how do you even create a cosmology of anything?

Moderator:

Okay, this is not going to be a pivotal point in history tonight so we don't have to get hot. Jim made a good point and you don't have to answer his question. Well, the definition question, I think, maybe deserves an answer, but we can leave the audience character reference out.

Morris:

The gentleman made kind of a little, mini-debate himself and I don't think I can recall all that he said, but specifically he did ask what our definition of creationism, scientific creationism is. We did define it right at the beginning. Apparently you weren't listening. The two models that we are talking about, the evolution model is the concept that the origin and the development of all things can be explained in terms of natural
processes that are still going on. The creation model essentially is that they can't and therefore, you have to have supernatural processes to account for the beginning. It says nothing about the Bible, nothing about a particular deity or anything else, just that there must have been a supernatural creator. You can call him Allah or whatever you want. But a supernatural creator extraneous transcended to the universe who at the beginning created the basic systems of nature and by processes which are not now going on. And then the creation model makes predictions. If that is the understanding of creationism, then we would expect to find the basic principle of conservation in nature, which we do. That is the first law of thermodynamics. A basic principle of decay in nature which is the second law of thermodynamics. Now, you say why couldn't other religions be brought into this. We have tried to keep religion out of it. That doesn't mean of course that both evolution and creation do not have religious implications. Obviously they do. They are world views. They relate to everything and so naturally they do include religious connotations which specifically we have tried to keep that out of it tonight. We have not referred to the Bible or to religion in any way whatever...that is the creation model. You asked for a definition. Now wait. Understand this. These are by the
very concept of a world view you cannot confirm or falsify scientifically either one of these models. They both have religious connotations. They both have scientific implications. And one or the other must be correct. There is no third alternative. In other words, either things can be explained by continuing natural processes or they can’t. Those are the two models, and what we are saying is that assuming these are two world views, two paradigms, two models, two frameworks that cannot be confirmed or proved, or disproved by strict scientific method. Therefore, we use these two models as vehicles for predicting and correlating data. We have tried to show that the creation model does a better job of it. We have not talked about the six days of creation. That is the Biblical model. Nor the specific age of the earth, 4004 B.C. or something. That is the usher chronology. We have just said that there must have been an original creation and that a great deal of scientific evidence does point to a recent creation, but that is the matter of just looking at all of the scientific evidence. Those processes that indicate an older perhaps uranium dating goes to indicating a younger perhaps the decay of the magnetic field. These are two scientific processes that can be studied. And all of this ought to be on the, in the books and in the classrooms for young people to hear
and evaluate for themselves and not be brainwashed in only one model, either creation or evolution.

Slusher:

I want to add one thing to what Dr. Morris has said since this question was indefinite as to which of the two of us. You are talking about postulating something outside the system to start it. Well, in common experience here on the earth for effects, there are causes. And I think it is certainly far more reasonable to say that when you see a set of effects there must be something real that causes it rather than saying that somehow or other chance is a god in which you have a self-transformation of a system to produce a set of effects. Certainly in physics when we talk about an effect we talk about a cause for it.

Question:

My question is dealing with the entropy side of the business concerning the earth. Okay now, entropy is always increasing and as so we say that things go from order to disorder, downhill. Okay? But in isolated systems on the earth we see order going uphill. Disorder from liquid water going to ice formations. Okay? We also see, and that, how do you explain that? And also how do you account for that in a relationship to a nice
cryalline state like that which of course is, it is metallic, oxygen and hydrogen, but also carbon in oxygen and hydrogen are metallic type chemicals too which make up life, sodium chloride which he described to us as forming crystalline structures all also form nice structures spontaneously when allowing to crystallize when the water evaporates. So why is it that these molecules which make a...why is it that these atoms, carbon hydrogen and oxygen cannot come together also into a structured form?

Slusher:

I take it that you are referring to Dr. Morris and me and I will make a comment. He may want to make a comment on it. Why I agree with you 100%. If you take just the water itself obviously when it freezes and is a solid at zero degrees centigrade it has less entropy than when it was water at zero degrees centigrade. But you can't just take, when you talk about entropy, just the water itself. You have to take all it is affected by, but the point is this. Is there any more information in water at zero degrees centigrade as a solid. Now information. As the information theory menus is the term than information, well, functionality, new complexity. Something, order is order and information. Order and information are really two different things. Sometimes they are
synonymous but sometimes they are different. For instance if I took this piece of paper right here, tore it into pieces, dropped it on the floor, most of the time it would form a disordered arrangement there on the floor. But now and then when I drop those pieces there it might form a circle or it might form a square. Now that is an ordered arrangement. I agree. And the entropy is less, but is there anymore information in that than there was previously? Not unless from the outside I say that those scraps of paper in a circle means the building is on fire, run for the exit or that something of that sort. It is something that is put in from the outside. Now sometimes at very low temperatures you can get a decrease in entropy. Not often. But a decrease in entropy because there are other things than just entropy that is involved there. It has to do with free energy and other things, but yet there is not an increase in information. You have to have in order to get an increase in information you must have a decrease in entropy or an increase in order. But in some cases you can get an increase in order without an increase in information. One last example then if Dr. Morris wants to say something fine, this will be my last comment on it. A German physicist by the name of Igan said he could beat the second law of thermodynamics and he took the letters of the English alphabet and put them on
cards and he said I pull those, a certain number of those cards out of there and most of the time I didn’t get anything, but he said now and then I would get a sequence of letters such as NO, YES, CAT, and so forth. And he said therefore I have beaten the second law of thermodynamics. Not so at all because NO doesn’t mean a thing in the world in Russian. NO doesn’t mean a thing in the world in Hindu standing. YES doesn’t have any meaning unless it is something assigned from the outside. Now and then you can get a local decrease in entropy, but you don’t get an increase in order. I mean in information. You must in order for things to move upward there must be an increase in what is referred to as information as well as order. That is not nowhere information. That describes purely its elastic properties. It has nothing to do with what the physicist of information engineer calls information.

Question:

I have a question for the pro-side. The critical issue in the evolutionary theory involves the finding of transition fossils and from my understanding a transition fossil has the characteristics of a higher form and the characteristics of a lower form of life. Just by going out in the backyard I can find any number of living forms
that have characteristics of higher forms of life and those of lower forms of life. How do you determine which fossil is actually a transition and which one is another species.

Schwinner:

Well, first I would like to hear where your backyard is. Actually I am not sure what you are talking about. Could you please specify what you mean by what you can find.

Question:

Apparently say the eye is a very complex organism. Alright. Human beings are complex organisms, we have eyes. And yet you take say a common housefly. It has a prototype of the eye. Alright. And then, but also say the housefly has a lower characteristics of a creature of less complexity.

Schwinner:

Okay. I think I see what you are driving at. With the housefly eye and the eye of a squid and intervertebrate eyes and a few other kinds of eyes, for example those in the common skeleton have virtually no structure relationship among each other. They are independently evolved structures. It is pretty well
documented. The, when we talk about transition fossils, transition forms, what we are talking about are organisms that have common features. As far as I know except for the fact that it said they both, you and a housefly, are both fairly sophisticated structures. I don’t believe you have a whole lot of parts in common. I mean for example, I don’t observe you to have six legs. And I am not baggering you, I am just trying to tell you, give you an illustration. You really don’t have a lot of features in common with your housefly. However, if you would like to find, if you would like to examine some of the fossils of early primates that have been found or early homonoids, there you will find and our opponents did not discuss this, there you will find a whole range of fossils of organisms that have many features in common with you. So what I am saying is I am not exactly sure of your point, but you can’t go out in your backyard and find fossils, transitional between yourself and a housefly or other organisms. There are such fossils known but they are not, and they are very much like you, they are just a little bit different. Also, the whole, there is, this business of analogy of parts in one organism to parts in another organism is extremely good evidence of transition fossils. You have in your body, bones comparable to virtually all the bones in a fish, in an amphibian, in a whole other
organisms. You don't have any bones comparable to the fly, by the way. They don't have bones. They have external skeletons, but this is a very hard question. I am not exactly sure what your question is but directly I answered it. You are not going to find transitional forms in your backyard. It is not an everyday occurrence.

Okay. Could you redirect it more.

Moderator:

I am going to have to move on. We have time for two more questions and then the building is going to close up.

Question:

This question is directed do Dr. Morris. I noticed in your presentation and detected an excellent example of a case in which you have selectively extracted information and ignored or deleted important facts. I was quite surprised that you even mentioned the species, *australopithecus*. You have stated that because of some rather nebulous comparisons to other australopods that it cannot be considered as an early man form. However, you failed to mention that anatomical and archeological evidence demonstrates that the australopithecines were not only bipedal or walked upright, but that they also manufacture lithic tools. Do you always resort to deception in order to make the evidence fit your model?
Morris:

It would be nice if people could ask questions without ad hominem statements like that. There was certainly no deception and none intended and none given. Maybe there was a misunderstanding on your part as to what I said. The, what I said was that some very competent, very capable evolutionary anthropologists, such as Charles Oxnard such as Solly Zuckerman and others have refuted the concept that australopithecus walked upright, that he was in the line leading to man. They said that by a multivarious statistical analysis of all the dimensions of the limb bones, the knee bones, the data that were available, they found that australopithecus was not in the line leading to man. That was their considered evaluation. Now that was not mine. I am not anthropologist and I have not tried to make such measurements. I couldn’t if I wanted to. I was quoting what they said. Now that is another question. What I am telling you now is that some very competent anthropologists do not believe oslopitichus was in the line leading to human evolution. Others I said did. Men like Leaky and Johanson, they do. Here’s a difference of opinion. It is not settled. As far as the tools are concerned and well one other aspect of the upright posture, one of the main arguments favoring that is the
fact that Mrs. Leaky, Mary Leaky, found a few years ago
some footprints in a formation, I think an igneous, a
volcanic formation, I believe in Africa, a trail of human,
what looked like human footprints. That is a trail, right
foot and left foot and so on. And these were dated to be
the same age as australopithecus had been dated so it was
assumed that these were australopithecine footprints and
these were footprints from a creature who apparently
walked upright, but all she, all she had was the
footprints. They looked for all the world like human
footprints. Now how does she know then, in terms of the
two models approach at least, that these were
australopithecine footprints and not homo erectus or homo
sapiens footprints for that matter. As a matter of fact,
we point out frequently the human like footprints in Texas
in dinosaur age formations, cretaceous age formation, that
looked almost exactly the same as Mary Leaky’s footprints.
These we believe were true man that lived at the same time
as dinosaurs. That is a whole other question.

Question:

That has never been reported in a scientific journal
of any kind. It hasn’t been reviewed by other critical
scientists?
Morris:

This brings up this other question about referee journals and so on. This has been aluded to a moment ago by Dr. Slusher. It is true that our creationist scientists publish many papers in referee scientific journals. We just don’t admit we are creationists. If we do that then we wouldn’t have a chance. Our own ICR staff, I made a tally just the other day, we have ten scientists on our ICR staff and just our little group, the ones I knew about, I am not sure I got the whole list by any means, but over 150 referee scientific papers in scientific journals just by our little staff plus ten books, it had nothing to do with creationism. So it’s, this is another ad hominem track of argument. It really doesn’t relate to the evidence for or against evolution. The fact is that the australopithecine evidence is still very, very equivical.

Moderator:

Excuse me Dr. Morris, but I am going to let Dr. Schwinner respond and then we are going to close.

Schwinner:

Well, I would also like to point out that besides footprints, just by what Dr. Morris says there are pelvises and other skeletal materials from
australopithecus which show quite clearly that they were bipedal. He just forgot to tell you that. In addition, Bill do you want to make another point?

Frazier:

Yea. Just very briefly. I am very curious about what journals it what that Dr. Morris sent his article, his proposed article on the footprints to. When Mr. Jackson asked him, well has this ever appeared in scientific literature, the answer that Dr. Morris gave you was, well as you well know we have talked about the fact that the sciences are prejudiced against us. Well, what I would like to know and I would like a direct answer. What specific journal did you send that paper to? Who reviewed it? And what was the evidence they gave in saying not to publish it?

Slusher:

Well I am going to answer in regard to one aspect of this question, Dr. Frazier. The son of Dr. Morris can talk about the footprint article, but when I first went to the University of Texas at El Paso, I wrote a paper on the amount of helium in the earth's atmosphere. You know there is only just a small amount of helium there and when you consider the amount that is generated in the crust, the amount that is coming in from meteoric material and
the rate at which it was escaping, you have got far too small an amount for the age of the earth by the evolutionist game and I came up with a number vastly smaller than that. I sent a paper in to the American Journal of Physics, and that is a reputable journal, certainly a refereed one, and in it I went through the physics of showing there were no escape mechanisms that could get rid of the helium and I got the paper back after about a month from a man at Michigan State University in which he said, you ought to read James Genes book on the dynamic theory of gases. Well, when I was a graduate student that is what got me on to the whole problem, and I treated the problem exactly as Genes had done in his original textbook. The paper was sent back and it was noted there, you obviously must be wrong because you come up with a value vastly different from what we know to be the case. There is a perfect example you see of it getting sent back for that very reason.

Frazier:

Alright. Let me say that I, I would not want to argue the fact that there is prejudice in science. In fact you can find a number of interesting ideas that were initially rejected for one reason or another. In fact continental drift and plate technonics had a spotted
history prior to 1962 but you see I specifically asked Dr. Morris what journal he sent the information on the footprints to. I want an answer.

Slusher:
Well, he will say that. He will say something. I am going to say one other thing. When you talk about continental drift, the continental drift people haven’t rejected evolution. When you talk about all these ideas in geology that are different from the standard flow of ideas, all of these men are accepting evolution. Now you get a man who doesn’t accept evolution and he gets lumped far outside the continental drifters and everyone else. Maybe Dr. Morris would like to say something finally if I let him.

Moderator:
Well, can we just stop because we can go on and on. Okay. Alright. Let him end. Okay. Then we are closing I promise.

Morris:
He asked me specifically what journal I had sent my paper on dinasour and human footprints too. I haven’t written such a paper and therefore I haven’t sent it to any journal. I might however, refer you to the fact that
a new book that we have just published called *Tracking Those Incredible Dinosaurs and the People Who Knew Them* written by Dr. John Morris, who is on the faculty in geological engineering at the University of Oklahoma, has just been published. This has been reviewed by many creationist scientists. Now I suppose you assume that means they are not qualified. They do have Ph.D.s in their fields and so on, and so it has been thoroughly studied and thoroughly reviewed by a good many people and the data are there. That is the photographs, the measurements, the description, the geological interpretation and so on. Now I would just suggest that if you are really interested in this subject read the book and then if there is something wrong with it, well let us know and we will change.

Question:

That means you don't believe in submitting in the scientific literature?

Morris:

Question:

Specifically what?

Morris:

Specifically a set of articles on the cooling of bacheolous, you know are intrusions, the cooling of the earth itself reworking the old Kelvin problem about bringing radioactivity into the crustal layers of the earth, a paper in regard to the amount of helium in the earth's atmosphere, a paper in regard to the decay of the earth's magnetic field and what it implies about the earth, a paper in regard to the Pointing Robertson effect, and finally just recently a paper in regard to the instability in Saturn's rings.

Question:

Of course if the articles that you submitted to those journals, which are of course very reputable, if those articles contained the same quality of research that you have supported tonight I can see why they will reject it.

Answer:

Well, you know Dr. Frazier, Hans Alfen was quite right. The peer system and the crony system is going to perpetuate the system of evolution without a bit of doubt.
Moderator:

Regardless of where I stop somebody's going to hate my guts, so I am going to run to the car right now so if you will close your eyes, let's thank everybody. And thank you for coming.
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