Debating Scientific Origins: Can Intelligent Design be Supportively Involved in Natural Science Debates on the Origin of Life?

BY

MICHAEL SCOTT FARR WILLIAMS

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DECLARATION

I, the undersigned, hereby declare that the work contained in this mini-thesis is my own original work and has not previously in its entirety or in part been submitted to any institution for a degree.

Signed_____ Date_____

DEDICATION

This mini-thesis is dedicated to the following people who have supported and encouraged me throughout this process

- My lovely wife Nami who is always there for me
- Craig Marlowe and Donald Tinder whose encouragement has led me to study the Christian and Hebrew scriptures in a scholarly way
- Damien Decremer who inspires me with his scholarship and scientific encouragement
- Dr. Mark Pretorius without whose kind encouragement I would not have finished this project

ABSTRACT

This study endeavors to understand the writings of Ken Miller and Eugenie Scott in terms of their objections to Intelligent Design being involved in the Natural Science Debates on the Origin of Life. These writings include Ken Miller's books *Finding Darwin's God- A Scientist's Search for Common Ground Between God and Evolution* and *Only a Theory- Evolution and the Battle for America's Soul*. These writings also include Eugenie Scott's books *Not in Our Classrooms- Why Intelligent Design is wrong for Our Classrooms* and *Evolution vs. Creationism - An Introduction*.

Further, this study identifies the objections these two authors have with Intelligent Design and looks for possible solutions from the Intelligent Design Movement. The idea is that advocates of both sides are quick to judge and slow to listen. This study is not to convince one side or the other, but to simply listen to the objections and possible answers from both sides. In this way a bridge can be made between the two sides and these divergent groups can begin to understand one another.

The objections that were raised by Miller and Scott include Miller's objections to the age of the earth, limitations on evolution's mechanism of natural selection, family trees in animals, Aristotle's idea of four distinct kinds of causes and finally design imperfections. This study also brought out ID's connection with creationism and its contention with mainstream science.

ID advocates answer these objections by saying that Intelligent Design (hereafter designated as ID) is not necessarily connected with a literal Genesis or a young-earth position. They do contend that the scientific community and its reliance on naturalism is a stumbling block for the Intelligent Design Movement. The study also explores the nature of a designer and how this affects the acceptance of intelligent design. The study then moves to the proper use of science as expressed in the scientific method and how the concept of a designer could hinder the acceptance of intelligent design.

The study continues with how the Christian and Hebrew scriptures relate to the issue of ID and its objections. Finally the study moves on to give some practical implications and suggestions on how ID can answer these objections.

Table of Contents

INTRODUCTION

i. Introduction

Title

Debating Scientific Origins: Can Intelligent Design be Supportively Involved in Natural Science Debates on the Origin of Life?

Problem Statement

As vocal opponents of Intelligent Design what light do Ken Miller and Eugenie Scott shed on what obstacles would the Intelligent Design Movement have to overcome to be supportively involved in the scientific debate on origins?

Sub-problems

- What do Intelligent Design advocates say about these obstacles?
- What are the limits and proper use of science in determining the involvement of Intelligent Design in natural science debates on the origin of life according to these two authors?
- How does the nature and role of a designer effect the involvement of Intelligent Design in natural science debates on the origin of life?
- What is the Biblical reaction to the objections raised by Miller and Scott?
- What are the practical applications of the recommendations of Ken Miller, Eugenie Scott, and Christian and Hebrew scriptures as to the involvement of Intelligent Design in the scientific debate on origins?

Hypothesis

The author will show that the Intelligent Design Movement as a whole must adapt its strategy to match the present day definition of science and the present pro-evolution paradigm that is prevalent in science. This may not be possible due to the nature of a designer and a new strategy will need to be developed. Further, the

author will show that the nature and role of a designer will impact the acceptance of Intelligent Design in natural science debates on the origin of life and possibly hinder Intelligent Design from satisfactorily answering the objections of Miller and Scott.

Delimitation of the study

The study will be restricted to these two authors and the objections they raise. The Intelligent Design response (as limited to the views expressed by the authors presented) as well as a Biblical response will be limited by these same objections.

Research design

The study will hear and evaluate without bias or prejudgment the objections that are raised by Miller and Scott and counter-points by members of the Intelligent Design community will be examined. The study then endeavors to determine if Intelligent Design can meet the objections raised by Miller and Scott. Next, the study will explore the nature and role of a designer and how this affects Intelligent Design and its ability to answer the objections of Miller and Scott. Finally the study endeavors to reflect on the effects that intelligent design's answers to Miller and Scott's objections would have on science and how science relates to a designer. This study will employ a literary approach using a systematic model. The study will incorporate past and present literature on the stated subject. The primary source of research will be the present dialogue and writings of Ken Miller and Eugenie Scott. An analysis of relevant biblical texts relating to a designer will be contemplated using rhetorical criticism. This analysis will be done to see the effects a creator would have on the role of Intelligent Design in natural science debates on the origin of life. A working model will then be advanced to improve the dialogue between Intelligent Design and science.

Presuppositions of the researcher

I believe that God created the world as outlined in Genesis. I believe that there is evidence for a designer that cannot be ignored, which is substantiated by science, and supported by sufficient Biblical content. I also believe that there is some evidence of change over time in organisms. The scientific study of the age of the earth seems to weigh in on an old earth, but Biblical texts seem to weigh in on a

young-earth. This dichotomy needs to be explored further. Although the author comes to this study with certain biases, these will be tempered as the opinions of Miller and Scott will be taken seriously.

Main resources

- Miller KR 1999. *Finding Darwin's God: A Scientist's Search for Common Ground Between God and Evolution*. New York: Harper Collins.

- Miller KR 2009. *Only a Theory: Evolution and the Battle for America's Soul*. New York: Penguin Books.
- Scott EC and Glenn Branch (ed.) 2006. *Not In Our Classrooms: Why Intelligent Design is Wrong For Our Classrooms*. Boston: Beacon Press.
- Scott EC 2009. *Evolution vs. Creationism: An Introduction* (2'nd Edition). Los Angeles: University of California Press.

Critique and analysis of the state of the current research

- **Ken Miller**

Ken Miller is a biology professor at Brown University. He describes himself as a theist and is constantly asked how he could believe in evolution and be a theist (Miller 1999). He also grapples with evolution and Christian faith. He asks, “surely we could not be both the products of evolution and the apple of God's eye” (Miller 1999:233) and answers in the affirmative. Ken Miller seems to admit the inadequacies of science in answering all of life’s questions.

- **Eugenie Scott**

Eugenie Scott is the director of the National Center for Science Education in Oakland California. In 2002, she received the National Science Board’s Public Service Award for “her promotion of public understanding of the importance of science, the scientific method, and science education and the role of evolution in science education” (http:/ncse.com/news/2002/05/scott-receives-public-service-award-from-national-

science-bo-00380 assessed July 26 2013). Eugenie Scott says that we can do science without attacking God (Scott 1998:24-25). This sums up her *ethos*.

They are both known for their promotion of science as the supreme way of knowing. Miller (1999) says that scientific evidence is all you need to prove the case for evolution, and that science is a superior way of knowing in that it transcends all boundaries. Others have remarked that the scientific method is the most reliable (Collins 2006) and not open to supernatural explanations (Pigliucci 2001).

For Miller and Scott Intelligent Design is not science and the scientific world should be kept pure from such influences. Eugenie Scott asked the question, "what is the relationship between this alleged "intelligence" and "divine creation"? Implied here is Scott's central theatrical question, if divine creation is what the skeptics of Darwinism have in view when they speak of "intelligence" how can this theory be called scientific at all, since divine creation is a "subject outside of science" (Woodward 2003:16-17)?

Ken Miller states that, “claims that an intelligent designer is needed to explain evolution of complex systems are deeply flawed” (Miller 2007:1055). Miller goes on to state that the origin of man can have a purely materialistic beginning and there is no theological reason against this idea (Miller 1999). This is not provable, but likely (Miller 1999). A designer is not needed for the origin of life (Miller 2007:1055; Dawkins 1996)

Finally they believe that evolution is unquestionably true. Scott states that, “it is scientifically inappropriate and pedagogically irresponsible to teach that scientists seriously doubt the validity of evolution” (Scott and G. Branch 2003: Abstract). Collins has said, “Evolution, as a mechanism, can and must be true. But that says nothing about the nature of its author” (Collins 2006). Miller finally says in his book, *Only a Theory: Evolution and the Battle for America's Soul* that evolution is more than a theory and the fate of American science hangs in the balance (Miller 2009).

Scott also strongly opposes the “evolution deniers” (Scott 1997:263-289; Scott 2006:449-451; Scott 2009; Scott 2004; Scott 2003:282). Some writers say that no biologists doubt this theory (Collins 2006).

If evolution is true, and Intelligent Design is not science, than it should be kept out of the public school. Mirsky (2006) said in the abstract to his *article Teach the Science* that "Wherever evolution education is under attack by creationists thinking, Eugenie Scott will be there to defend science - with rationality and resolve."

Clearly this is of great importance to Eugenie Scott. She believes in the inappropriateness of teaching creationism (Scott, G. Branch 2003:499-502; Scott 2006; Scott, and G. Branch 2004:116-117) and is clear on the problems in teaching evolution (Scott 2004:48-49; Scott 2001:75-96) along with (Hazen 2006:106; Clemmitt 2005). Just asking the question causes controversy (Poole 2008:123-129; Sarkar 2009:291-305; Scott, Matzke 2007:8669-8676).

Rationale for the research problem

In researching this topic it was found that advocates of both sides of this issue are quick to judge and slow to properly evaluate each other's position. I want to really hear these authors and learn what are the inadequacies as well as the virtues of Intelligent Design and its reliance on a designer. This study is not about evidence, but about the underlying assumptions behind the evidence. Assumptions such as science are all knowing and that the notion of a designer is not science. Can theologians disagree with scientific findings? How can they do this with respect?

How this study contributes to the existing field

This study will contribute to the existing field in the following ways

- By listening with respect to Miller and Scott and the objections they raise to Intelligent Design without judging, defending or bias:
- By exploring what subjects are outside of science according to Miller and Scott:
- By exploring the tension between the perception that science is all-knowing and keeping room for a theist:
- By exploring the notion of a creator and how this relates to the scientific method and the Intelligent Design Movement:
- By exploring the practical implications for the Intelligent Design Movement.

Conclusion to the proposal

Ken Miller and Eugenie Scott will be closely examined and their recommendations for Intelligent Design taken seriously. A new paradigm may be needed to sustain Intelligent Design into the next decade as a scientific contender.

xiii. Objections from Miller and Scott

In this study, William Dembski will present the hypothesis for intelligent design. From this hypothesis, the objections of Ken Miller and Eugenie Scott will be presented. Ken Miller's books will be analyzed concentrating on *Finding Darwin's God A Scientist's Search for Common Ground Between God and Evolution and Only a Theory Evolution and the Battle for America's Soul*. Correspondingly, Eugenie Scott's books will be analyzed concentrating *on Not in Our Classrooms Why Intelligent Design is wrong for Our Classrooms and Evolution vs. Creationism an Introduction*. The objections from these two authors are presented without bias and taken seriously.

xiv. What is Intelligent Design?

In the natural world there are many organisms (plants and animals) and structures (corresponding parts to these plants and animals) that have the appearance of design. If these organisms and structures are the result of purely natural forces, than they can rightly be called apparent design. If purely natural forces cannot account for these organisms and structures than ID makes the claim that they might be the work of intentional design. When one examines Mount Rushmore, which is clearly the work of intentional design, and the old man of the mountain in New Hampshire which is clearly the work of apparent design, one needs a reliable way of telling the difference. For writers like Richard Dawkins all of nature would fall into the category of apparent design. Dawkins comments on this in the preface to his book *The Blind Watchmaker* by saying, "The complexity of living organisms is matched by the elegant efficiency of their apparent design" (Dawkins 1996:XVI).

Dembski (2004) says that a major component of ID is to differentiate intentional design from apparent design. Dembski (2004:75) explains this relationship with ID's hypothesis "Intelligent Design begins by raising the following possibility: Might there be natural systems that cannot be explained entirely in terms of natural causes and that exhibit features characteristic of intelligence?" In other words, Dembski proposes that the focus of ID is to detect intentional design in organisms and structures and to show how design could overthrow naturalism. With this hypothesis, Dembski (2004) not only attacks Darwinism, but distances ID from mainstream science by attacking naturalism as well. Dembski is clear in saying that it is not necessary for ID to know the motives behind what is designed, but to simply detect intentional design in biological systems in contrast to apparent design. If this detection can be done in a scientific way than a bridge will be created between science and theology.

Lennox (2009:11), comments on the hypothesis proposed by Dembski (2004), with these words…

> At least some of the heat results from the fact that the term 'Intelligent Design' appears to convey to many people a relatively recent, crypto-creationist, anti-scientific attitude that is chiefly focused on attacking evolutionary biology.

xv. Objections to Intelligent Design

This observation from Lennox (2009:11) encapsulates the objections that Miller and Scott establish in their respective writings. Firstly, Lennox talks about "intelligent design" which points to Miller's five design objections to intelligent design, focusing on objections with the concept of design and the need for a designer. Secondly, Lennox talks about a "relatively recent" theory, which points to objections with ID's recent concepts of Complex Specified Information and Irreducible Complexity. Thirdly, Lennox talks about ID being "crypto-creationist". This idea points to objections with Intelligent Design promoting creationism. Finally, Lennox talks about an "anti-scientific attitude that is chiefly focused on attacking evolutionary biology". This idea points to scientific objections with intelligent design.

xvi. Miller's 5 design objections to Intelligent Design

Miller's style throughout the two books, *Finding Darwin's God and Only a Theory - Evolution and the Battle for America's Soul* is to ask many rhetorical questions of creationists and ID supporters. Miller's critiques of Intelligent Design place creationists and ID supporters in the same category. Creationists and ID supporters apparently must answer these questions or evolution will win the debate by logic alone. Miller's first rhetorical question is: who made us? Miller (1999) answers his own rhetorical question by saying that most creationists and ID proponents would conclude that God made us. God is directly involved in our creation. Miller answers this charge by saying that there is no need for direct intervention in our creation. Science has shown, in Millers view, that nature can direct its own creation through evolution and natural selection. Miller (1999:217) asks the related rhetorical question;

> But why then are they so determined to fix in the past, in the supposed impossibility of material mechanisms to originate species, the only definitive signs of God's work?" God does not have to be directly involved, but "material mechanisms" are enough to "originate species.

This forms the backbone of Miller's objections to design itself. For Miller, recent scientific discoveries have made the direct intervention of a designer scientifically untenable. Miller presents these scientific arguments and then explains the objections they create with the designer.

Miller's first design objection comes from the age of the earth that creationists and some ID supporters say is less than 10,000 years (Scott 2006; Johnson 2010). Miller (1999) claims that there is a scientific consensus on the age of the earth being billions of years old. Miller explains that this is a purely scientific consensus using experiments with uranium and thorium. Uranium or ^{235}U is an element that over time converts to an isotope (different numbers for mass but the same atomic number) of lead known as ^{207}Pb. In 713 million years one-half of a sample of ^{235}U will have converted into ^{207}Pb. The fact that there is still ^{235}U on the earth's surface is a clear indication that the earth is not infinitely old. If the earth were infinitely old, than all of the ^{235}U would have converted to ^{207}Pb. To determine the age of a rock you need to know how much ^{207}Pb has been added since its beginning and how much ^{207}Pb was

there at the beginning. There are three such tests using uranium and thorium and each check each other because they use as their base a different isotopic series. These various tests give a conclusive age to the earth of approximately 4.5 billion years, and not the 10,000 allowed by creationists and some ID supporters.

The uranium and thorium tests have agreed that the earth is approximately 4.5 billion years old. For Miller (1999) a designer would have to intervene and make an earth with a “consistent but incorrect timeline”. The “appearance of age” would not only be incorrect, but also set to resemble an exact age for everything that we see. For creationists and some ID supporters to harmonize the age of the earth as set in Genesis than they must either accept this incorrect timeline or argue about the constants of the universe.

Miller’s second design objection comes from the limitations that creationism and some ID supporters put on evolution’s mechanisms. Miller (1999:7-8) Described Charles Darwin’s argument by saying that living organisms are engaged in a struggle for existence with the same species pushing for the same resources. Struggle plus variation results in natural selection. Miller’s (1999) argument is that the mechanism of natural selection is testable and more than enough to account for the diversity of life.

Scott (2006) relates that for creationists and some ID supporters natural selection accounts for only small changes within “kinds”. The designer made groups of organisms that He called “kinds”. According to the creationist dogma, you cannot break the “kind” barrier, but changes within a “kind” are possible. A dog will always remain a dog, but different kinds of dogs remain possible. Scott continues by saying that for creationists and some ID supporters this is not evolution at all but microevolution within a “kind”. This is not a tenable scientific point of view for Scott (2006). Scientifically, microevolution happens within a specific gene pool and macroevolution occurs between gene pools.

According to Miller (2009) creationists, ID supporters and evolutionists would agree that microevolution is a fact. Miller would say that evolutionists and ID supporters would contend that macroevolution only occurs in the minds of

evolutionists. If a change would break the “kind” barrier, than it is considered the work of the direct intervention of the designer.

Miller (2009:131) goes on to explain how science has shown that a direct intervention of a designer is not necessary by using studies in embryology.

> Each of these embryos possesses the same developmental tool kit, revealing both their common ancestry and a similarity of form and function produced by the workings of the evolutionary process. Today the vertebrate embryo not only argues for the reality of evolution, it helps to show us in detail how that process works.

This betrays both the fact of evolution and the common ancestry of the organism. This is powerful evidence for Miller that the barrier between microevolution and macroevolution is not a scientific one. Carroll (2005:291) explains.

> The continuity of the tool kit and the continuity of structures throughout this vast time illustrate that we need not invoke very rare or special mechanisms to explain large-scale change.

In other words, the boundary between microevolution and macroevolution does not need explanation in terms of an interventionist designer. Miller (2009:133) tries to put the death knell to creationists and ID supporters by continuing;

> To the ID crowd those are chilling words. They suggest that we really do know enough about the mechanism of evolutionary change to account for the large-scale changes that produce genuine novelty. By suggesting that the capacity for macroevolutionary change is already present in life, they do away with the need for a designer to infuse such change into it.

The backbone of Miller’s objections to design, is the unneeded infusion by a designer has been borne out by science according to Miller.

Miller (1999) questions placing such limitations on natural selection by imposing the labels of microevolution and macroevolution. In Miller’s opinion, it is a scientific dead end. He continues that a designer would need no such mechanism as natural selection and could create anything he wanted to. You could not predict, test or provide evidence for this scenario, as a designer would not have to leave any evidence behind. Miller says later “In every case design offers a neater, cleaner, and less troublesome solution. After all, when your explanation has no testable

steps, there are no means to disprove it. It just sits there, almost like the smile on Alice's Cheshire cat" (Miller 2009:108). The concept of a "kind" and the boundary between microevolution and macroevolution has no validity in true scientific circles.

Miller's third design objection comes from the apparent family trees of animals. Miller (1999) recounts that when one studies the history of the earth two patterns arise. Firstly, there is a sequence to new organisms. The single-celled organisms arrived first and through the millennia, the organisms became increasingly complex. Secondly, new species have a remarkable resemblance to the old species that they replaced. For Miller these two observations are not explainable for creationists and some ID supporters who use the Genesis scenario.

In *Finding Darwin's God* Miller talks of the elephant series. Miller notes that there are many elephant-like animals in the fossil record, from the paleomastodon thirty-five million years ago to the sole surviving species elephus maximus. For Miller (1999) one would need to believe that a designer created each of these species independently of each other. Miller reports that in the last six million years there have been twenty-two distinct species of elephant and nine different species of the genus elephas in the last four million years. These have all come and gone only for the designer to watch them go extinct.

Miller (1999) then makes a challenge that ID theorists make a claim for design and then do not attempt to explain it as they remain quiet about the extinction of so many of the elephant series. What one actually sees in nature, in Millers view, is a progression where new species appear all the time and most of them go extinct as seen in the fossil record.

Was each of these species of elephant an independent creation or are they the first members of the species that follows? Miller (1999) states that there seems to be a contradiction here. For a designer to be a clever as Christians claim Him to be, than how does what he creates not last in the end? The average species becomes extinct in approximately 2 million years and the average insect becomes extinct in approximately 3.6 million years according to Miller. How do ID theorists explain the clear progression that scientists have found in the fossil record? It

becomes clear that the designer did not take just six days. The designer was very busy for many billions of years and failed most of the time, according to Miller.

Miller's fourth design objection comes from Aristotle's idea of four distinct kinds of causes. Miller (2009) describes Aristotle's four causes as material cause, formal cause, efficient cause, and final cause. A juice glass has as its material cause that it is made of glass. The formal cause of the juice glass is that it is cylindrical in shape. The efficient cause is that this juice glass was made in a glass-blowing factory. The final cause of this juice glass is that it is meant to contain juice for drinking. Miller refers to the work of Charles Darwin who, in Millers view, made the breakthrough discovery in determining the efficient cause as being natural selection and the final cause is to survive. Thus for Miller, Aristotle's four causes, as expressed in Darwinism, are all testable and verifiable in laboratories, whereas Aristotle's four causes, as expressed in ID are not.

The efficient cause for Miller (2009) as expressed in ID is the unknowable whims of a designer. Miller then asks the rhetorical question: what is the final cause of devastating organisms lime the mosquito or bubonic plague? According to Miller, ID does not have an answer.

Miller's fifth design objection comes from design imperfections. Miller (2009) recounts many scientific examples of design that, in Millers view, would not have been designed with the imperfections that are found in nature. The human genome is one of Miller's targets. Miller (2009:36-37) admits freely "the human genome, the complete set of all our genes written in the language of DNA, is an impressive piece of engineering, even overwhelming in terms of its size and complexity." Miller asserts that the difficulty with the simple assent to design is that the genome is replete with mistakes and useless genes. One of these genes is the GLO gene to make vitamin C. The correct GLO gene is present to make vitamin C, but it is non-functioning in humans. Miller defends the idea of our ancestry with earlier primates. He says that humans have many errors in our genome that match errors in other primates, and humans have two fused chromosomes that originated from other primates. Finally, Miller informs us that our genome is full of pseudogenes. Pseudogenes resemble a working gene but do not seem to have a viable function. Miller (1994:32) informs ID proponents;

> The theory of Intelligent Design cannot explain the presence of nonfunctioning pseudogenes unless it is willing to allow that the designer made serious errors, wasting millions of bases of DNA on a blueprint full of junk and scribbles. Evolution, in contrast, can easily explain them as nothing more than failed experiments in a random process of gene duplication that persist in the genome as evolutionary remnants.

Miller (2009) then asks ID to explain these "errors" in human's genetic makeup. Miller says this would be a designer with mighty "strange intentions" and "unknowable whims". (Miller 2009:134) concludes by saying;

> As it turns out, there really is a design to life, but it is not the clumsy, interventionist one in which life is an artificial injection into nature, a contradiction of its physical laws. Rather, it is a design in which life emerges from the laws of the universe around us. That conclusion is unavoidable, robust, and scientific.

The intervention of a designer does not explain these errors in our genome and ID cannot explain the "unknowable whims" of the designer so ID cannot be a true scientific theory.

xvii. Objections with the Intelligent Design concepts of Complex Specified Information and Irreducible Complexity

Scott (2006) states that the theory of ID is not a well-established theory in that it has only two concepts "Irreducible Complexity" and "Complex Specified Information". These two concepts are both attacking purely naturalistic explanations and looking for intentional design in organisms (plants and animals) and structures (corresponding parts to these plants and animals).

xviii. Complex Specified Information

Dembski (2004) states that the determination of design comes from whether an organism or structure is contingent, complex and specified. Scott (2006) explains that for something to be contingent it must account for more than just the simple necessity of its physical properties. Dembski explains that if an organism or structure is contingent it means that no law of nature forces the object in question to be the way it is. Scott states further that for something to be complex, it must account for more than chance. Dembski (2004:35) states that "systems are

specified in virtue of their independent functional requirements and they exhibit a high degree of complexity." In other words, we are looking for complex systems that have a specific function that cannot be attributed to chance. In an attempt to make a truly scientific theory, Dembski created the explanatory filter. Dembski uses this filter as a flow diagram. If it is not contingent, it can be assigned to necessity. If it is complex, it means it is unlikely. If it is not complex, it can be assigned to chance. If the object is not specified, it can also be assigned to chance. Thus if an object is contingent, complex and specified, than it can be said to be designed.

The first objection to Dembski (2004) and his concept of Complex Specified Information comes from the idea of contingency. Scott (2009) says that the explanatory filter is not a reliable detector of design because it cannot eliminate all options at the contingency level. We cannot know all of the physical properties and laws of nature that could possibly explain whether an organism or structure is intentionally or apparently designed.

Scott (2009) gives the example of a story that was told by Wilkins, W. Elsberry (2001:711-724) of a person who was walking in a forest and a person sees a ring of toadstools that were not there yesterday. In the year 800 CE, you would have said that it was designed as a fairy ring or a place for fairies to dance. For this structure to be designed, it needs to be contingent, complex and specified. In the year 800 CE, you could not account for the sudden appearance of the ring from any known law of nature and it seems to be doing more than its simple physical properties would dictate. It would pass the test of contingency. According to Scott, you would get a false positive for this structure in the year 800 CE.

Scott (2009) goes on to explain that science has progressed since the year 800 CE. We know now that toadstools reproduce in this fashion. We now know the laws of nature that produced this structure and it is thus not contingent. Since the explanatory filter relies on the scientific knowledge of the era that the organism or structure is observed, it cannot be used as a reliable indicator of intentional design.

The second objection to Dembski (2004) and his concept of Complex Specified Information comes from philosophy. Hewlett and Peters in (Scott 2006) claim that nature should be able to self-assemble as naturalism dictates. Miller

(2009:160-161) points out that this was Saint Augustine's view. Augustine said "the universe was brought into being in a less than fully formed state, but was gifted with the capacity to transform itself from unformed matter into a truly marvelous array of structure and life forms." If nature does not have this capability, than Dembski's argument would be an argument from the philosophy of science and not a truly scientific one. Hewlett and Peters in (Scott 2006) relates that Thomas Aquinas talked about primary and secondary causation. God is the primary cause as he created and sustains the world. What happens naturally in the world is part of the secondary causation, which scientists can now study, leaving the primary cause to theologians. If an appeal is needed as Scott says "to a transcendent designer who intervenes in otherwise natural processes" (Scott 2006:68) then one brought back to the primary and secondary causation of Thomas Aquinas. Every instance of intervention would need to be a primary cause. This would become a theological argument that says that nature is not capable of self-organization without intervention by God. This cannot be a scientific argument as science is a search for solely natural explanations.

This would leave us with two options according to Scott (2006); deism where everything is there at the beginning to develop life and the designer does not interfere in the world after the initial creation. Alternatively, a theist position where the intervention by God would rightly be called a miracle cannot be a scientific theory at all. Scott opts for a middle position where ongoing intervention from God is purely natural and not an intervention into otherwise natural process. This position would align science with naturalism.

xix. Irreducible Complexity

Denton (1986:91) traces the concept of Irreducible Complexity to as far back as 1829.

> Every organized being forms a whole, a unique, and perfect system, the parts of which mutually correspond and concur in the same definitive action by a reciprocal reaction. None of these parts can change without the whole changing." Michael Behe made this concept popular in his book "Darwin's Black Box The Biochemical Challenge to Evolution (Cuvier 1829:60).

Behe (2006:39) says that “by irreducibly complex I mean a single system composed of several well-matched, interacting parts that contribute to the basic function, wherein the removal of any one of the parts causes the system to effectively cease functioning.” The argument according to Scott (2006) would say that if natural selection cannot make complex structures than a designer is needed to explain them.

The first objection to Behe and his concept of Irreducible Complexity is the same objection that was launched at Complex Specified Information by Scott (2006). Behe is confusing primary and secondary causes the same as Dembski was. Every instance of Irreducible Complexity would need to be a primary cause.

The second objection to Behe and his concept of Irreducible Complexity comes from Behe’s assumption that evolution can only work by slowly improving a structure in a systematic fashion. What Behe does not understand according to Scott (2006) is that you can not only improve a structure, but you can also change its function. The wings of birds come from the forelimbs of dinosaurs. The forelimbs of dinosaurs were the modifications of the front feet of lizards. The same structures were transformed through necessity. For Behe, this would create a problem. In the later editions of the book, *Of Pandas and People* it was brought out that;

> Intelligent Design means that the various forms of life began abruptly thorough an intelligent agency, with their distinctive features already intact - fish with fins and scales, birds with feathers, beaks and wings, etc (Miller 2009:116).

The wings of birds cannot from the forelimbs of dinosaurs, as these “distinctive features” were “already intact”. From the ID literature, it is clear that a structure cannot change its function over time as Scott (2006) suggests.

The third objection to Behe and his concept of Irreducible Complexity comes from the classic God of the Gaps argument. The God of the Gaps argument would say that if present day science does not have the answer than God must have done it. Many examples were given by Scott and Miller on explanations that were once attributed to God and are now explained by science. Scott (2009) said that Behe’s argument could be one from ignorance as he uses an intelligent designer when he cannot find a natural explanation. (Scott 2009:125) asks;

> But even if natural selection were unable to explain the construction of irreducibly complex structures, does this mean that we must now infer that intelligence is required to produce such structures? Only if there are no other natural causes - known or unknown - that could produce such a structure.

Does Behe know all of the possible natural explanations both now and in the future?

xx. Objections with Intelligent Design promoting Creationism

Miller's first design objection came from age of the earth. He then moved to the limitations that creationism and some ID supporters put on evolution's mechanisms. He then moved on to the apparent family trees of animals. Next came Aristotle's idea of four distinct kinds of causes. Finally, Miller objected to design imperfections. One should note that many of these same design objections, raised by Miller, could similarly be traced back to creationism as well. According to Scott (2006), the main teachings of creation science are that the earth is under 10.000 years old. In their view God created everything in a moment of time and not gradually.[1] Furthermore, each species is independent of each other with no common ancestors; thus they have limited genetic variability and cannot cross the "kinds" boundary. The designer deemed the creation as "very good".

Throughout their writings, Miller and Scott equate creationism with ID. Their objections reflect this stance and, generally, the same objections are given to creationism and ID equally. In the earlier editions of the book *Of Pandas and People* it was presented that

> Creation means that the various forms of life began abruptly through an intelligent designer, with their distinctive features already intact - fish with fins and scales, birds with feathers, beaks and wings, etc" (Miller 2009:115-116).

In a later version it read

> Intelligent Design means that the various forms of life began abruptly through an intelligent agency, with their distinctive features already intact - fish with fins and scales, birds with feathers, beaks and wings, etc (Miller 2009:116).

[1] Often called Instantaneous creation or fiat creationism

ID advocates simply swapped out creation for intelligent design. In many people's minds, this deception cemented the contention that ID is simply "crypto-creationist" as said by Lennox (2009:11).

Further cementing this idea, Scott (2006) noticed that all the critical analysis arguments, supporting ID and attacking evolution, had their roots in creationism. If the tenets of creationism can be found in ID, than the objections to creationism could be launched at ID as well.

Lennox (2009) remarks that creationism used to mean simply that there was a creator or designer. Now it means adhering to a particular literal interpretation of Genesis as adhered to by creationists. Lennox reports that this makes one choose between creationism and ID. If one does not choose between creationism and ID than one is forced to accept ID as creationism. The idea that ID could stand on its own as a scientific theory would not be possible by the association between the two concepts. This obscures the demarcation between seeing and quantifying intentional design in nature and understanding who the designer is and what his or her motives are.

This "literal interpretation of Genesis" from Lennox (2009) forms the first objection to ID promoting creationism. There are other interpretations of the account in Genesis (Hyers 1983; Hewlett and Peters in Scott 2006; McGrath 2009; Miller 2009; Corner 1983; Briggs 2010) besides the extreme literal one of creationists and some ID supporters.

The first alternative way to read the Genesis account, according to Hyers (1983), is that Genesis is showing, by the order of the days of creation, a pronouncement of the pagan gods of that time. As Hyers (1983) recounts on the first day, Jehovah shows his superiority over the pagan gods of light and darkness. On successive days, Jehovah shows superiority over the pagan gods of the sky, sea, vegetation, sun, moon, and stars. On the fifth day, Jehovah shows his superiority over the animal kingdom to show that there is no divinity in them. On the sixth day, Jehovah shows his superiority over kings and pharaohs to show that there is no divinity in them. In this way "each day of creation takes on two principal categories of divinity" (Hyers 1983:101).

The second alternative way to read the Genesis account is the concepts of primary and secondary causation as explained above by Hewlett and Peters in (Scott 2006). According to Thomas Aquinas, God is the primary cause as he created and sustains the world. What happens naturally in the world is part of the secondary causation, which scientists can now study, leaving the primary cause to theologians.

McGrath (2009:40) Relates to us that Augustine does not limit the creation to the initial act, but allows the designer to continue working, allowing for an original creation and an ongoing creation. In other words, Augustine was promoting primary and secondary causation centuries before Aquinas. Corner (1983:10) would agree with this primary and secondary causation by saying, “if a Christian view of creation is to be reconcilable with the theory of evolution, then it has to show not merely that the world originated by God's will, but that it continues to exist by it”. The origination is the primary causation and the continuing is the secondary causation. Clearly for Augustine, Aquinas, Corner, Hyers and Miller there is more than just one way to read Genesis.

The second objection to ID promoting creationism states that Genesis cannot be a factual day-by-day account of the beginnings of life on planet earth. Miller (1999:254) argues;

> There is simply no theological reason to argue that life cannot have a material basis. There is, however, an abundance of scientific evidence showing the Genesis could not possibly be a step-by-step, factual account of actual events in natural history.

Miller (2009) goes on to say that for creationists to take Genesis literally is not scientific and requires that they reject all of present day science. They would have to ignore the design objections that Miller raised including the age of the earth, the apparent family trees in the fossil record and the sufficiency of evolution’s mechanisms to explain all of life.

The third objection to ID promoting creationism is that the arguments for creationism have been defeated long ago as Miller (1999:80) states;

> On a scientific basis, the claims of the creationists are especially easy to refute. Most scientists, quite rightly, have ignored the

> religious claims of the creationists, but those claims are worth noting if only to emphasize the insidious danger they present to both science and religion.

Scott (2006) noticed that the critical analysis arguments for ID were the same as the arguments that creationism has been using since the 1970's as evidence against evolution. The critical analysis arguments include; phylogenetic trees, transitional forms, the Cambrian explosion, Haeckel's embryo drawings and finally the origin of the DNA molecule and the information it contains. These have all been resoundingly refuted according to Scott. In one example by Scott quotes Richardson et al. (1988:983) and says;

> On a fundamental level, Haeckel was correct: All vertebrates develop a similar body plan (consisting of notochord, body segments, pharyngeal pouches, and so forth). This shared developmental program reflects shared evolutionary history. It also fits with overwhelming recent evidence that development in different animals is controlled by common genetic mechanisms.

If there is no positive scientific evidence for creationism and ID is linked to creationism, then ID and creationism are both overwhelmed by the scientific evidence against them.

xxii. Scientific objections with Intelligent Design

Lennox (2009:11) commented that ID was an "anti-scientific attitude that is chiefly focused on attacking evolutionary biology." This "anti-scientific attitude" forms the first scientific objection with ID as raised by Scott (2006) that there is not a serious scientific controversy over the factuality of evolution. Leading scientists and scientific educational associations such as the NABT (National Association of Biology Teachers), the NAS (National Academy of Sciences), and the AAS (Association for the Advancement of Science) have asserted that evolution is central concept that unites all of biology. These scientists and organizations have collectively rejected scientific creationism or ID creationism as valid science. Scott (2006) mentions that many scientists feel that ID is a form of pseudoscience and not worthy of any serious discussion. If it is a pseudoscience and not real science, and gathering evidence is impeded by ID's unscientific methods, then one is reduced to disparaging evolution and thus gaining a victory for ID.

The second scientific objection is ID's plan to overthrow naturalism. Dembski (1999:14-15) makes his plan clear in saying;

> The implications of Intelligent Design are radical in the true sense of this much overused word. The question posed by Intelligent Design is not how we should do science and theology in light of the triumph of Enlightenment rationalism and scientific naturalism. The question is rather how we should do science and theology in light of the impending collapse of Enlightenment rationalism and scientific naturalism. These ideologies are on the way out...because they are bankrupt.

For Dembski, scientific naturalism is as much a target as Darwinism is. Miller (2009) states that scientific naturalism or methodological naturalism does not count as a philosophy, but is a way of doing science, in other words the scientific method. When you attack naturalism, you attack the scientific method itself.

The third scientific objection with ID is that it will lead to the supernatural as science. Miller (2009:197) fears that "once the supernatural becomes a valid element in scientific inquiry, science will cease to be an empirical search for the truth of the natural world." When the Kansas board in 2004 had a 6-4 antievolutionist majority, they decided to amend evolution for the upcoming year. The Kansas board objected to the naturalistic bias that standard versions of evolution offered and offered their own. The Original definition of science in Kansas read "science is the human activity of seeking natural explanations for what we observe in the world around us." They changed it to "science is a systematic method of continuing investigation, which uses observation, hypotheses testing, measurement, experimentation, logical argument and theory building, to lead to more adequate explanations of natural phenomena." Why the expression, "more adequate?" Why get rid of the expression "natural explanations"? The addition of the phrase "natural explanations" was seen as stifling competing theories. They went on to say "methodological naturalism effectively converts evolution into an irrefutable ideology that is not secular or neutral. Naturalism is the fundamental tenet of non-theistic religions and belief systems like Secular Humanism, atheism, agnosticism and scientism." [2]

[2] Kansas Science Standards, Minority Report, p. 6. The Minority report was never formally published. It was placed online by pro-ID forces- http-//www.kansasscience2005.com/

Miller (2009) says that to defend science from atheism, the definition of science itself must be changed. This will lead to the supernatural and finally to having a theistic ideology as our science. Rationalism will be the true enemy as Dembski warned ID would accomplish. If theology and the supernatural becomes science than Miller (2009:197) warns “science will cease to be an empirical search for the truth of the natural world.” This breakdown of science will lead to a pseudoscience like ID with no support from the scientific community changing the very nature of science.

Chapter 1

What do ID Advocates say about these Obstacles?

1.0 Introduction to Chapter 1

In the Introduction, the works of Miller and Scott were discussed and their objections to ID were seriously considered. Miller's five design objections were also assessed including the age of the earth, natural selection, and the ostensible family trees in animals. Miller's fourth objection dealing with Aristotle's idea of four distinct kinds of causes and Miller's fifth objection dealing with imperfection was shown to be similar to that of a designer's motives. The Objections with ID itself were then discussed including the concepts of Complex Specified Information and Irreducible Complexity. Finally, the objections with Intelligent Design promoting creationism and the scientific objections to Intelligent Design were also considered and evaluated.

Furthermore, these objections presented by the various scholars were considered and critically assessed by, for example, the following scholars.

- Lehigh University professor Michael Behe
- Francis Collins the former head of the genome project
- Richard Dawkins the Charles Simonyi professor at Oxford University
- William Dembski a professor of theology and science at Southern Baptist Theological Seminary
- Molecular biologist and medical doctor Michael Denton
- Phillip E. Johnson a professor emeritus at the University of California
- John C. Lennox Professor of mathematics at the University of Oxford
- John D. Morris of the Institute for Creation Research
- Thomas Woodward a history of science professor at trinity college of Florida

1.1 Miller's first design objection – The age of the earth

Miller's first design objection comes from the age of the earth that creationists and some ID supporters say is less than 10,000 years (Morris 1994).

1.1.1 Are all ID proponents' young earth Creationists?

Although many are of the opinion that ID proponents all adhere to a young earth, two of their main advocates do not. For example, Miller (2009) and Behe (2006) agree with the accepted dates of the earth being billions of years old. Conversely, Woodward (2003) reports that one of the dividing lines between creationism and ID is that several ID proponents are open to the earth being billions of years old. He quotes James Glanz (2001) as saying;

> Proponents of this theory, led by a group of academics and intellectuals and including some biblical creationists, accept that the earth is billions of years old, not the thousands of years suggested by a literal reading of the Bible.

Woodward (2003:81) also quotes Johnson[3], "I have no desire to quarrel with the generally accepted estimate of four or five billion years." Woodward (2003) finally reports that the historian and chemist Charles Thaxton wrote that the earth was 4 billion years old (Thaxton, Bradley and Olsen 1984). Therefore, Johnson and Thaxton stand with Behe and Miller in the acceptance of an old earth. The focus of ID, however, is to not base their hypothesis on any preconceived religious notions, but to rely on science as it is used today (Dembski 2004). It becomes clear that to be part of the ID movement, a belief in a young earth is not a requirement.

1.1.2 A literal reading of Genesis and a young earth

John Morris of the Institute of Creation Research (ICR) is a typical young earth creationist who wrote the book "The Young Earth." His objections come from a literal reading of Genesis. Morris believes that you would need to ignore the Genesis account of creation in Genesis chapter 1 and the genealogies that follow it in Genesis 5:1-32, 1 Chronicles chapter 1:1-28, 1 Chronicles 3:10-12 and Luke chapter 3:23-38. These genealogies move from Adam to Joseph the supposed father of Jesus and would need to be explained as a literal reading would not allow the

millions of years that is required for evolution. For Morris (1994) there is a great need to defend the biblical account by attacking the way dating methods are carried out leading to the assumption that an evolutionary process is correct according to scientific evidence. He points to the evidence for a young earth by referring to comets, and the assumptions made in Radioisotope dating, population studies and the physical features of the earth.

1.1.3 A consistent but incorrect timeline

A problem for Miller (1999) is that a designer would have to intervene and make an earth with a "consistent but incorrect timeline". Morris (1994) however contends that the Bible talks of a "functionally mature creation" with a "superficial appearance of age". In this view, Adam would not have any signs of age even though, physically, he was a full grown man. He would be seen scientifically as a new creation with perfect genes etc. The stars would also be "functionally mature" with a "superficial appearance of age". The light from these stars could be seen immediately and the whole system would be ready for God's purposes.

In opposition to this, Behe (2006) clearly states that the ideas of a young earth and ID are not necessarily linked. In this view, one could see an object, conclude design, and not know when it was designed.

1.2 Miller's second design objection – Natural Selection

Miller's second design objection is that the mechanism of natural selection is testable and more than enough to account for the diversity of life. The concept of a "kind" and the boundary between microevolution and macroevolution has no validity in true scientific circles. He continues that a designer would need no such mechanism as natural selection and could create anything he wanted to. You could not predict, test or provide evidence for this scenario, as a designer would not have to leave any scientific evidence behind, as his methods would not necessarily conform to the scientific method.

[3] From Phillip Johnson's letter to Jeremy Waldron October 3, 1988.

1.2.1 Miller argues that Natural Selection is testable

Johnson (2010:31) commented that

> Charles Darwin made evolution a scientific concept by showing, or claiming to have shown, that major transformations could occur in very small steps by purely natural means, so that time, chance, and differential survival could take the place of a miracle.

Dawkins (1996:451) continues this idea "the one thing that makes evolution such a neat theory is that it explains how organized complexity can arise out of primeval simplicity." Dawkins says that these small steps are enabled by natural selection and can generate both novel structures and, eventually, new species. Dawkins (1996) uses the analogy of the eye. A bad eye is better than no eye and each successive step brings us closer to the modern eye. Biology can only be understood in terms of these small incremental steps, according to Dawkins. Collins (2006:132) writes "The distinction between macroevolution and microevolution is therefore seen to be rather arbitrary; larger changes that result in new species are a result of a succession of smaller incremental steps." Darwin, Collins and Dawkins therefore, agree with Miller that these small steps show that natural selection is testable and can bridge the gap between microevolution and macroevolution to show that an unneeded infusion by a designer has been borne out by science.

Johnson (2010) asks the rhetorical question: Is 5% of an eye better than no vision at all? Johnson answers his own question by retorting that 5 % of an eye is not the same as 5% of normal vision. What is needed is an organism that is capable of using the information to further survival or reproduction. For Johnson, Darwin did not discover a real breakthrough, but just suggested that these simpler eyes may have been the intermediaries of the more complex eyes that we have today. Behe (2006) notes that Darwin did not find a testable, scientific evolutionary pathway to arrive at the modern eye. Darwin just suggested that modern animals have a variety of types of eyes, each with varying complexity. In this view, the modern eye may have used these intermediaries as steps in an evolutionary pathway to the modern eye. The question of how novel structures like vision and new organisms came about in the first place is left unanswered. For the eye, the answer cannot be found in the fossil record or in the mechanism of natural selection.

1.2.2 Miller argues that Natural Selection can account for the great divisions of nature

For evolutionists like Smith (2011:209) “the old incredulous arguments that complexity could not occur by natural processes are just that: old, propagated by unexamined tradition, uninformed by new discoveries, and incredulous, disbelieving in a past.” For ID proponents and creationists like Morris (1994:27) “it is inconceivable to most Christians that the incredible design and order that we see in the universe, especially in plants and animals, could have come about by mere natural processes, mindless and random.” Johnson (2010:89) sets the importance of this issue. He says “if laboratory science cannot establish a mechanism… then Darwinism fails as an empirical theory.” The question remains if the mechanism of natural selection is enough to explain the complexities in nature. Evolutionists respond with a resounding yes. ID proponents respond with a resounding no.

1.2.2.1 Conceptual problems for Natural Selection

1.2.2.2 One cannot change the organism’s physical parameters

The first conceptual problem with the mechanism of natural selection being more than enough to account for the diversity of life is one cannot change the organism’s physical parameters. Denton (1986) uses the concept of making a beaver-sized rat. Any small change would require an extensive reorganization of the whole creature in terms of its bauplan and its internal organs. This concept predates Darwin as Denton (1986:91) points out in a quote by Cuvier (1829).

> Every organized being forms a whole, a unique, and perfect system, the parts of which mutually correspond and concur in the same definitive action by a reciprocal reaction. None of these parts can change without the whole changing.

1.2.2.3 Complexity

The second conceptual problem is Complexity. Denton (1986) relates a number of complex structures that are improbable by chance. A Bacteria cell is the smallest organic compound being 10 to the negative 12 grams, but it is still extremely complex. Each of these cells is a small factory with a hundred thousand million atoms. Even with its modest size, this system is far more complex than the

most complex machine man has ever made. Denton (1986:342) brings his complexity point home by declaring;

> It is the sheer universality of perfection, the fact that everywhere we look, to whatever depth we look, we find an elegance and ingenuity of an absolutely transcending quality, which so mitigates against the idea of chance. Is it really credible that random processes could have constructed a reality, the smallest element of which - a functional protein or gene - is complex beyond our own creative capacities, a reality which is the very antithesis of chance, which excels in every sense anything produced by the intelligence of man?

The perfection of life creates a complexity problem that is insurmountable for Darwinists, according to ID proponents.

1.2.3 Microevolution and Macroevolution

Woodward (2003) reports that when Denton Analyzed Darwinism, he started with the fact that you do not need to accept both theories. He reasoned that the special theory of speciation (otherwise known as microevolution) fits well with the scientific evidence. The general theory of Darwinism (otherwise referred to as macroevolution) did not. Collins (2006) explains one mutation occurs with every 100 million base pairs. Most of these mutations are either harmful or neutral and are not passed to the next generation. The few that have a slight advantage for the organism eventually affect the population as a whole. For ID proponents this is just microevolution. For evolutionists the boundary between microevolution and macroevolution is arbitrary and there is increasingly not a boundary between the two. As Collins (2006:132) wrote "The distinction between macroevolution and microevolution is therefore seen to be rather arbitrary"[4] This contention is central to ID theory. Morris (1994:10) is clear that

> Small adaptations within a population of organisms which allow a certain trait to be expressed to a greater or lesser degree than before; variation within a given category.

[4] Genetic drift is one of the forces that changes a gene pool, and leads to evolutionary change. Darwin was not familiar with his system. In this way macroevolution can refer to substantial changes in a population and not, necessarily, a brand new species. This can be seen in the example of the Cichlid fish and the apple maggot fly. Behe (2006) notes that this phenomenon is quite compatible with ID theory.

In other words microevolution does happen and there is no dispute. Morris (1994:10) contends that macroevolution which is "large hypothetical changes which occur in an individual or in a population of organisms which produce an entirely new category or novel trait" is not observed in populations. Woodward (2003:49:50) states that;

> Denton shepherds all of these lines of investigation toward a radical central thesis: Macroevolution - continuous evolutionary development through the selection of random mutations - is not supported by findings in any area of biology. The theory is supported neither by empirical evidence nor by thought experiments, that is, by attempts at reconstructing plausible evolutionary pathways.

Dembski (1999:113) agrees with this assessment and says

> What evidence there is supports limited variation within fixed boundaries, or what typically is called microevolution. Macroevolution - the unlimited plasticity of organisms to diversify across all boundaries - even if true, cannot legitimately be attributed to the mutation-selection mechanism. To do so is to extrapolate the theory beyond its evidential base.

Lennox (2009) adds that these macroevolutionary steps have not been observed and is not dissimilar to the unobserved workings of a designer. Johnson (2010:93) agrees and says "what Darwinists need to supply is not an arbitrary philosophical principle, but a scientific theory of how macroevolution can occur." So for Morris, Denton, Dembski, Lennox and Johnson the idea of macroevolution is not supported by scientific evidence and is not observable, but is just an "arbitrary philosophical principle" as Johnson commented.

For both evolutionists and ID supporters microevolution is a fact of biology. However, for Johnson (2010:90) "the point in dispute is not whether microevolution happens, but whether it tells us anything important about the processes responsible for creating birds, insects, and trees in the first place." In other words the boundary between microevolution and macroevolution is non-existent for evolutionists and an impenetrable wall for ID proponents.

1.2.4 Miller argues against that a designer is not testable

Another problem for Miller is that a designer could create anything he wanted to. You could not predict, test or provide evidence for this scenario.

For Dembski (2004) ID works with what is observable in nature. You can have a scenario where God hides his creative work or one where a creation story is absent. If a designer hides his creative works, there could, nevertheless, be design in nature. The inability of man to recreate these steps does not preclude a more advanced creator.

1.3 Miller's third design objection – The apparent family trees of animals

Miller's third design objection is the apparent family trees of animals. The argument from Miller is that there is a sequential patter to life on the earth that cannot be explained by creationists. Organisms started as simple organisms and got increasingly complex as shown in the fossil record. His second argument is if each species was an independent creation from God than why do most of them go extinct. His third argument is that it is clear for Miller that the designer did not take just six days.

1.3.1 Sequence to life on earth

Miller's first problem with the rejection by ID of the apparent family trees of animals comes from the sequential pattern of life on planet earth[5]. Common ancestry is a fact for Darwinists. Darwin (1962:434-5) pointed to the fact that "striking relationship between the inhabitants of islands and those of the nearest mainland" pointed to a common ancestor (Denton 1986:46). Darwin (1962:410) also pointed out that the "members of the same class, independently of their habits of life, resemble each other in the general plan of their organization" (Denton 1986:142). Finally, Darwin (1962) said that domestic breeding produces many new species, why cannot this be extrapolated to the wild. Collins (2006) says that this evidence is especially strong at the genome level. In comparing different organism like mice and men, you find that the ordering of the genes often remains constant. Collins says that you also see ancient repetitive genes, which result from copying in other parts of the

[5] Also called common ancestry or common descent.

genome without adding functionality. These ancient repetitive gene sections are remarkably similar in mice and men. Smith (2011) claims that molecular genetics allows one to actually see the date at which organisms shared a common ancestor. Smith (2011:230) talks about “immortal genes” and says ”a relativity small set of genes - maybe five hundred- controls a wide range of basic animal structure developments”. For Darwinists like Smith, Collins and Darwin himself, this is a powerful case for common ancestry[6]. In fact, Michael Behe (2006) reports that common descent is “fairly convincing” and that common descent is “not incompatible” with ID. Darwin saw that once it is conceded that common descent is possible and that

> Organisms are inherently capable of a considerable degree of evolutionary change, then might they not, especially if a great length of time is allowed, be potentially capable of undergoing practically unlimited change sufficient even to bridge some of the seemingly most fundamental divisions of nature (Denton 1986:46-47)?

This process, according to Darwinists, has breached the division between single-celled and multi-celled animals, plants and animals, and the “fundamental divisions of nature”.

Johnson takes exception to this evidence. Firstly, Johnson (2010:90) says, “We do not observe a common ancestor for modern apes and humans”. Secondly, Johnson (2010:90) says, “What we do observe is that apes and humans are physically and biochemically more like each other than they are like rabbits, snakes, or trees.” Thirdly, Johnson (2010:118) says that “Darwinists take for granted that "relationship" is equivalent to common ancestry”. Finally, Johnson (2010:86) says that

> Darwinists consider evolution to be a fact, not just a theory, because it provides a satisfying explanation for the pattern of relationship linking all living creatures - a pattern so identified in their minds with what they consider to be the necessary cause of the pattern - descent with modification - that, to them, biological relationship means evolutionary relationship.

This line of logic moving from what we observe (or do not observe), to the similarity between organisms, to the concept that similarity equals common ancestry

[6] Common ancestry is also called common descent.

is not conclusive proof of Darwinism for Johnson. It does not tell you where apes, humans, rabbits, snakes, or trees come from to begin with.

Lennox (2009) relates that the genetic similarities are also not overwhelming proof of Darwinism. We cannot put things in a hierarchy and pronounce that they are genetically common ancestors of each other. We cannot know if natural selection or common design is responsible. Denton (1986:155) says "The same hierarchic pattern which may be explained in terms of a theory of common descent, also, by its very nature, implies the existence of deep divisions in the order of nature." The "fundamental divisions of nature" have not been breached at all for ID proponents.

1.3.2 Why do most species go extinct?

Miller's second problem with the rejection by ID of the apparent family trees of animals has to do with the extinction of so many species. Dembski (2004) attempted to deal with the issues of apparent "dead ends" in organisms and the fact that so many species become extinct. He gives the unscientific answer that we are part of a fallen moral structure that is under God's curse. ID is not concerned with this type of "why" question. The designer could be wasteful or thrifty, cruel or kind. There just has to be intelligence that is detectable.

1.3.3 Miller's difficulty with a literal six day creation

Miller's third problem with the rejection by ID of the apparent family trees of animals relates to the amount of time of creation as being a literal six days. This question, along with Dembski's answer to the extinction question, should be directed at creationism and not ID. Dembski (1999) uses the example of an oil painting. One could ask if the art itself is designed. In other words are these just random splashes of paint or is there an order to them. You could also ask if the medium is designed. Is the canvas itself random or a "purposeful arrangement of parts" (Behe 2006:193)? In either case the "how" or "why" questions are avoided. The idea of whether a designer took six days or six billion years to create the universe would not be a part of ID. ID simply asks if there is intentional design in the universe.

1.4 Miller's fourth and fifth design objections – Aristotle and Imperfection

Miller's fourth design objection was Aristotle's idea of four distinct kinds of causes, and Miller's fifth design objection was the idea of design imperfections. These turn out to be the same objection namely, an objection with the motives of the designer. Darwin had an answer in that an organism's efficient cause is natural selection and final cause is to survive. There is no answer for Miller as to the efficient or final cause in design. There is also no answer for Miller as to why our genome is replete with mistakes and useless genes or why we have useless pseudogenes. An interventionist designer cannot explain it and ID cannot be a scientific theory.

Miller (1994:29-30) makes the charge that

> Another way to respond to the theory of Intelligent Design is to carefully examine complex biological systems for errors that no intelligent designer would have committed. Because Intelligent Design works form a clean sheet of paper, it should produce organisms that have been optimally designed for the tasks they perform.

Scott (2009) grappled with how to choose between a transcendent designer and the Darwinian concept of natural selection in the making of complex structures. She says that an all-powerful designer could make such complexity, but for her, natural selection could do the same. Her argument is that imperfection in the form of systems that do not work very well and look like they were made from disparate parts that came from other systems was a sure sign that natural selection is the better choice.

Dembski (1999) answers these charges by remarking that there are two different meanings to intelligence. There is the intervention of any intelligent agent in any way. This would include capable designers as well as incapable designers. Next, there is the intervention of a truly intelligent designer. For ID, it is simply to detect design, even in the case of a sub-optimal designer.

Behe (2006) responds that there are many reasons for designers designing in the way that they do. For some, they design with obsolescence in mind and for others it is to teach lessons in values or ethics with the design considerations being

secondary. There is also the possibility of many motives simultaneously or with no motives at all. We cannot know these “why” questions in design. This would require that we either ask the designer or we were there when it was designed. In either case, the fact of design remains. For Behe this also creates a non-sequitur syllogism. A designer would not make this system with this obvious flaw. This system has this flaw. Therefore, Darwinian evolution produced this system. In this way, Darwinists reached a conclusion of Darwinism based solely on an emotional feeling of what should be. Miller (1994:32) continues with this attack

> The theory of Intelligent Design cannot explain the presence of nonfunctioning pseudogenes unless it is willing to allow that the designer made serious errors, wasting millions of bases of DNA on a blueprint full of junk and scribbles.

Behe (2006) does not agree with Miller. He says that there are three reasons for this disagreement. Firstly, because we do not personally know the reason for a system to be designed as it is, this does not mean than no reason exists. Secondly, if pseudogenes do not have a purpose than this does not answer the question of the origins of pseudogenes. Thirdly, ID does not necessarily imply an old universe. The pseudogenes might just be older genes with accumulated errors. Behe (2006:222) retorts that “because something does not fit our idea of the way things ought to be, then that is evidence against design.” The opposite is true for Behe. Collins (2006:43) reports that C. S. Lewis (1962:23) put it this way

> If God were good, he would wish to make his creatures perfectly happy, and if God were almighty, he would be able to do what he wished. But the creatures are not happy. Therefore, God lacks either goodness or power or both.

In other words, we want God to make us happy and do things our way. Dembski (2004) said the real question is why any “self-respecting deity” would create structures with these problems. The problem is that a deity may not have our happiness, his self-respect or motives that we can understand in mind when He designed complex structures and organisms.

1.5 Objections with the Intelligent Design concept of Complex Specified Information

The first objection to Dembski (2004) and his concept of Complex Specified Information come from the use of Dembski's explanatory filter, which relies on the scientific knowledge of the observer. The second objection to Dembski is the claim that nature should be able to self-assemble as naturalism dictates. The third objection comes from the primary and secondary causation of Thomas Aquinas. Every instance of complex specificity would need to be a primary cause.

1.5.1 William A. Dembski's Explanatory Filter and the knowledge of modern science

The first objection of Dembski's explanatory filter comes from its reliance on Modern scientific knowledge. Dembski (1999) freely admits that the explanatory filter has a problem with "false negatives". In other words if the filter is used in determining the absence of design, than it is not a useful tool for this purpose. The problem is that a designer's actions can be attributed to necessity or chance. In modern art, for instance, it is difficult to determine if the paint spilled on the canvas by accident or was intentional. A second problem arises with the knowledge that intelligence is needed to recognize intelligence. A third problem can arise when a designer does not want to be known. A final problem is the question at hand, namely the use of modern scientific knowledge. If you do not see the scientific principles that caused an object than one might attribute it to chance or necessity. Dembski maintains, however, that the filter is an excellent tool for the detection of design. He backs up this claim by saying that where the cause is known for an organism or system and the complexity-specification criterion attributes this organism or system to design it turns out to be so. In other words, the explanatory filter has not been falsified thus far.

1.5.2 William A. Dembski's Explanatory Filter and the self-assembly of nature

The second objection of Dembski's explanatory filter dealing with nature's ability to self-assemble is answered by as he acknowledges that natural systems and organisms can exhibit specified complexity, but this is not the same as generating it. ID is about the use of these structures that exhibit specified complexity and states

that the best explanation of where this comes from is not the self-assembly by nature, but by intelligence. As Johnson (2010:21) uses “creation” as the intelligence and "evolution" as the self-assembly and says “evolution” contradicts “creation” only when it is explicitly or tacitly defined as fully naturalistic evolution - meaning evolution that is not directed by any purposeful intelligence.” The main goal of ID is to show that nature cannot self-assemble by itself; it needs the input of intelligence.

1.5.3 William A. Dembski’s Explanatory Filter and primary and secondary causation

The third objection of Dembski’s explanatory filter is the idea of primary and secondary causation by Aquinas. Dembski (1999) answers this objection by using the origin of information. He says that you can generate information either by chance, or by law and chance. Harris, J. H., Calvert (2003:530-561) agrees with these two options for origins. Harris goes on to say that “each side is laden with philosophical baggage”. The argument is that the generation of information and thus origins has to be a first cause. In ID thinking information cannot arise by chance, it must arise by law or a combination of law and chance. Harris adds that origins must arise by a combination of law chance and design. The design element and the origin of the original law are the intelligent cause that ID says is lacking in evolution.

1.6 Objections with the Intelligent Design concept of Irreducible Complexity

1.6.1 Irreducible Complexity and primary and secondary causation

The first objection with Irreducible Complexity is the idea of primary and secondary causation, just as was objected to with Dembski and his explanatory filter. Behe (2006:228) writes “the production of some biological improvements by mutation and natural selection - by evolution - is quite compatible with Intelligent Design theory.” Here Behe puts to bed the notion of primary and secondary causes. These improvements would be part of the secondary causation. The primary cause - intelligence - is what ID is trying to discover.

William Paley (1743-1805) made the argument according to Collins (2006) if you found a watch on the ground, you would see that it was complex. The watch is obviously the result of intelligence. Dawkins (1996:9) claims that “Paley's argument is made with passionate sincerity and is informed by the best biological scholarship of his day, but it is wrong, gloriously and utterly wrong.” Dawkins (1996) bases this

claim on the assumption that living things can transform anything from small steps to larger steps. The eye cannot just “pop up”, but it can develop from a “light-sensitive” spot to the modern eye that we now see. Behe (2006) makes the argument that Paley was not defeated at all. The eye cannot be produced without admitting a very complex starting point such as the ‘light-sensitive’ spot. This structure needs to be explained both anatomically and biochemically before you can even start the process that Dawkins finds so easy. Thus for Behe the primary causation cannot be explained in terms of a Darwinian mechanism, but still needs an input of intelligence, just as Paley said so long ago.

1.6.2 Irreducible Complexity and changing function

The second objection with Irreducible Complexity is that a system can not only change itself into something more complex, but it can change its function as well. Behe (2006) answers this objection with the analogy of a bike becoming a motorcycle. He goes on to explain the improbability of such a transformation given the weight of the motor, the use of gasoline as a fuel and a host of other problems with such a transformation. It is conceptually possible until you try and physically make it happen. Denton (1986) showed the difficulties with this idea by the assumption that birds come from reptiles. Birds would have to climb first which they are not able to do now. The feather structure is incredibly complex and the transformation of the avian lung is conceptually possible until you try and physically make it happen.

1.6.3 Irreducible Complexity and the “God of the Gaps”

The third objection with Irreducible Complexity is the classic “God of the Gaps” argument. If you do not know how something was done, invoke a designer. Collins says that ID rests on three propositions. Evolution promotes atheism, evolution is flawed, and if evolution cannot answer the objections raised by Irreducible Complexity than evolution must admit there is a designer. The first two propositions are better aimed at creationism than ID. The final one is one of the pillars of ID. Scott (2009:125) makes the claim “but even if natural selection were unable to explain the construction of irreducibly complex structures, does this mean that we must now infer that intelligence is required to produce such structures.”

Behe (2006) answers by saying that the living world is full of design. In the absence of another explanation, we must turn to an intelligent agent. Design has failed, for ID proponents to show the superiority of Darwinism in answering the Irreducible Complexity issue.

Scott (2006) makes the claim that for creationists and ID proponents if Darwinism cannot meet the challenge of creationism or ID than they will win by default. Evolutionists also create this duality as Smith (2011:175) clearly states "the only alternative is independent creation".

1.6.4 Irreducible Complexity and the separate roles of components

The fourth objection with Irreducible Complexity is the use of parts from other systems. Miller (2009) reports that scientists do not know how the flagellum evolved. The main point is that the flagellum has parts that could work on other systems as well. This proves for Miller that Irreducible Complexity is no match for Darwinism. The parts were simply "borrowed" from other systems to make the flagellum.

Behe (2006) writes that a direct route for these alternate parts to become a flagellum is essentially impossible. An indirect route is not likely as the complexity would prohibit it, but it is not out of the realm of possibility. Behe (2006:111) writes using his mousetrap analogy that "you can't start with a platform, catch a few mice, add a spring, catch a few more mice, add a hammer, catch a few more mice, and so on: The whole system has to be put together at once or the mice get away." Note that Behe is talking about systems here, not disparate parts. Behe complains that Miller[7] redefines Irreducible Complexity to mean that no parts of a system could be used in another system. Behe (2006:260) clearly wrote "yet there is no reason that individual components of an irreducibly complex system could not be used for separate roles, or multiple separate roles, and I never wrote that they couldn't." Behe (2006:39) wrote "the removal of any one of the parts causes the system to effectively cease functioning." The system is the key for Behe and that is what is irreducible. If you remove the spring, the mousetrap system would stop catching mice. If you removed the rotor, than the flagellum system would stop working.

[7] Writing in www.millerandlevine.com/km/evol/design1/article.html

1.7 Objections with Intelligent Design promoting Creationism

Throughout their writings, Miller and Scott equate creationism with ID. This creates the first objection with ID promoting creationism. Secondly, Miller and Scott object to a literal interpretation of Genesis. Lastly, Miller and Scott say that the arguments for creationism have been defeated long ago. For these writers this makes ID a non-scientific idea that has, at its roots, a religious dogma.

1.7.1 Does ID equal Creationism?

Miller and Scott talk about the tenets of creationism as matching the tenets of ID. Woodward (2003) claims that ID scientists have valid credentials and are not attached to creationism. The attachment of ID's tenets will be examined to see if they match up with creationism.

1.7.1.1 What are the tenets of Creationism?

Creationists (Morris 1994), ID supporters (Behe 2006; Dembski 1999; Denton 1986; Johnson 2010; Lennox 2009) and evolutionists (Collins 2006; Dawkins 1996; Miller 2009; Scott 2009) agree on the tenets of creationism. These tenets require the direct intervention of a designer who created the universe, including the earth, in a moment's time [8] less than 10,000 years ago and the features that we see did not change gradually. This scenario requires a literal interpretation of Genesis 1 and 2 including a six-day creation, an historical Adam and Eve and a literal global flood. All species are individual creations of God and are not descended from other creatures. Consequently the process of natural selection is limited to microevolution and macroevolution is rejected. In this view there can be no intermediaries between "kinds" and this is borne out in the fossil record where the known fossils all came from Noah's flood. The similarities between different species in regards to DNA and their genes are due to a similar plan from the creator. Evolutionists would conclude that young earth creationists and modern science are incompatible (Collins 2006; Dawkins 1996; Miller 2009; Scott 2009).

[8] Often called Instantaneous creation or fiat creationism.

1.7.1.2 Does ID promote any of the tenets of Creationism?

Firstly, does ID agree with the tenet of creationism that the earth is only 10,000 years old? As noted earlier Darwinists Miller and Scott both argue for an old earth. ID proponents Johnson, Thaxton and Behe agree on the acceptance of an old earth. There are some creationists in the ID camp including Paul Nelson, John Mark Reynolds and some pure creationists including John Morris who insist on a young earth. Consequently, a belief in an old earth or a young earth is acceptable under the ID umbrella.

Secondly, does ID agree with the tenet of creationism that a literal interpretation of Genesis is necessary? Miller (2009) says that for creationists to take genesis literally is not scientific and requires that they reject all of present day science. They would have to ignore the age of the earth, ancestor-dependent relationships and say that life just happened without any antecedents. William Dembski (2004) answers this charge by saying that ID is based on science and not religious beliefs. ID does not require that we know who the creator is or where this being comes from. The theory of ID comes from what is observed in nature and then makes a scientific theory based on these observations. This could, by chance, match the Genesis account or present intelligence with no creation story at all. In this way, ID has no religious bias. Behe (2006:193) puts it this way "The conclusion of Intelligent Design flows naturally from the data itself - not from sacred books or sectarian beliefs." Woodward (2003) concurs and says that ID tries to avoid Biblical literalism as he quotes Glanz (2001);

> This time, though, the evolutionists find themselves arrayed not against traditional creationism, with roots in biblical literalism, but against a more sophisticated idea: the Intelligent Design Theory.

Thirdly, does ID agree with the tenet of creationism that the process of natural selection is limited to microevolution while macroevolution is rejected? This seems to be one area of agreement between creationism and ID. Glanz (2001) puts it this way;

> But they dispute the idea that natural selection, the force Darwin suggested drove evolution, is enough to explain the complexity of the earth's plants and animals. That complexity, they say, must be the work of an intelligent designer (Woodward 2003:18).

1.7.1.3 Does ID have a religious edge?

Dembski (1999:188) would say “Intelligent Design is a scientific theory with theological implications.” Dembski and others (Collins 2006; Behe 2006) would say that a concept such as the big bang has theological implications, but it can be studied in a scientific way. Dembski (1999) goes on to explain that ID is a way of understanding the actions of a higher being. In this way, it can be the border between science and theology. Scientists may shy away from it and do all they can to connect it to creationism.

1.7.2 Have the arguments for creationism been defeated long ago?

If ID is not concerned with a literal interpretation of Genesis or to any religious dogma, than Miller’s third objection that arguments for creationism have been defeated long ago would become void. The argument of the origin of DNA could be an exception as Dembski (2009:1-10) uses this concept in his defense of ID as a theory of information. Dembski (1999:112) speaks plainly

> Design theorists refuse to make this a Bible-science controversy. Their critique of Darwinism is not based on any supposed incompatibility between Christian revelation and Darwinism. Instead they begin their critique by arguing that Darwinism is on its own terms a failed scientific research.

The science, not the theology, is the stumbling block for ID theorists.

1.8 Scientific objections with intelligent design

Lennox (2009:11) commented that ID was an “anti-scientific attitude that is chiefly focused on attacking evolutionary biology.” This “anti-scientific attitude” forms the first scientific objection with ID as raised by Scott (2006) that there is not a serious scientific controversy over the factuality of evolution. The second scientific objection is ID’s plan to overthrow naturalism. The third scientific objection with ID is that it will lead to the supernatural as science. This breakdown of science will lead to a pseudoscience like ID with no support from the scientific community changing the very nature of science.

1.8.1 Is there a scientific controversy?

In their confidence that there is not a serious scientific controversy, evolutionists proclaim that no serious biologist doubts the theory of evolution (Collins 2006; Dawkins 1996). Even if there were no evidence, it is still would be the best explanation (Dawkins 1996:408). It is the only theory that is possible (Dawkins 1996:XVI-XVII). This grand claim reached its climax in 2008 when Nature magazine carried an editorial “Spread the Word; Evolution is a Scientific Fact, and Every Organization Whose Research Depends on it Should Explain Why” (Smith 2011:23). Smith (2011:27) equated challenges to the truth status of evolution to attacking science itself, “Antievolutionism is linked with anti-science itself, which would have the human mind retreat to an essentially medieval worldview.” Miller (1999) admitted that we cannot directly prove that life began simply by material means, but as the evidence comes in it seems to be the logical conclusion.

Denton (1986) takes issue with these pronouncements and says that they are “simply nonsense”. The scientific method is based on repeatability, something that is not possible with origins. Denton (1986:76-77) quotes Feyerbend (1965:179) who said;

> The stability achieved, the semblance of absolute truth is nothing but the result of an absolute conformism. For how can we possibly test, or improve upon, the truth of a theory if it is built in such a manner that any conceivable event can be described, and explained, in terms of its principles?

These pronouncements are not scientific in that they cannot be proven scientifically and everything can be understood in evolutionary terms, even without any evidence. Dawkins (1996:408) says it this way;

> If I am right it means that, even if there were no actual evidence in favor of the Darwinian Theory (there is, of course) we should still be justified in preferring it over all rival theories.

Johnson (2010:118) counters that;

> Because Darwinists take for granted that "relationship" is equivalent to common ancestry, they assume that the molecular classifications confirm the "fact of evolution" by confirming the existence of something which by definition is caused by evolution.

In other words, evolution is proven by definition alone. Johnson (2010:90) inserts into the discussion that “the theory is plausible, especially to a philosophical materialist, but it may nonetheless be false.” Just because by definition it is said to be true, this is not scientific evidence. Dembski (1999:112) continues

> By arguing that Darwinism is on its own terms a failed scientific research program - that it does not constitute a well-supported scientific theory, that its explanatory power is severely limited and that it fails abysmally when it tries to account for the grand sweep of natural history.

The argument starts from the pronouncements of absolute conformity in the truthfulness of evolution. Then ID counters that this is not scientific because it is not empirically testable and repeatable. From this, comes the charge that evolution from its very definition cannot be wrong for evolutionists. Dembski then counters with the idea that Darwinism fails on purely scientific terms. Woodward (2003:101) reports that Johnson, moving in line with this reasoning, asks

> Why not consider the possibility that life is what it so evidently seems to be, the product of creative intelligence? Science would not come to an end, because the task would remain of deciphering the languages in which genetic information is communicated, and in general finding out how the whole system works.

This flies in the face of the pronouncements by Darwinism and their definitional edicts that Darwinism cannot be wrong. If Darwinism really fails as a scientific enterprise, than Johnson’s challenge could be valid. Is it possible that the Darwinian Theory “is plausible, especially to a philosophical materialist, but it may nonetheless be false” according to Johnson. Or is the case as Dawkins (1996:XVI-XVII) explains ”I want to persuade the reader, not just that the Darwinian world-view happens to be true, but that it is the only known theory that could, in principle, solve the mystery of our existence.”

1.8.2 Overthrowing Naturalism

Smith (2011:174) Challenges ID by saying;

> It is now the evolution denier's burden to show these are not cases of speciation, that some other natural process can account for the changes, over time, in these many life-forms past and present, that lead to new species.

Dembski (1999:105) takes issue with this challenge and its dependence on naturalism. Dembski says;

> The science we look to, however, needs to be unencumbered by naturalistic philosophy. If we prescribe in advance that science must be limited to strictly natural causes, then science will necessarily be incapable of investigating God's interaction with the world.

For Smith ID does not get started due to its challenge to naturalistic philosophy. Michael Ruse, a Darwinist, would take issue with Smith. He said

> Evolution, akin to religion, involves making certain a priori or metaphysical assumptions, which at some level cannot be proven empirically....And I think that the way to deal with creationism, but the way to deal with evolution also, is to not deny these facts, but to recognize them, and to see where we can go as we move on from there" (Woodward 2003:147).

For Ruse, you can be a Darwinist without necessarily prescribing to naturalism. Lennox (2009) answers that by believing that Ford designed the engine would not stop the curiosity of how the engine works in the first place. Lennox (2009:9) leaves us with this challenge.

> So, is naturalism actually demanded by science? Or is it just conceivable that naturalism is a philosophy that is brought to science, more then something that is entailed by science? Could it even be, dare one ask, more like an expression of faith, akin to religious faith?

Ruse and Lennox sound like they agree on what to do about naturalism.

1.8.3 The supernatural as science

The tenets of ID lead to a truly scientific theory that is not connected with Creationism, a literal interpretation of Genesis or any sacred books whatsoever. The data flows from what is observed. The theory simply tries to discover intelligence in complex systems and challenges the hold that Darwinists have over science especially in the area of naturalism. Dembski (2009:1-10) writes that it is a theory "devoid of religious commitments" and a "reliable indicator of design". He goes on to say that naturalism cannot find the root cause of the origin of information and this is best found in intelligence. Dembski (1999:107) challenges the notion of the supernatural taking over the scientific method. He says "it is the empirical

detectability of intelligent causes that renders Intelligent Design a fully scientific theory and distinguishes it from the design arguments of philosophers or what has traditionally been called "natural theology." “ Dembski (1999:105) puts it another way;

> There's an important contrast to keep in mind here. Science, we are told, studies natural causes, whereas to introduce God is to invoke supernatural causes. This is the wrong contrast. The proper contrast is between natural causes on the one hand and intelligent causes on the other. Intelligent causes can do things that natural causes cannot.

A computer can recreate letters on the screen, but it takes an intelligence to make meaning out of those letters.

The objections of Miller and Scott were thus seen as Miller’s 5 objections including the age of the earth, the limitations of natural selection, the family trees that are apparent in the fossil record and in phylogenic analysis, and finally the ideas of imperfection and Aristotle’s causes. Miller and Scott also connected ID with creationism and finally had scientific objections that, for them, were insurmountable for ID. In this chapter ID supporters then gave answers to these objections from ID theory. These were presented not to take one side or the other, but simply to hear the objections of Miller and Scott and to take them seriously. The answers from ID were also taken seriously, not to defend ID, but to simply listen with bias or judgment. The final question of whether these objections can be met will be discussed later in this study.

Chapter 2

What are the limits and proper use of Science and the use of Theology according to Miller and Scott?

2.0 Introduction to Chapter 2

In Chapter One, Miller and Scott introduced a breakdown in the scientific method in the ID movement. For Miller and Scott this breakdown will lead to a pseudoscience like ID with no support from the scientific community changing the very nature of science by overthrowing naturalism and introducing the supernatural as the new science. These objections are expanded in chapter two with an explanation of how the scientific method should work and how ID falls short of this method according to Miller and Scott and other pro-evolution writers. Pro ID advocates will then explain why ID should be accepted as a fully scientific theory.

2.1 Why is science unique?

Miller (1999:268) noted that "as more than one scientist has said, the truly remarkable thing about the world is that it actually does make sense. The parts fit, the molecules interact, the darn thing works." Lennox (2009) has remarked that there is the conviction that the universe has order, which makes the scientific method possible. Hawking (1988:122) puts it this way "the whole history of science has been the gradual realization that events do not appear in an arbitrary manner, but that they reflect a certain underlying order." This order combined with the scientific method is what makes science possible.

2.2 The Scientific Method

2.2.1 Ways of knowing

Scott (2009) explains that there are three ways of knowing if something is true, relying on authority, revelation and pure logic. Science makes logical statements using authority as expressed in the scientific method.

2.2.2 Facts - Hypothesis - Laws - Theories

For Scott (2009) the general populace would rank facts as being the most important followed by laws, theories and finally hypotheses. A hypothesis is generally considered a guess and simply gets the creative process started. In scientific circles, scientists would rate theories as being the most important followed by laws, hypotheses and finally facts. For scientists a fact is just an observation that has been confirmed by experimentation. Smith (2011:28) replies “science recognizes no real authority. If your data don't back up your ideas, nobody is going to believe you.” A hypothesis states the relationships among these facts and asks if-then questions about them. Smith (2011) states that these questions are what you would expect to happen if your hypothesis is true. Scott explains that for the hypothesis of Darwinist theory you would ask a question such as, “If living things descended with modification from common ancestors, then we would expect that species that lived in the remote past must be different from species today.”

Scott (2009) continues that a scientific law follows the hypotheses as a fully supported statement about nature. These can change as new data and thus hypotheses are discovered. Confirmed hypotheses are then used in theories. The theory emerges as the most important element in the scientific method, fully supported by facts and hypotheses**.**

2.2.3 Testing and verification through experimentation

Scott (2009:8) explains that “science is quintessentially an open-ended procedure in which ideas are constantly tested and rejected or modified.” She then said that you need a test to prove or disprove your hypothesis. These tests can either be done directly as in testing the boiling point of water, or indirectly as in the temperature of the sun. Smith (2011) links the acquisition of knowledge in testing and the independent verification that follows it to avoid bias. In other words, one scientist does not calculate the temperature of the sun and all other scientists just follow this formula. For Smith evolution would be a scientific theory following the scientific method in that it is an explanation of many confirmed facts and hypotheses.

2.2.4 Is the scientific method exclusive?

Collins (2006:58) remarked that

> One of the most cherished hopes of a scientist is to make an observation that shakes up a field of research. Scientists have a streak of closeted anarchism, hoping that someday they will turn up some unexpected fact that will force a disruption of the framework of the day. That's what Nobel prizes are given for. In that regard, any assumption that a conspiracy could exist among scientists to keep a widely current theory alive when it actually contains serious flaws is completely antithetical to the restless mind-set of the profession.

The idea of some ID supporters that evolution is an exclusionary theory is not supported by the nature of the scientific method itself.

2.3 Results of the Scientific Method

The scientific method should lead to well-supported theories that have the following nine criteria. The first three criteria come from Collins (2006) who taught that scientific theories should predict other findings, be verifiable through experimentation and provide a working mechanism. Dawkins (1996) explains the fourth criterion by arguing that complex systems are explainable by going down a level of organization until a satisfactory explanation is forthcoming. Cars, for example, are explainable in terms of their component parts including cylinders, spark plugs etc. They are also explainable in terms of the composition of metals that make them up. Dawkins calls this theory hierarchical reductionism and, for Dawkins, this theory is needed for a truly scientific theory.

The fifth criterion is the notion that theories need to be falsifiable. Dembski (1999) worded this criterion as “there is nothing that cannot be explained by invoking design, so it explains nothing” In other words, ID cannot be wrong under any circumstances since a designer can be used to explain everything. In this way, ID cannot be a true scientific theory.

2.4 Scientific theories should use the Scientific Method

Lennox (2009:40) quotes Bertrand Russell (1970:243) as saying “whatever knowledge is attainable, must be attained by scientific methods; and what science cannot discover, mankind cannot know.” Collins (2006:228) agrees with Russell and

remarks “the scientific method is the only reliable way to seek out the truth of natural events.” The sixth criterion becomes the need for using the scientific method for verification of a scientific theory.

2.5 Michael Ruse and his definition of science

Lennox (2009:32) reports that Michael Ruse (1982) defines science as the natural, the repeatable and that which is governed by law, which introduces the seventh through ninth criteria.

Miller (1999:268) explains the seventh criterion by saying “if the Creator uses physics and chemistry to run the universe of life, why wouldn't He have used physics and chemistry to produce it, too?” In other words, a scientific theory needs to be based on scientific naturalism.

Scott (2009:3) argues for the scientific method by saying that

> We live in a universe made up of matter and energy, a material universe. To understand and explain this material universe is the goal of science, which is a methodology as well as a body of knowledge obtained through that methodology. Science is limited to matter and energy, but as will become clear when we discuss religion, most individuals believe that reality includes something other than matter and energy.

2.6 Science versus Religion

Smith (2011:158) argues firstly that “science is not a faith; it demands evidence for claims, whereas in direct opposition, faith means to believe without evidence.” The first step for creationists is the use of revelation and not facts. Scott (2009) explained that this is a form of obtaining knowledge, but not a scientific one.

Sarkar (2009:291-305) argues secondly that ID is a truly religious theory and that it does not meet the “demarcation criterion between science and non-science “. This criterion cannot be met as it “assumes that a consistent non-theological characterization of ID is possible”. Sarkar goes on to say “if ID is taken to be non-theological doctrine, than it is not intelligible, consequently, a demarcation cannot be used to judge its status”.

Scott (2009) argues thirdly that for the general populace religion and creationism are related concepts as are science and evolution. Science is concerned with material explanations while religion is concerned with nonmaterial reality. Scott (2009:19) explains that “the ultimate statement of creationism - that the present universe came about as the result of the action or actions of a divine creator - is thus outside the abilities of science to test.”

2.7 Why ID is not Science

From Darwinists one learns that there is no serious scientific controversy over the factuality of evolution and ID is mainly concerned with overthrowing naturalism and introducing the supernatural as science. The theory of ID is not a scientific one and does not have the proper criteria that one would expect if it were a truly scientific theory. Evolutionists go on to lament that ID is based on faith and not fact and cannot be taken as anything but religious dogma.

Scott (2009) goes on that biological evolution as expressed in the concepts of descent with modification and the mechanisms of natural selection are all testable through the scientific method. Smith (2011:136) words this confidence as “selection is not a concrete "thing" but an observable fact. As it occurs, the characteristics of life-forms change through time; sometimes they change enough that a new kind of life emerges from a previous kind of life; this is speciation.” Smith continues later “evolution is like a ball rolling down a slope. It is a consequence, not a plan, or even a thing. It just happens. Because of the replicating nature of the universe, evolution HAS (emphasis Smith’s) to happen” (Smith 2011:181). Miller (2009:65) laments that a designer does not have to’

> …confirm a set of putative evolutionary relationships. ID, therefore, cannot predict such patterns, and cannot even be tested, since arbitrary design (we cannot understand the designer's plans) could be consistent with anything.

Because of these deficiencies, ID can be rejected as a scientific theory for Miller, Scott and Smith.

2.8 The Scientific Method for ID proponents

2.8.1 Ways of knowing for ID proponents

Behe (2006) believes that the two ways of knowing are personal experience and, agreeing with Scott (2009), by authority. Scientific authority is not based on armchair thinking, but about the published works of scientists. In this line of reasoning, molecular evolution is not based on scientific authority.

2.8.2 Facts - Hypothesis - Laws - Theories

Dembski (2004) agrees with Behe (2006:193) when Behe states clearly that "The conclusion of Intelligent Design flows naturally from the data itself - not from sacred books or sectarian beliefs." This sets ID apart from the argument of Scott (2009) that ID is the same as creationism, relying on revelation and not facts. Dembski (2004:75) explains ID's hypothesis as

> Intelligent Design begins by raising the following possibility: Might there be natural systems that cannot be explained entirely in terms of natural causes and that exhibit features characteristic of intelligence?

This hypothesis comes from the data and tries to explain what is observable with a scientific explanation. The problem then becomes how does one ask if-then questions of a hypothesis that is based on "arbitrary design (we cannot understand the designer's plans)" and "could be consistent with anything" (Miller 2009:65). This could potentially create a problem with a scientific hypothesis of ID. Miller (2009:178) reports that Paul Nelson was struggling in 2004 to find a clear scientific theory of ID. Nelson (2004:64-65) says;

> Easily the biggest challenge facing the ID community is to develop a full-fledged theory of biological design. We don't have such a theory right now, and that's a real problem. Without a theory, it's very hard to know where to direct your research focus. Right now, we've got a bag of powerful intuitions, and a handful of notions such as "Irreducible Complexity" and "specified complexity" - but, as yet, no general theory of biological design.

Miller (2009:112) quotes D'Agostino (2006:33) and continues that Phillip Johnson was still struggling in 2006 to find a clear scientific theory of ID.

> I also don't think that there is really a theory of Intelligent Design at the present time to propose as a comparable alternative to the Darwinian theory, which is, whatever errors it may contain, a fully worked out scheme. There is no Intelligent Design theory that's comparable. Working out a positive theory is the job of the scientific people that we have affiliated with the movement. Some of them are quite convinced that it's a doable, but that's for them to prove...No product is ready for competition in the educational world.

In 2006, Scott (2006:77) was still claiming that the theories of ID could not match up to the well-established Darwinian theory. The problems with if-then questions and the lack of a general theory of ID could severely hamper ID's entrance into the scientific arena.

2.8.3 Testing and verification through experimentation

Dembski (1999) says that ID can be tested and verified if this means that ID is sensitive to new evidence. He continues that one cannot say design is not testable and reverse this opinion and report that it was tested by Darwin and soundly refuted.

2.9 Results of this process

Dembski (1999) answers the first three criterions by firstly saying that many scientific disciplines such as archaeology and anthropology do not predict, but are concerned with reconstructing the past. This would also be the case with fields that deal with origins or unique events such as the first DNA molecule. Secondly, Dembski claims that the explanatory filter is what made ID verifiable through experimentation. Finally, Dembski explains that not all scientific theories postulate a mechanism. He uses as an example that when Newton came up with his universal law of gravitation despite his refusal to name the mechanism, it was still a fully scientific theory

In explaining the fourth criterion, that of Dawkins (1996) and his hierarchical reductionism, Denton (1986:155) answers by proclaiming "the same hierarchic pattern which may be explained in terms of a theory of common descent, also, by its very nature, implies the existence of deep divisions in the order of nature." Lennox (2009:118), quoting zoologist Mark Ridley (1981:830-832), remarked that any object can be put in a hierarchy. Cars can be ordered because they need the same parts to run not because they descended from each other. The same is true of any

supposed evolutionary hierarchies. Dembski (1999) further explains that to understand a complex system one can also use a top-down approach such as integration theory and that the idea of reductionism is not always true. Therefore, hierarchical reductionism is a useful tool for describing relationships between complex systems and their parts, but is not the only way to describe them and does not necessarily denote an evolutionary relationship.

Dembski (1999) continues to defend ID and the criteria of falsifiability by saying that to falsify something requires that you make assumptions beforehand which can, later, be proven to be false.

2.9.1 Is the scientific method the proper tool for ID?

The sixth criterion is that ID must use the scientific method. Denton (1986) answers this criterion for ID by saying that a unique event such as the origin of something is not possible to be validated by the scientific method. The "fact" of evolution becomes nonsense for Denton, as it is not possible to observe or test these events directly. Denton goes on to say that theories usually have limitations. What we do observe in evolution is slight variations called Darwin's special theory or "microevolution". Darwin's general theory or macroevolution is not seen directly. The theory of evolution is thus good for the special theory and not for the general theory of evolution. If this holds true for evolutionary theory, it also holds true for ID as well. It is not possible to observe complex systems being designed and to understand how they were made. For ID theorists ID becomes a better theory because ID concentrates on what is readily observable and found in nature and concentrates on "natural systems that cannot be explained entirely in terms of natural causes and that exhibit features characteristic of intelligence" (Dembski (2004:75). ID then becomes explaining these systems in a scientific way.

2.9.2 Michael Ruse and his definition of science

Michael Ruse (1982) defines science as the natural, the repeatable and that which is governed by law. Dembski (1999) comments that an objection is raised by Michael Ruse and Eugenie Scott that if ID were successful in making its claim of a non-natural explanation for the origin of life than this would just mean that there is no scientific explanation of origins. By its very definition according to Ruse, science

must deal with methodological naturalism or the natural, the repeatable, that which is governed by law. Dembski further explains that this causes circular reasoning. If the definition of science is only naturalistic explanations than that is all that can be considered scientifically. In this scenario, ID cannot succeed. Johnson (2010) says that there are rules and procedures for determining what scientific facts are acceptable. ID tries to work in this system, not concentrating on how or why something was designed, but on the scientifically verifiable results of this designing process. Lennox (2009) continues the discussion by asking the rhetorical question of what is meant by natural. Presumably, this means that science can only study things that are explainable in terms of the physical sciences such as chemistry, physics and biology. This hypothesis of methodological naturalism should be exposed to scientific scrutiny and abandoned with further facts. Dembski assures his critics that ID does not require one to abandon the natural and look for supernatural explanations. Dembski reminds us that "the proper contrast is between natural causes on the one hand and intelligent causes on the other" (Dembski 1999:105). ID attempts to study what is found in the natural world by not abandoning the natural laws found there and see if there is a case to be made for an intelligent cause as opposed to a purely natural one. The originator of this intelligent cause may be outside of the natural, but the result of this designing is scientifically explainable in our sphere. The originator may also not be in our exact space and time at the origin of this creation. These concepts of space and time are also theoretical and therefore open to scientific scrutiny. One cannot prejudge that such an entity could or could not exist except on purely metaphysical grounds according to Dembski.

The eighth criterion from Michael Ruse was that of repeatability. Miller (1999:212) answered this by saying, "The natural history of evolution is unrepeatable, because the nature of matter made it unpredictable in the first place." Lennox (2009) and Dembski (1999) point to cosmology that is full of one-time events such as the big bang and the origin of life. If repeatability were an absolute criterion for a scientific explanation than cosmology, anthropology, archaeology, and paleontology would not be considered scientific fields.

Finally, Dembski (1999) answers the ninth criterion of a fully scientific theory as being governed by natural laws by stating that there are many new scientific entities that are introduced without knowing the exact laws that guide them.

2.10 Science and Religion

The first scientific claim against religion by Smith (2011:158) was that science is not a faith, but demands facts. This reaction has been responded to by Behe (2006:193) "The conclusion of Intelligent Design flows naturally from the data itself - not from sacred books or sectarian beliefs."

The second scientific claim against religion by Sarkar (2009:291-305) argues that ID is a truly religious theory and that it does not meet the "demarcation criterion between science and non-science". Lennox (2009) tackles this question and argues that the question of ID being science is a misleading question. You could equally ask if theism or atheism were science. The better question is whether there is clear scientific evidence for ID, theism or atheism and whether the evidence leads to a scientifically testable hypothesis.

The third scientific claim against religion by Scott (2009) is the perception for the general populace religion and creationism are related concepts as are science and evolution. Johnson (2010) claims that the terms "science" and "religion" are kept in strict categories and are used to denote scientific conclusions. He says later;

> If we say that naturalistic evolution is science, and supernatural creation is religion, the effect is not very different from saying that the former is true and the latter is fantasy. When the doctrines of science are taught as fact, then whatever those doctrines exclude cannot be true. By use of labels, objections to naturalistic evolution can be dismissed without a fair hearing" (Johnson 2010:25-26).

The very labels that Scott marks as positive evidence for evolution is clear evidence for Johnson that labels are as important as the evidence itself.

2.11 Why ID is Science according to ID proponents

Dembski (1999:107) claims

> It is the empirical delectability of intelligent causes that renders Intelligent Design a fully scientific theory and distinguishes it from the

> design arguments of philosophers or what has traditionally been called "natural theology.

In other words ID is a true scientific theory and is fully distinguishable from religion. Lennox (2009:210) concludes;

> I submit that, far from science having buried God, not only do the results of science point towards his existence, but the scientific enterprise itself is validated by his existence.

The role of science in debating scientific origins was discussed as well as exploring if Intelligent Design be supportively involved in this process. Science was shown to follow the formula of finding facts, developing hypothesis, working with laws, and finally making theories that explain all in this process. Miller and Scott then presented why ID is not science and ID presented why they believe ID is science. ID was claimed to be a truly religious theory by evolution advocates. ID counters that it is breaking the shackles of its creationist past.

Chapter 3

What do the Christian and Hebrew Scriptures say about the involvement of ID in the scientific debate on origins?

3.0 Introduction to Chapter 3

Behe (2006:193) states clearly that “the conclusion of Intelligent Design flows naturally from the data itself - not from sacred books or sectarian beliefs.” Dembski (1999:112) concurs with Behe. ”Design theorists refuse to make this a Bible-science controversy. Their critique of Darwinism is not based on any supposed incompatibility between Christian revelation and Darwinism.” In other words ID is trying to break from their creationist past that is connected to a literal Genesis and a young earth theology. Scott (2009) explains that there are three ways of knowing if something is true, relying on authority, revelation and pure logic. She goes on to say that the first step for creationists is the use of revelation and not verifiable data. The biblical picture relies on revelation and not the scientific method. What can be learned from the Christian and Hebrew scriptures as they relate to ID?

3.1 The Biblical picture of creation

3.1.1 Who created the universe?

According to Vine's (1985) the Hebrew verb *bara'*, Vines number 1254, means “to create, make.” This verb can only be used of a deity, and therefore its use in Genesis 1:1 “In the beginning God created the heavens and the earth.” (All Biblical references in this chapter are from the New International Version.) is unmistakable that a deity, specifically the Hebrew and Christian God, created the heavens and the earth. Other Hebrew verbs for creating such as *`asah*, Vines number 6213, also mean, "to create, do, make”, but this verb allows a much broader spectrum including deities and human agents of creation. Isaiah 45:18 is a good example of how *bara'* and *'asah* are used together in one verse.

> For this is what the LORD says-- he who created (*bara'*) the heavens, he is God; he who fashioned and made (*'asah*) the earth,

> he founded it; he did not create (*bara'*) it to be empty, but formed it to be inhabited-- he says: "I am the LORD, and there is no other".

It is clear that the Hebrew and Christian God created the world and did this without any interference from any other power as God says "I am the LORD, and there is no other." Unger's (1988 article on "Creation") says clearly that

> Whatever interpretations have been given as to the various stages of this process, or the 'days' of creation, or of other particulars, the fact of chief import remains unclouded - that to God is ascribed the work of bringing into existence, by the free exercise of His creative power, the world and all orders of beings that live within it. This is the uniform teaching of the OT Scriptures.

Not only did the Hebrew and Christian God creates the world without any interference from anyone, but the exact method is lost to us. Concerning ID theory, Unger's (1988 article on "Creation") agrees with Behe (2006:193) who said that the "how" or "why" questions are avoided. ID simply asks if there is intentional design in the universe.

3.1.2 What is the Creator like?

John 4:24 tells us that "God is spirit, and his worshipers must worship in spirit and in truth." The Bible continues to teach that this Spirit God is self-sufficient as said in Acts 17:25 "He is not served by human hands, as if he needed anything, because he himself gives all men life and breath and everything else."

Nelson's (1986 article on "Creation") writes "Genesis declares that God existed before creation and is in full control of the physical universe. He called the world into being by His word. His power is absolute. He does not have to conform to nature and cannot be threatened by it." The International Standard Bible Encyclopaedia (hereafter designated as ISBE) article on 'CREATION" further explains that because God is an antecedent of the universe He can't be a part of it and this answers the error of pantheism which is "a doctrine identifying the Deity with the universe and its phenomena." The God of creation cannot be a part of the creation if He is antecedent to it. The Christian and Hebrew scriptures go on to say in Hebrews 4:13 "nothing in all creation is hidden from God's sight everything is uncovered and laid bare before the eyes of him to whom we must give account." This creator God is thus seen as a spiritual being that is self-sufficient, existing

before the creation of the universe, not bound by physical laws and sees all in His creation. Dawkins (1996:200) challenges that;

> Invoking a supernatural Designer is to explain precisely nothing, for it leaves unexplained the origin of the designer. You have to say something like 'God was always there', and if you allow yourself that kind of lazy way out, you might as well just say 'DNA was always there', or 'Life was always there', and be done with it.

The problem, however, is that this is what the Biblical revelation is claiming. God was, indeed, always there. This is not the "lazy way out" as Dawkins says, but simply the declaration of the Bible.

3.1.3 What did He create?

In Genesis chapter 1 God is seen as creating the heavens and the earth (v. 1, Isaiah 40:26, Isaiah 42:5, Nehemiah 9:6, Job 38:4-6,31-32, Proverbs 8:27-30, Acts 17:24), Light (v.3), Separation of light from darkness (vv. 4-5, Isaiah 45;7, Job 38:19), Separation of the water from the sky (vv. 6-8), The land and the sea (vv.9-10, Nehemiah 9:6), vegetation (v.11), sun moon and stars (vv. 14-16, Job 38:31-32), Water creatures and birds (v. 20), livestock and wild animals (vv. 24-25) and finally man (v. 26, Deuteronomy 4:32, Isaiah 45:12, Psalm 89:47) and male and female (v. 27).

Psalm 24:1-2 is indicative of this Biblical teaching.

1 The earth is the LORD's and everything in it, the world, and all who live in it;

2 for he founded it upon the seas and established it upon the waters.

In Genesis 1:27 it says "so God created man in his own image, in the image of God he created him; male and female he created them." The verb *'asah* is used here opening the possibility that man was the direct agent of God's creation or that possibly there was preexisting matter and a process that was used. Matthew Henry's Commentary adds "that man was made last of all the creatures, that it might not be suspected that he had been, any way, a helper to God in the creation of the world: that question must be for ever humbling and mortifying to him." Romans 9:20 states "but who are you, O man, to talk back to God? Shall what is formed say to him who formed it, 'Why did you make me like this?' "

3.1.4 How did God create the universe?

The Christian and Hebrew scriptures state that God made the world by His word (Ps 33:6,9), and by His power, wisdom and understanding (Jeremiah 10:12, Isaiah 40:26.28), by His will (Revelation 4:11) and through the Godhead or trinity (John 1:1-4 1 Corinthians 8:5-8 Ephesians 3:9-12 Colossians 1:13-18 Hebrews 1:1-2) In other words a truly intelligent and powerful creator. The Bible continues that "by faith we understand that the universe was formed at God's command, so that what is seen was not made out of what was visible." (Hebrews 11:3) Matthew Henry's Commentary explains that there was not any "pre-existent matter out of which the world was produced." Matthew Henry's Commentary continues "the fish and fowl were indeed produced out of the waters and the beasts and man out of the earth; but that earth and those waters were made out of nothing." The ISBE states that the world was created "ex nihilo" and answers the objection that you can't get something from nothing by saying "the universe comes from God; it does not come from nothing." Nelson's (1986 article on "Creation") continues that "since God created the universe out of nothing, it is His and will always serve His purpose"

The Christian and Hebrew scriptures also postulate that the creation could not have taken place in time. The ISBE states that "creation may, in an important sense, be said not to have taken place in time, since time cannot be posited prior to the existence of the world." The ISBE continues that Augustine said "the world was not made in time, but with time." In this sense time is as much a part of creation as the earth and the stars.

The "days" of creation in Genesis chapter 1 were not for God to gauge how much time He needed to create the world. These days were used as a testament to the Israelites to observe the Sabbath. "The Israelites are to observe the Sabbath, celebrating it for the generations to come as a lasting covenant. It will be a sign between me and the Israelites forever, for in six days the LORD made the heavens and the earth, and on the seventh day he abstained from work and rested" (Exodus 31:16-17).

There is a clear distinction between the Creator who is not dependent on anything including matter, physical laws and time and the creatures who must live with these limitations.

The Biblical teachings are that God created the world by His word, power, wisdom and understanding and His will alone. He did this using the three persons of the Godhead or trinity. The exact method is lost, but one can tell from Biblical texts that He did this by not using what is present on the earth today and not done in conventional time. These concepts are not scientifically verifiable, but could, nonetheless, be true. Johnson (2010:33) remarks “Can something be non-science but true, or does non-science mean nonsense?”

3.1.5 Why did God create the universe?

God first and foremost created the world for His glory (Isaiah 43:6-8, Numbers 14:21, Psalm 8:1, Ps 19:1-3)

Psalm 19:1-3 is indicative of this teaching:

1 The heavens declare the glory of God; the skies proclaim the work of his hands.

2 Day after day they pour forth speech; night after night they display knowledge.

3 There is no speech or language where their voice is not heard.

The ISBE words it this way “The heavens declare the glory of God, the world manifests or reveals Him to our experience, as taken up and interpreted by the religious consciousness.” We experience God through what is made and this leads to our honoring God.

Secondly, God created the world to receive worship. Psalm 33:6-9 is indicative of this teaching.

6 By the word of the LORD were the heavens made, their starry host by the breath of his mouth.

7 He gathers the waters of the sea into jars; he puts the deep into storehouses.

8 Let all the earth fear the LORD; let all the people of the world revere him.

9 For he spoke, and it came to be; he commanded, and it stood firm.

Collins (2006:161) writes that Saint Augustine in Confessions I.i.1 shared

> Nevertheless, to praise you is the desire of man, a little piece of your creation. You stir man to take pleasure in praising you, because you have made us for yourself, and our heart is restless until it rests in you.

The motives of God are his glory and our giving Him praise and worship. These motives stand in stark contrast to the creatures demand for happiness (Collins 2006:43 reporting on Lewis (1962), protecting God's self-respect (Dembski 2004) and understandable motives (Miller 1994:29-30).

3.2 Naturalism

Christian and Hebrew scriptures presents a creator God who created for His glory and to receive his rightful praise from mankind. He is presented as a spiritual being that is self-sufficient, does not need anything from anyone, and creates without any help from anyone. He is not bound by His creation or the natural laws that inhibit the inhabitants of this creation. He did not need to use any of the usual constraints of naturalism such as time, energy or matter, but could do so if He deemed it best. Unger's (1988 article on "Creation") says He created "by the free exercise of His creative power, the world and all orders of beings that live within it." The exact method of how He created is lost to us.

Dembski, Miller and Scott present a dichotomy of views in relation to how naturalism fits with a creator God. Dembski (1999:105) says;

> The science we look to, however, needs to be unencumbered by naturalistic philosophy. If we prescribe in advance that science must be limited to strictly natural causes, then science will necessarily be incapable of investigating God's interaction with the world.

On the other hand, Miller (1999:254) argues;

> There is simply no theological reason to argue that life cannot have a material basis. There is, however, an abundance of scientific evidence showing the Genesis could not possibly be a step-by-step, factual account of actual events in natural history.

Scott (2009:3) argues that;

> We live in a universe made up of matter and energy, a material universe. To understand and explain this material universe is the goal of science, which is a methodology as well as a body of knowledge obtained through that methodology. Science is limited to matter and energy, but as will become clear when we discuss religion, most individuals believe that reality includes something other than matter and energy.

Miller (1999:219) writes “In the final analysis, absolute materialism does not triumph because it cannot fully explain the nature of reality.”

Dembski is arguing for “something other than matter and energy” and Miller and Scott are arguing for the all-inclusive nature of matter and energy and the rules of naturalism as expressed in the scientific method. Miller stops short of saying that naturalism can explain the entire natural world, as Biblical revelation is claiming.

Hewlett and Peters in (Scott 2006) relates that Thomas Aquinas talked about primary and secondary causation. God is the primary cause as he created and sustains the world. What happens naturally in the world is part of the secondary causation, which scientists can now study, leaving the primary cause to theologians. Miller (2009:160:161) points out that this was Saint Augustine’s view. Augustine said “the universe was brought into being in a less than fully formed state, but was gifted with the capacity to transform itself from unformed matter into a truly marvelous array of structure and life forms.”

In Genesis chapter 1 one sees a pattern of creation:

- Heavens and the earth (v. 1)
- Light (v.3)
- Separation of light from darkness (vv. 4-5)
- Separation of the water from the sky (vv. 6-8)
- The land and the sea (vv.9-10)
- Vegetation (v.11)
- Sun moon and stars (vv. 14-16)
- Water creatures and birds (v. 20)

- Livestock and wild animals (vv. 24-25)
- Man (v. 26)

The question becomes what is part of the primary causation of Thomas Aquinas. Do we have the creation of the heavens and the earth through the creation of the land and sea? What about the sun moon and stars, are they part of the secondary causation? Was all made except the plants and animals? Why does the narrative move in concrete "days" in an exact order whereas one event follows another and there is no break for a first and a second cause?

Miller (1999:162) reports that for Behe (2006) the cell needs to be a first cause as Behe says;

> Suppose that nearly four billion years ago the designer made the first cell, already containing all of the irreducibly complex biochemical systems discussed here and many others.

In other words for Behe, the first cell must have been part of the first cause packed and ready to make complex biological systems. For Dembski (1999) the origin of information and specified complexity must be a part of the first cause. The main goal of ID is to show that nature cannot self-assemble by itself; it needs the input of intelligence. For (Scott 2006:68) every intervention outside of natural processes would need to be a primary cause. For Smith (2011:174) all instances of speciation would now need to be a part of a secondary cause as he says "it is now the evolution denier's burden to show these are not cases of speciation, that some other natural process can account for the changes, over time, in these many life-forms past and present, that lead to new species." For Smith, everything needs a "natural process" to be valid, ruling out any input of Biblical revelation or the supernatural intervention of God in science.

3.3 Biblical answers to Miller's objections

3.3.1 Miller's first design objection – The age of the earth

Sextus Julius Africanus, born in Libya in the 3'rd century, estimated the date of the earth at 5499 years before Christ was born. (Microsoft Encarta 98 Encyclopedia 1993:1997 article on "Africanus, Sextus Julius") He wrote the *Chronographiæ* a history of the world from creation to the year AD 221. This date was adopted by the

eastern churches. James Ussher (1581-1656) wrote the "the *Annals of the World"* where he estimated the creation as 4004 B.C. (Microsoft Encarta 98 Encyclopedia 1993:1997 article on "Ussher, James") This date is inserted in many editions of the King James Version. These estimates will set the stage for the young-earth movement many years later.

John Morris of the Institute of Creation Research (ICR) who wrote the book "The Young Earth" believes that you would need to ignore the Genesis account of creation and the genealogies that follow it. These genealogies follow Adams line from the beginning of creation straight through to the father of Jesus.

Genesis 5:1-32 follows the line of Adam starting with the words "this is the written account of Adam's line. When God created man, he made him in the likeness of God. He created them male and female and blessed them. And when they were created, he called them "man." The passage then follows Adams line from the beginning of Adam through his son Seth (v.3) and finally through to Noah and his sons Shem, Ham and Japheth (v. 32).

This lineage from Adam to Noah and his sons is repeated in 1 Chronicles chapter 1:1-4. This chapter goes further and continues with the line from Noah's son Japeth (v.4). The lineage also continues with Noah's son Ham who was the father of many of the prominent nations in Israel's history such as the "Casluhites (from whom the Philistines came" (v. 12), and the Hittites (v. 13). Finally the lineage continues with Noah's son Shem from whom came Abraham, Isaac and Ishmael (vv. 16-28).

The New Testament lineage in Luke chapter 3:23-38 starts with "now Jesus himself was about thirty years old when he began his ministry. He was the son, so it was thought, of Joseph, the son of Heli." (v.23) This lineage then leads one backward in time to the book of Ruth and Boaz (v. 32), and going further back in time to Shem the son of Noah (v.36). Finally, the exact line and wording bring us back to Adam following the same pattern as Genesis 5:1-32. (vv.36-38). It is interesting to note that in the genealogies from 1 Chronicles chapter 3 verses 10-12 the generations move from Ahaziah (also called Uzziah) to Joash, Amaziah, Azariah and then to Jotham. In the genealogy from Matthew chapter 1 verses 8-9 the lineage moves right from Uzziah to Jotham, with each author choosing the generations most

important for their genealogies. This allows one to be slightly flexible in dating the age of mankind. One would need to ignore these lineages as fantasy and not being real. This is one of the methods used to determine the possibility of a young-earth sparking the controversy between a literal interpretation of these lineages' leading to a young-earth theology and modern day science.

Behe (2006) clearly states that the ideas of a young earth and ID are not necessarily linked. You could see an object, conclude design, and not know when it was designed. Behe (2006) says later that ID does not necessarily imply an old universe. Clearly for ID, a young-earth or an old-earth theology could be compatible.

Grudem (1994:308) has this to say about a young earth versus an old earth theology;

> Although our conclusions are tentative, at this point in our understanding, Scripture seems to be more easily understood to suggest (but not to require) a young earth view, while the observable facts of creation seem increasingly to favor an old earth view. Both views are possible, but neither one is certain. And we must say very clearly that the age of the earth is a matter that is not directly taught in Scripture, but is something we can think about only by drawing more or less probable inferences from Scripture…There are difficulties with both old earth and young earth viewpoints, difficulties that the proponents of each view often seem unable to see in their own positions.

From the Christian and Hebrew scriptures, one could come to the conclusion of a young or old earth theology assuaging Miller's concerns about the age of the earth and recent scientific discoveries.

3.3.2 Miller's second design objection – Natural Selection

The objection from natural selection turns out to be too specific a question, as the Bible will allow. The mechanism of God is left to one's faith and not to scientific scrutiny.

3.3.3 Miller's third design objection – The apparent family trees of animals

Unger's (1988 article on "Creation") talks of a "succession of creative acts" in Genesis and says "taking the account as a whole, we have revealed a succession of creative acts, constituting together one great process of creation." The ISBE

continues that the early chapters of Genesis “recognize creation as marked by order, continuity, law, plastic power of productiveness in the different kingdoms, unity of the world and progressive advance.”

In the book of Genesis chapter 1 God created the “heavens and the earth” on the first day. (Genesis 1:1). The Hebrew verb *bara’* is used in this instance. On the same day God made the basic elements “and God said, "Let there be light," and there was light.” (v.3) and separated it from the darkness (vv. 4-5). Showing the elements created by His word. Matthew Henry’s Commentary commented that God could have just as easily said “let there be a world’ as “let there be light” and it would have been so. On the second day God again said “let there be” and separated the water from the sky (vv. 6-8) slowly bringing order from chaos.

On the third day in continuing to bring order from chaos “God said, "let the water under the sky be gathered to one place, and let dry ground appear." And it was so. God called the dry ground "land," and the gathered waters he called "seas.” (vv.9-10). God then moved on to making vegetation (v.11) On the fourth day God made the sun moon and stars (vv. 14-16). In verse 16 *‘asah* is used instead of *bara’* meaning another process could have been used. On the fifth day God said "let the water teem with living creatures, and let birds fly above the earth across the expanse of the sky." (v. 20). In verse 21 it says “so God created the great creatures of the sea and every living and moving thing with which the water teems, according to their kinds, and every winged bird according to its kind.” The Hebrew changes to *bara'* indicating that God, indeed, created these animals Himself. Finally in verses 24-25 God created livestock and wild animals. In verse 25 the Hebrew moves back to *‘asah*. The pinnacle of God’s creation was man. God said “let us make man in our image, in our likeness, and let them rule over the fish of the sea and the birds of the air, over the livestock, over all the earth, and over all the creatures that move along the ground." (v.26) and the sexes in verse 27 “so God created man in his own image, in the image of God he created him; male and female he created them.” In verse 26 *‘asah* is used and in verse 27 *bara’* is used for the same creative act.

So we do seem to see a progression in the creation from the “heavens and the earth” on the first day in Genesis 1:1 through creating light and darkness and then the land and the seas and on the same day the vegetation. He then made the

sun moon and stars. After that He made the fish and birds. Then he made the livestock and wild animals. Finally, at the pinnacle, He made man and made him male and female.

Miller (1999) questions this Genesis account and has the four following concerns. Firstly, Miller questions whether each species is an independent creation. Secondly, Miller questions why so many species go extinct. Thirdly, Miller asks why there is a clear progression in the fossil record. Finally, Miller laments that this progress could not take just six days as the fossil record shows millions of years of extinction.

Miller (2009:116) reports that the textbook *Of Pandas and People* wrote that

> Intelligent Design means that the various forms of life began abruptly thorough an intelligent agency, with their distinctive features already intact - fish with fins and scales, birds with feathers, beaks and wings, etc.

In other words, the world was created with a fiat creation. Erickson (1998:503) answers;

> It should be apparent that there is no difficulty in reconciling fiat creationism with the biblical account. Indeed, this view reflects a strictly literal reading of the text, which is the way the account was understood for a long time in the history of the church.

Grudem (1994:277) struggles with any other view than fiat creationism and jokingly recounts of Genesis 1:11;

> And God said, "let the earth bring forth living creatures according to their kinds." And after three hundred eighty-seven million four hundred ninety-two thousand eight hundred seventy-one attempts, God finally made a mouse that worked.

For Grudem God clearly says in Genesis 1:11 “then God said, "let the land produce vegetation: seed-bearing plants and trees on the land that bear fruit with seed in it, according to their various kinds." The next sentence clearly says “and it was so.”

In contrast, The ISBE, reads Genesis 1:11 in a different light. The ISBE notices that the biblical record does not say that each species was a specific act of God. In Genesis 1:11 God says "let the land produce vegetation: seed-bearing

plants and trees on the land that bear fruit with seed in it, according to their various kinds." Later in verse 24 God says "let the land produce living creatures according to their kinds: livestock, creatures that move along the ground, and wild animals, each according to its kind." For the ISBE this could indicate a “certain mediation of secondary powers in the elements” allowing for some sort of evolution to take place. The phrase “according to their kinds” or “according to their various kinds” allows, for the ISBE, the option of heredity. In verse 22, God said to "be fruitful and increase in number and fill the water in the seas, and let the birds increase on the earth." For the ISBE this allows for the "struggle for life," "natural selection" and "survival of the fittest" that is needed for evolution to take hold. So each species does not have to be a fiat of God. The phrase “be fruitful and increase in number” could allow for the progression and the extinction that one sees in the fossil record and as God does not create in time, this could eliminate the time question for Miller. The word "created" (*bara'*), as used in Genesis, does not necessarily exclude pre-existing matter and form. We also see *bara'* and *‘asah*;’ used interchangeably. One sees *bara'* used in Genesis 1:1 for the initial creation. The pinnacle of God’s creation was man. God said “let us make man in our image, in our likeness, and let them rule over the fish of the sea and the birds of the air, over the livestock, over all the earth, and over all the creatures that move along the ground." (v.26) and the sexes in verse 27 “so God created man in his own image, in the image of God he created him; male and female he created them.” In verse 26 *‘asah* is used and in verse 27 *bara'* is used for the same creative act.

3.3.4 Miller’s fourth and fifth design objections – Aristotle and Imperfection

The ISBE notices “the absolute freedom of God in the production of the universe” and that “that He is so much greater than the universe.” Nelson’s (1986 article on “Creation”) also noticed that “as He shaped creation without any interference from anyone, He will bring creation to its desired end. No power can frustrate God in His purpose to complete the process started in creation and revealed in Scripture. Our hope rests in the sovereign power of Him who created the world and then re-created us through the saving power of His Son, Jesus Christ.”

Dembski (2004) is clear in saying that it is not necessary for ID to know the motives behind what is designed, but to simply detect intentional design in biological

systems in contrast to apparent design. If this detection can be done in a scientific way then a bridge will be created between science and theology.

3.4 Faith versus Science

Smith (2011:158) argues firstly that "science is not a faith; it demands evidence for claims, whereas in direct opposition, faith means to believe without evidence." Scott (2009:19) explains that "the ultimate statement of creationism - that the present universe came about as the result of the action or actions of a divine creator - is thus outside the abilities of science to test." For the evolutionist writers of Smith and Scott Biblical revelation and the faith that is involved would remove these concepts from the scientific arena altogether.

Christian and Hebrew scriptures answer by saying that "now faith is being sure of what we hope for and certain of what we do not see" (Hebrews 11:1) and "we live by faith, not by sight." (2 Corinthians 5:7). The wording of "sure" and "certain" are not part of science as "science is quintessentially an open-ended procedure in which ideas are constantly tested and rejected or modified" (Scott 2009:8). Science could be said to be by "sight" and not by "faith".

The ISBE says the "primary fact of the beginning of the time-worlds-- the basal fact that the worlds came into being by the Word of God-- is something apprehensible only by the power of religious faith." This cannot be a part of science as the ISBE continues "of the original creative action, lying beyond mortal ken or human observation, science-- as concerned only with the manner of the process-- is obviously in no position to speak." The IBSE continues that "it also cannot be a part of evolution. If creation be the act of bringing into existence material or substance which did not previously exist, evolution does not touch the problem. It has nothing to say of a First Cause. The idea of a first cause may be regarded as material for metaphysics or the ground of religious belief."

This faith has some logical conclusions. One logical outcome is for Denton (1986:266) who points out "efficient enzymes must have preceded an accurate translational system but efficient enzymes are absolutely dependent on accurate translational system." In other words, this point can be said logically but not proven scientifically. The connection between this faith and logic is seen by Miller

(1999:226) who says “either there is a God, and the big bang dates the moment of His creation of the universe, or there is a tendency of matter to create itself from nothingness.” Collins (2006:67) would agree

> The Big Bang cries out for a divine explanation. It forces the conclusion that nature had a defined beginning. I cannot see how nature could have created itself. Only a supernatural force that is outside of space and time could have done that.

Finally Matthew Henry’s Commentary goes to the point of saying that being an atheist is folly because the world cannot create itself. For the ISBE “such intuitive faith is really an application of first principles in the highest - and a truly rational one.” The connection can be made between logic and faith, but not between faith and science even though both use logic at their base as Scott (2009) states that something cannot be true scientifically if it is not true logically.

Miller (2009:197) warns of the dangers of this faith and says “once the supernatural becomes a valid element in scientific inquiry, science will cease to be an empirical search for the truth of the natural world.” The supernatural is simply “of or relating to existence outside the natural world” or “attributed to a power that seems to violate or go beyond natural forces.” (The American Heritage Dictionary of the English Language 1992) In this sense God cannot be anything but supernatural as He is “outside of nature” by His very being. So to study God is to study the supernatural by definition. Dembski (1999:105) words it this way;

> There's an important contrast to keep in mind here. Science, we are told, studies natural causes, whereas to introduce God is to invoke supernatural causes. This is the wrong contrast. The proper contrast is between natural causes on the one hand and intelligent causes on the other.

God is the intelligent cause, and He just happens to be an antecedent of nature, and not bound by it.

3.5 Creation and Evolution

The ISBE reveals one view of Genesis and says “the early chapters of Genesis were, of course, not given to reveal the truths of physical science.” The ISBE continues “Creation is certainly not disproved by evolution, which does not

explain the origin of the homogeneous stuff itself, and does not account for the beginning of motion within it." The idea of evolution does need to begin with the origin of DNA or the earth and its elements. For ISBE, "the theory of evolution begins with matter or substance already in existence." The theist posits "an uncaused Cause who is greater than they, and possesses all the potentialities exhibited in them, together with much more (therefore at least a personal being), has brought them into existence by the power of His will." For the ISBE an evolutionist can be a theist or an atheist but must believe that evolution is the method of transformation of matter and energy already in existence.

One could teach as Miller (2009:119) does that "the capacity for life is built into matter. In fact, the key molecules of life are largely constructed from just a few relatively common atoms, such as hydrogen, oxygen, carbon, nitrogen, phosphorous, and sulfur. In that sense the chemical properties of these atoms are what make life possible." One could also postulate as Scott (2009:122) states that Thaxton, Bradley, and Olsen (1984) teach that "it is fundamentally implausible that unassisted matter and energy organized themselves into living systems." The origin of matter, DNA and its replicating mechanism can be attributed to God or can be just said to be a part of the natural world.

3.6 Importance of the doctrine of Creation

Unger's (1988 article on "Creation") states that the doctrine of creation is both "theoretically and practically of fundamental importance". The doctrine of creation is theoretically important firstly as Unger's (1988 article on "Creation") says that God's "eternal greatness and majesty can be felt by us only when we conceive of Him as "before all worlds" and the Creator of all." He is truly deserving of our honor and awe when one considers the world and all that is in it. The doctrine of creation is theoretically important secondly as Unger's (1988 article on "Creation") states that in this doctrine we have the "true revelation of God". Because His word is true (John 17:17) one can know the true history of the beginning as well as the end of the heavens and the earth. The doctrine of creation is theoretically important thirdly as Unger's (1988 article on "Creation") states that the objection to miracles go away as one sees God as an antecedent to the universe and not bound by its laws. The doctrine of creation is theoretically important fourthly as Matthew Henry's

Commentary says that God is in control and the owner of the heavens and the earth because He made it from nothing without any help from anyone. The doctrine of creation is theoretically important fifthly as the unseen world is revealed by the seen world.

> For since the creation of the world God's invisible qualities-- his eternal power and divine nature-- have been clearly seen, being understood from what has been made, so that men are without excuse (Romans 1:19-21).

The unseen world must be taken by faith and this faith is helped along by what we can see.

The doctrine of creation is practically important firstly as Unger's (1988 article on "Creation") says that God can rightly ask for our worship and be in his service. Nehemiah words it this way "you alone are the LORD. You made the heavens, even the highest heavens, and all their starry host, the earth and all that is on it, the seas and all that is in them. You give life to everything, and the multitudes of heaven worship you." (Nehemiah 9:6). The praise continues in Revelation "you are worthy, our Lord and God, to receive glory and honor and power, for you created all things, and by your will they were created and have their being." (Revelation 4:11) God also says that He has the right to judge us in Hebrews 4:13 "nothing in all creation is hidden from God's sight everything is uncovered and laid bare before the eyes of him to whom we must give account." The doctrine of creation is practically important secondly as Unger's (1988 article on "Creation") writes "for only when we apprehend the broad and wholesome teaching of the Scriptures upon this subject can we fully commit ourselves unto God as unto a faithful Creator." This creator is our ever present help in times of trouble as said in Psalms 46:1 "God is our refuge and strength, an ever-present help in trouble." In addition, later in Psalms "my help comes from the LORD, the Maker of heaven and earth." (Psalms 121:2). The doctrine of creation is practically important thirdly as Grudem (1994:309) shows "we can wholeheartedly enjoy creative activities…with an attitude of thanksgiving that our Creator God enables us to imitate him in our creativity." In knowing the source of creativity, we can not only enjoy the creative arts, but also be thankful in doing them. The doctrine of creation is practically important fourthly as Grudem (1994:309) points out "the doctrine of creation will also enable us to recognize more clearly that

scientific and technological study in itself glorifies God, for it enables us to discover how incredibly wise, powerful, and skillful God was in his work of creation." Psalm 111:2,10 words science as "great are the works of the LORD; they are pondered by all who delight in them… The fear of the LORD is the beginning of wisdom; all who follow his precepts have good understanding. To him belong's eternal praise" The doctrine of creation is theoretically important as this creator God is deserving of our honor for what He has made. One is reminded that God's word is true and that that miracles can happen. He can help us if He is beyond and more powerful than this world. Finally, this doctrine helps us to believe in the unseen world.

The doctrine of creation is practically important as God has the right to ask for our worship and service. He can also judge sin as he sets the rules. This doctrine forms the backbone of our trust in God for truth and for His help. We can enjoy all creative activities such as drawing, making, building because God is the first builder and artist. Finally, God is the true reason to believe the world has order and therefore the scientific method is possible.

Miller (1999:268) noted that "as more than one scientist has said, the truly remarkable thing about the world is that it actually does make sense. The parts fit, the molecules interact, the darn thing works." Lennox (2009) has remarked that there is the conviction that the universe has order, which makes the scientific method possible. Hawking (1988:122) puts it this way "the whole history of science has been the gradual realization that events do not appear in an arbitrary manner, but that they reflect a certain underlying order." This order combined with the scientific method is what makes science possible. The Christian and Hebrew scriptures take this one step further and states the author of this order.

3.7 Biblical conclusion

Francis Schaeffer (1975:25-33) warned of taking one side or the other too strongly based solely on Biblical texts. He put forth the following seven possibilities. Schaeffer's first postulate is that "there is a possibility that God created a "grown-up" universe." Morris (1994) talked of a functionally mature creation where Adam would appear to be perfect and not have any appearance of age. At the moment of creation Adam would look as a full grown man, light would be on the way to the earth

and animals and trees would have the appearance of being fully grown. Schaeffer's second postulate is that "there is a possibility of a break between genesis 1:1 and 1:2 or between 1:2 and 1:3." Schaeffer's third postulate is that "there is a possibility of a long day in Genesis 1" Collins (2006:152) reported that Augustine wrote in "The City of God" XI.6 that "what kind of days these were, it is extremely difficult, or perhaps impossible for us to conceive." Schaeffer's fourth postulate is that "there is a possibility that the flood affected the geological data." Morris (1994) writes that the fossils that we see could be from Noah's flood. Schaeffer's fifth postulate is that "the use of the word "kinds" in Genesis 1 may be quite broad." Scott (2006) lamented that the line between macroevolution and microevolution can never be breached by creationists because any evidence is conveniently labeled as microevolution within a "kind", and this definition of a "kind" is never specifically spelled out. Schaeffer's sixth postulate is that "there is a possibility of the death of animals before the fall." Schaeffer's seventh postulate is that "where the Hebrew word *bara'* is not used there is the possibility of sequence from previously existing things." These seven possibilities from Schaeffer open up the possibility for differing interpretations for the Genesis account from young-earth to old-earth time scales and from fiat creationism to some sort of evolution.

Chapter 4

Practical implications and concluding remarks

4.0 Introduction to Chapter 4

The beginning of this study asked the following question: As vocal opponents of Intelligent Design what light do Ken Miller and Eugenie Scott shed on what obstacles would the Intelligent Design Movement have to overcome to be supportively involved in the scientific debate on origins?

From this question the following hypotheses was asked: The author will show that the Intelligent Design Movement must adapt their strategy to match the present day definition of science and the present pro-evolution paradigm that is prevalent in science. This may not be possible due to the nature of a designer and a new strategy will need to be developed. Further, the author will show that the nature and role of a designer will impact the acceptance of Intelligent Design in natural science debates on the origin of life and possibly hinder Intelligent Design from satisfactorily answering the objections of Miller and Scott.

The study listened to the objections of Miller and Scott and the answers to these objections by ID advocates. The role of a designer was considered as well as the Biblical role of a creator. The “crypto-creationist” view of ID was heard. Finally the role of science according was examined and compared with ID theory.

4.1 What do Miller and Scott believe?

Ken Miller, a Brown University professor is deeply concerned with the issue of evolution and its relation to ID. He says he is a theist and tries to reconcile a belief in evolution with his Christian faith. Miller believes that a lot of hostility comes from taking Genesis literally. Eugenie Scott is the director of the National Center for Science Education in Oakland California. She is deeply concerned with the integrity of science and the war between science and religion. Eugenie Scott says that we can do science without attacking God (Scott 1998:24-25). Miller and Scott are both

known for their promotion of science as the supreme way of knowing. They are equally committed to fighting the claim that “an intelligent designer is needed to explain evolution of complex systems” (Miller 2007:Abstract). Miller and Scott are in full agreement that evolution is unquestionably true. If evolution is true, and ID is not science, then it should be kept out of the public school science curriculum.

4.2 What does the theory of evolution teach?

Miller (1999:7-8) Described Charles Darwin’s argument by saying that plants and animals that are domesticated show a great deal of variation in size, color etc. There are many kinds of horses for example from the very small to the very large. This same kind of variation also exists in wild plants and animals. Living organisms are engaged in a struggle for existence with the same species pushing for the same resources, thus struggle plus variation results in natural selection. The winners get the right to reproduce and possibly to become new species. Miller asks the rhetorical question, “How many of your direct ancestors died in childhood? “ Miller’s rhetorical answer is “NONE”! Smith (2011) simplified this explanation and simply said that Evolution is the consequence of replication, variation and selection. Extolling its virtues, Richard Dawkins said, “The one thing that makes evolution such a neat theory is that it explains how organized complexity can arise out of primeval simplicity.” (Dawkins 1996:451) This simple to complex idea lays heavily in Darwinian literature.

Commenting on this theory, Phillip Johnson said;

> Charles Darwin made evolution a scientific concept by showing, or claiming to have shown, that major transformations could occur in very small steps by purely natural means, so that time, chance, and differential survival could take the place of a miracle. If Darwin's scenario of gradual adaptive change is wrong, then "evolution" may be no more than a label we attach to the observation that men and fish have certain common features, such as the vertebrate body plan (Johnson 2010:31).

In other words, could the same data be used to support design or evolution?

4.3 What does ID teach?

Dembski (1999:48) explains ID in this way;

> Intelligent Design formalizes and makes precise something we do all the time. All of us are all the time engaged in a form of rational activity which, without being tendentious, can be described as "inferring design". "Inferring design" is a perfectly common and well-accepted human activity. People find it important to identify events caused through the purposeful, premeditated action of an intelligent agent and to distinguish such events from events due to natural causes. Intelligent Design unpacks the logic of this everyday activity and applies it within the special sciences. There is no magic, no vitalism, no appeal to occult forces here. Inferring design is common, rational and objectifiable.

In other words, Dembski proposes that the focus of ID is to detect intentional design in organisms and structures and to show how design could overthrow naturalism. In explaining these systems that need intelligence, ID is clear in saying that that it is not necessary for ID to know the motives behind what is designed (Dembski 2004), or the identity of the designer (Behe 2006:196). Dembski (1999) further explains that ID is firstly a “scientific research program that investigates the effects of intelligent causes.” Secondly ID is “an intellectual movement that challenges Darwinism and its naturalistic legacy.” Finally, ID is a “way of understanding divine action.” For Dembski this is the way to intersect science and theology.

4.4 Miller’s 5 design objections to Intelligent Design

Lennox (2009:11) comments on the hypothesis, proposed by Dembski (2004), with these words

> At least some of the heat results from the fact that the term 'intelligent design' appears to convey to many people a relatively recent, crypto-creationist, anti-scientific attitude that is chiefly focused on attacking evolutionary biology.

This observation from Lennox (2009:11) encapsulates the objections that Miller and Scott establish in their respective writings. These include Miller’s five design objections to Intelligent Design the “relatively recent” recent concepts of Complex Specified Information and Irreducible Complexity, ID promoting creationism and finally scientific objections with intelligent design.

4.4.1 The age of the earth

Miller's first design objection comes from the age of the earth that creationists and some ID supporters say is less than 10,000 years (Scott 2006; Johnson 2010). Miller (1999) explains that there is a purely scientific consensus of the age of the earth of approximately 4.5 billion years using experiments with uranium and thorium. For Miller there is either an incorrect timeline or believers in a literal Genesis must argue about the constants of the universe. Woodward (2003:18) quotes James Glanz (2001) as saying "proponents of this theory… accept that the earth is billions of years old, not the thousands of years suggested by a literal reading of the Bible."

4.4.1.1 Can ID solve Miller's objection to the age of the earth?

Behe (2006) clearly states that one could see an object, conclude design, and not know when it was designed. It becomes clear that to be part of the ID movement, a belief in a young earth is not a requirement. ID is therefore compatible with young earth or old earth positions.

4.4.2 Evolution's mechanism Natural Selection

Miller's argument is that the mechanism of natural selection is testable and more than enough to account for the diversity of life. For evolutionists like Smith (2011:209) they lament that "the old incredulous arguments that complexity could not occur by natural processes are just that: old, propagated by unexamined tradition, uninformed by new discoveries, and incredulous, disbelieving in a past."

Smith (2011:209) agrees with Miller and Dawkins (1996:451) that that the mechanism of natural selection is explainable by small steps through the vast ages by saying;

> If we think of the complexity of a bacterial flagellum today and how it operates as a mechanism of propulsion today, we might conclude that its complex mechanisms must all have been assembled at the same time for the function that we see today. But this misses the possibility that the flagellum could have developed in small steps not for what we see today but for some other functions or for functions in the past. The flagellum, if we consider evolutionary history, did not pop up, fully formed it was built over time by replication, variation, and selection.

Smith (2011:175) finalizes his evidence in saying that many lines of evidence converge for Smith.

> The fact that the fossil and genetic evidence corroborate one another - even though they were developed centuries apart and for different reasons - is compelling support for a Darwinian explanation of the diversity of life today and in the past. To dismantle evolutionary theory today, deniers of evolution are going to have to dismantle molecular biology as well as the study of ancient life in the fossil record. That is a tall order.

So for Smith (2011) the use of small steps over vast amounts of time and the convergence of the fossil and genetic evidence are irrefutable evidence for Smith and other evolutionists like Dawkins and Miller that evolution has, indeed, happened.

Miller (2009:119) heralds all this evidence by saying that "how does all of this apply to the issue of evolution? What it means, first and foremost, is that the capacity for life is built into matter." Miller (2009:133) continues;

> By suggesting that the capacity for macroevolutionary change is already present in life, they do away with the need for a designer to infuse such change into it. In short they state that we need not look to forces above nature to account for the living world, and that the scientific case for Intelligent Design has failed.

The backbone of Miller and Scott's objections to design, the unneeded infusion by a designer has been borne out by science according to Miller (2009), Collins (2006), Dawkins (1996), Scott (2006) and Smith (2011).

For some ID proponents and creationists like Morris (1994:27) they counter with "It is inconceivable to most Christians that the incredible design and order that we see in the universe, especially in plants and animals, could have come about by mere natural processes, mindless and random." Johnson (2010:89) sets the importance of this issue. "If laboratory science cannot establish a mechanism… then Darwinism fails as an empirical theory."

For ID proponents the mechanism of natural selection has the conceptual problems of changing the organism's physical parameters such as a beaver-sized rat (Denton 1986) and the problem of complexity. Denton (1986) uses the example of the brain that has ten thousand million nerve cells and each cell has ten to 100

thousand connecting fibers all in perfect organization. Denton remarks that the brain has more connections than all the communication networks on earth. Denton asked is this possible all from chaos?

ID proponents also feel that the claims of natural selection are full of rhetoric as Lennox (2009:120) reports that Thomas Nagel (2008:199) answers that;

> Evolutionary biologists regularly say that they are confident that random mutations are sufficient to account for the complex chemical systems we observe in living things, yet, he feels that there is a great deal of pure rhetoric in their arguments and judges that the evidence is not sufficient to rule out the input of intelligence.

Behe (2006:65) continues that "some evolutionary biologists - like Richard Dawkins - have fertile imaginations. Given a starting point, they almost always can spin a story to get to any biological structure you wish."

4.4.2.1 Can ID solve Miller's objection to the limitations on evolution's mechanism Natural Selection?

The main points of contention are that firstly the mechanism of natural selection is testable and more than enough to account for the diversity of life. Secondly, that natural selection is explainable by small steps through the vast ages (Smith 2011:209, Dawkins 1996:451). Smith (2011:175) adds thirdly that "the fact that the fossil and genetic evidence corroborate one another - even though they were developed centuries apart and for different reasons - is compelling support for a Darwinian explanation of the diversity of life today and in the past." Miller (2009:119) adds finally "the capacity for life is built into matter."

The mechanism of natural selection is not an established theory for ID proponents (Johnson 2010:89) and ID proponents say that "what Darwinists need to supply is not an arbitrary philosophical principle, but a scientific theory of how macroevolution can occur" (Johnson 2010:93). This becomes central to ID theory. If "the capacity for life is built into matter" Miller (2009:119) and "the fossil and genetic evidence corroborate one another" Smith (2011:175) than the backbone of Miller and Scott's objections to design, the unneeded infusion by a designer has been borne out by science according to Miller (2009), Collins (2006), Dawkins (1996), Scott (2006) and Smith (2011). On the other hand, "if Darwin's scenario of gradual

adaptive change is wrong, then "evolution" may be no more than a label we attach to the observation that men and fish have certain common features, such as the vertebrate body plan" (Johnson 2010:31). There seems to be a limit for ID proponents where microevolution happens (Morris 1994:10; Johnson 2010:90), but macroevolution does not (Dembski 1999:113; Denton 1986; Johnson 2010:93; Morris 1994:10).

4.4.3 Microevolution and Macroevolution

Scott (2006) says that scientifically, microevolution happens within a specific gene pool and macroevolution occurs between gene pools. Collins (2006:132) writes "the distinction between macroevolution and microevolution is therefore seen to be rather arbitrary; larger changes that result in new species are a result of a succession of smaller incremental steps."

Scott (2006) relates that for creationists and some ID supporters natural selection accounts for only small changes within "kinds". Scott (2006) continues by saying that for creationists and some ID supporters this is not evolution at all but microevolution within a "kind". This creates a major contention between Miller and Scott and ID theorists. This contention is also central to ID theory. Morris (1994:10) is clear that

> Small adaptations within a population of organisms which allow a certain trait to be expressed to a greater or lesser degree than before; variation within a given category. These are regularly observed to occur within living populations.

In other words microevolution does happen and there is no dispute.

However, for Johnson (2010:90) "the point in dispute is not whether microevolution happens, but whether it tells us anything important about the processes responsible for creating birds, insects, and trees in the first place." In other words, the boundary between microevolution and macroevolution is non-existent for evolutionists and an impenetrable wall for ID proponents.

This seems to be one area of agreement between creationism and ID. Lennox (2009) adds that these macroevolutionary steps have not been observed and is not dissimilar to the unobserved workings of a designer. Lennox says further that to put

forth the hypothesis of a designer is no more scientific than to imagine macroevolutionary steps that may or may not have happened. Johnson (2010:93) agrees and says "what Darwinists need to supply is not an arbitrary philosophical principle, but a scientific theory of how macroevolution can occur." Dembski (1999:113) explains ID' stance by saying;

> What evidence there is supports limited variation within fixed boundaries, or what typically is called microevolution. Macroevolution - the unlimited plasticity of organisms to diversify across all boundaries - even if true, cannot legitimately be attributed to the mutation-selection mechanism. To do so is to extrapolate the theory beyond its evidential base.

The hypothesis of macroevolution for ID proponents is unobserved, goes beyond the factual data and is simply an "arbitrary philosophical principle" (Johnson (2010:93), and not dissimilar to a designer.

4.4.3.1 Can ID solve the problems with Microevolution and Macroevolution?

The scientific distinction of microevolution being within gene pools and macroevolution being between gene pools (Scott 2006) and the distinction of "larger changes that result in new species are a result of a succession of smaller incremental steps" (Collins 2006:132) forms the basic contention between ID theory and evolutionists.

For creationists and some ID supporters natural selection accounts for only small changes within "kinds". This allows a "certain trait to be expressed to a greater or lesser degree than before; variation within a given category" (Morris 1994:10) but is not evolution at all but microevolution within a "kind" Scott (2006). ID supporters would say that "the point in dispute is not whether microevolution happens, but whether it tells us anything important about the processes responsible for creating birds, insects, and trees in the first place" (Johnson 2010:90). They say that macroevolution has not been observed, and not unlike the working of a designer. (Woodward 2003:18 quoting Glanz 2001).

Is macroevolution an "arbitrary philosophical principle" for Johnson (2010:93) or a scientific principle (Scott 2006, Collins 2006:132)? Schaeffer (1975:25-33) reports that "the use of the word "kinds" in Genesis 1 may be quite broad." This

position allows for the possibility of a scientific or philosophical principal for macroevolution.

4.4.4 The apparent family trees of animals

Denton (1986:46-47) states that “one of the key arguments Darwin advances, and one to which he returns at least implicitly in many places in the Origin, is that once it is conceded that organisms are inherently capable of a considerable degree of evolutionary change, then might they not, especially if a great length of time is allowed, be potentially capable of undergoing practically unlimited change sufficient even to bridge some of the seemingly most fundamental divisions of nature?” Miller (2009) recounts that this is what is found in scientific research. When one studies the history of the earth two patterns arise. Firstly, there is a sequence to new organisms. The single-celled organisms arrived first and through the millennia, the organisms became increasingly complex. Secondly, new species have a remarkable resemblance to the old species that they replaced. For Miller (2009) these two observations are not explainable for creationists and some ID supporters who use the Genesis scenario. What one actually sees in nature, in Millers view, is a progression where new species appear all the time and most of them go extinct as seen in the fossil record.

Michael Behe (2006) reports that common descent is “fairly convincing” and that common descent is “not incompatible” with ID. Johnson takes exception to this assessment. Firstly, Johnson (2010:90) says, “we do not observe a common ancestor for modern apes and humans. Secondly, Johnson (2010:90) says, “what we do observe is that apes and humans are physically and biochemicallly more like each other than they are like rabbits, snakes, or trees.” Thirdly, Johnson (2010:118) says that “Darwinists take for granted that "relationship" is equivalent to common ancestry.” For Johnson, this line of logic does not tell you where apes, humans, rabbits, snakes, or trees come from to begin with. Lennox (2009) relates that the genetic similarities are also not overwhelming proof of Darwinism as the ability to put things in a hierarchy and pronounce that they are genetically common ancestors of each other is not scientific proof that this has occurred. We cannot know if natural selection or common design is responsible. Denton (1986:93) states that “evidence for evolution exists in nature wherever a group of organisms can be arranged into a

lineal or sequential pattern, in which case the idea of evolution becomes almost irresistible."

4.4.4.1 Can ID solve Miller's objection to the apparent family trees of animals?

The sequence to life on earth is a major contention for evolutionists. For Miller (2009) life moves steadily from single- celled to multi-celled animals in a steady progression to humans with each successive stage similar to the organisms it takes over. Most of these stages end up being extinct. For creationists they question whether a theory of ID or a literal Genesis could explain this trend. For Michael Behe (2006) this theory of common descent is possible, but for Johnson (2010:90) this trend is not observed. The only facts are that some organisms are similar to each other and this "relationship" is not equivalent to common ancestry. Simply putting organisms into a hierarchy is also not evidence for Darwinism for Lennox (2009). We cannot know if natural selection or common design is responsible. These family trees are suspect for some ID writers like Johnson but convincing for others like Behe (2006) who believes that common descent is "fairly convincing" and is "not incompatible" with ID. In any case the fact of design remains.

4.4.5 Aristotle and Imperfection

Miller (2009) reports that for Aristotle there are four distinct causes for a bowl. Its material cause is that it is made of plastic, its formal cause is its concave shape, its efficient cause is its place of manufacture in a factory and finally its final cause or purpose is to hold food. When these causes are applied to ID than the efficient cause for Miller as expressed in ID is the unknowable whims of a designer. Miller (2009) then asks the rhetorical question: what is the final cause of a mosquito or bubonic plague? According to Miller, ID does not have an answer. There is also no answer for ID in the related questions of design imperfections such as pseudogenes and the design of the backbone. Miller (1999:185) quoting Hull (1991:485-486) expresses this sentiment as;

> Whatever the God implied by evolutionary theory and the data of natural history may be like, He is not the Protestant God of waste not, want not. He is also not a loving God who cares about His productions. He is not ever the awful God portrayed in the book of Job. The God of the Galapagos is careless, wasteful, indifferent,

> almost diabolical. He is certainly not the sort of God to whom anyone would be inclined to pray.

ID answers in four ways. Firstly, Dembski (1999) retorts that it is not the intelligence of the designer that is in question it is simply to detect design, even in the case of sub-optimal design. Secondly, there can be multiple motives such as obsolescence, no motives or an unrelated moral lesson involved according to Behe (2006). To determine these motives requires that we have contact with the designer. Lennox (2009) uses the picture of a cake. You can know all the properties of the cake, but this does not completely explain it. To explain why or how the cake was made, you need to ask the baker and find out if it was for a birthday party or just made for fun and if the cake was cooked in an oven or over a fire. Thirdly, for Behe (2006), this also creates a non-sequitor syllogism. A designer would not make this system with this obvious flaw. This system has this flaw. Therefore Darwinian evolution produced this system. In this way, Darwinists reached a conclusion of Darwinism based solely on an emotional feeling of what should be. Fourthly, Behe (2006:222) retorts that for evolutionists "because something does not fit our idea of the way things ought to be, then that is evidence against design." The designer may be the "careless, wasteful, indifferent, almost diabolical" designer of Hull (1991:485-486) or the loving creator as presented in Christian and Hebrew scriptures. The presence of design remains.

4.4.5.1 Can ID solve Miller's objection to Aristotle and Imperfection?

The efficient and final causes of ID are unknowable for Miller (2009). If they are unknowable and there is no answer for ID in the related questions of design imperfections such as pseudogenes and the design of the backbone and they are not able to be studied scientifically. The intelligence of the designer for Dembski (1999) and the motives or lack of motives for Behe (2006) is not the issue. Behe (2006:222) says plainly that "because something does not fit our idea of the way things ought to be, then that is evidence against design" is not scientific and cannot be used against the notion of design itself. There can be a designer whether one likes his or her designs or not. I may or may not like the operating system on my computer, but it is still made by intelligence.

4.5 Complex Specified Information

Dembski (2004) states that the determination of design comes from whether an organism or structure is contingent, complex and specified. In other words, we are looking for complex systems that have a specific function that cannot be attributed to chance.

The objections to Dembski (2004) and his concept of Complex Specified Information comes from Scott (2009) who complains that one cannot know all of the physical properties and laws of nature that could possibly explain whether an organism or structure is intentionally or apparently designed. Secondly nature should self-assemble as naturalism dictates, it nature cannot do this than Dembski's argument would be an argument from the philosophy of science and not a truly scientific one. Dembski (1999) freely admits that the explanatory filter has a problem in determining the absence of design, but is an excellent tool for detecting design in nature. Dembski (2004) acknowledges that natural systems and organisms can exhibit specified complexity, but this is not the same as generating it. The main goal of ID is to show that nature cannot self-assemble by itself; it needs the input of intelligence.

4.5.1 Can ID solve objections to Complex Specified Information?

Dembski (2004) states that the determination of design comes from whether an organism or structure is contingent, complex and specified. In other words, we are looking for complex systems that have a specific function that cannot be attributed to chance. If one cannot know all of the physical properties and laws of nature that could possibly explain whether an organism or structure is intentionally or apparently designed Scott (2009) and if nature should self-assemble as naturalism dictates, than how can Complex Specified Information be a true scientific idea? Dembski (1999) claims that his explanatory filter is an excellent tool for detecting design and that exhibiting signs of specified complexity is not the same as the origins of this information Dembski (2004) that this can truly be a scientific notion for Dembski. The main goal of ID is to show that nature cannot self-assemble by itself; it needs the input of intelligence.

Dawkins (1996:226) says;

> Does it sound to you as though it would need a miracle to make randomly jostling atoms join together into a self-replicating molecule? Well, at times it does to me too…An apparently (to ordinary human consciousness) miraculous theory is exactly the kind of theory we should be looking for in this particular matter of the origin of life.

Scott (2006) commented that one of the arguments against evolution was that the order of the chemical letters of DNA is not controlled by any known natural or chemical phenomena and therefore needs intelligence. Scott believes that this is scientifically incorrect in that known mutational mechanisms can copy, miscopy and modify the DNA sequence of letters that make up the genes. If this is advantageous to the organism than it is eventually spread throughout the population by well-understood means. This is the scientific explanation for where new information comes from. This also explains the families and super families of genes that have a similar composition. Dawkins (1996:199-200) explains further;

> So, cumulative selection can manufacture complexity while single-step selection cannot. But cumulative selection cannot work unless there is some minimal machinery of replication and replicator power, and the only machinery of replication that we know seems too complicated to have come into existence by means of anything less than many generations of cumulative selection! Some people see this as a fundamental flaw in the whole theory of the blind watchmaker. They see it as the ultimate proof that there must originally have been a designer, not a blind watchmaker but a far-sighted supernatural watchmaker. Maybe, it is argued, the Creator does not control the day-to day succession of evolutionary events; maybe he did not frame the tiger and the lamb, maybe he did not make a tree, but he did set up the original machinery of replication and replicator power, the original machinery of DNA and protein that made cumulative selection, and hence all of evolution, possible. This is a transparently feeble argument, indeed it is obviously self-defeating. Organized complexity is the thing that we are having difficulty in explaining. Once we are allowed simply to postulate organized complexity, if only the organized complexity of the DNA protein replicating engine, it is relatively easy to invoke it as a generator of yet more organized complexity.

For ID proponents the origin of this “miracle” and “minimal machinery of replication and replicator power of Dawkins and the original information for Scott needs a primary cause or intelligence. If one has a computer (intelligence) and

software program (more intelligence) than a program can be designed to randomize letters and start the process of mutational mechanisms for Scott (2006). The question for ID proponents is the one of origins. Where did the computer and software program come from? It is a “miracle” for Dawkins and assumed for Scott. For ID proponents this intelligence can be studied. Dawkins says that we cannot “postulate organized complexity” as ID is doing and this creates the friction between ID being a scientific or a religious theory.

4.6 Irreducible Complexity

Michael Behe made this concept popular in his book *Darwin's Black Box - The Biochemical Challenge to Evolution*. Behe (2006:111) writes;

> You can't start with a platform, catch a few mice, add a spring, catch a few more mice, add a hammer, catch a few more mice, and so on: The whole system has to be put together at once or the mice get away.

Note that Behe is talking about systems here, not disparate parts. The system is the key for Behe and that is what is irreducible. The argument according to Scott (2006) would say that if natural selection cannot make complex structures than a designer is needed to explain them.

Miller and Scott launch three objections to Behe and his concept of Irreducible Complexity. Firstly, every instance of Irreducible Complexity would need to be a primary cause. Secondly, complex structures can not only be slowly improved in a systematic fashion but they can also change their function. Finally Scott (2009:125) asks;

> But even if natural selection was unable to explain the construction of irreducibly complex structures, does this mean that we must now infer that intelligence is required to produce such structures? Only if there are no other natural causes - known or unknown - that could produce such a structure.

Does Behe know all of the possible natural explanations both now and in the future?

Behe (2006:228) writes, “The production of some biological improvements by mutation and natural selection - by evolution - is quite compatible with Intelligent

Design theory." These improvements would be part of the secondary causation. The primary cause – intelligence - is what ID is trying to discover. Behe (2006) makes the argument that Paley was not defeated at all. The watch cannot be produced without admitting a very complex starting point such as the 'light-sensitive' spot. This structure needs to be explained both anatomically and biochemically before you can even start the process that Dawkins finds so easy. Thus for Behe the primary causation cannot be explained in terms of a Darwinian mechanism, but still needs an input of intelligence, just as Paley said so long ago.

The second objection with Irreducible Complexity is that a system can not only change itself into something more complex, but it can change its function as well. Behe (2006) answers this objection with the analogy of a bike becoming a motorcycle. He goes on to explain the improbability of such a transformation given the weight of the motor, the use of gasoline as a fuel and a host of other problems with such a transformation. It is conceptually possible until you try and physically make it happen.

Behe (2006:308) quoting from Behe (2004: 353-370) clarifies;

> Here analogies to mousetraps break down somewhat, because the parts of a molecular system have to automatically find each other in the cell. They can't be arranged by an intelligent agent, as a mousetrap is. To find each other in the cell, interacting parts have to have their surfaces shaped so that they are very closely matched to each other… Originally, however, the individually acting components would not have had complementary surfaces. So all of the interacting surfaces of all of the components would first have to be adjusted before they could function together. And only then would the new function of the composite system appear. Thus, I emphasize strongly, the problem of irreducibility remains, even if individual proteins homologous to system components separately and originally had their own functions.

Behe (2006) shortens this line of reasoning and says that a mutation can only change one line of instruction such as the size of the nuts and bolts. It cannot make them work together to begin with. For Behe the starting point is even more complex than was thought before.

Behe (2006) answers the "God of the Gaps" objection by giving the argument for design in a nutshell. Firstly, "we infer design whenever parts appear arranged to

accomplish a function." Secondly, the strength of the inference is quantitative and depends on the evidence." Thirdly, "aspects of life overpower us with design." Finally, "in the absence of another explanation we must turn to an intelligent agent."

4.6.1 Can ID solve objections to Irreducible Complexity?

The system, not the parts are essential for Behe. The charge would be that every new organism and biological machine would need to be a primary cause. If "some biological improvements by mutation and natural selection - by evolution - is quite compatible with Intelligent Design theory" Behe (2006:228) than the complex starting points such as the "light sensitive spot" for the eye must have been a first cause as well as "the individually acting components would not have had complementary surfaces. So all of the interacting surfaces of all of the components would first have to be adjusted before they could function together" Behe (2006:308) quoting from Behe (2004: 353-370). If a bike cannot become a motorcycle, than is the whole motorcycle a first cause? Behe (2006) finally says that in the absence of another explanation the concept of an intelligent agent must be invoked. Do we really have all the information necessary to make this determination? Is an intelligent agent just one choice?

Smith (2011:175) apparently agrees with Behe and says;

> The only alternative is independent creation, the idea that all these millions of species simply "popped up", but there is no scientific evidence for that at all in the fossil record, living memory, written history, or our daily experience of the world we live in. Rather we see a long and rich fossil record that records the rise and fall of many millions of species over the past four-plus billion years of Earth life.

If the objections to Irreducible Complexity and an intelligent designer cannot be met that the only alternative is evolution and if the objections to evolution cannot be met than the only alternative is creation. ID creates a third choice in that organisms are the result of intelligence and the details are left to the designer.

4.7 ID's link with Creationism

Throughout their writings, Miller and Scott equate creationism with ID. This creates the first objection with ID promoting creationism. Secondly, Miller and Scott

object to a literal interpretation of Genesis. Lastly, Miller and Scott say that the arguments for creationism have been defeated long ago. For these writers this makes ID a non-scientific idea that has, at its roots, a religious dogma

The question becomes does ID agree with the tenets of creationism including a 10,000 year old earth and literal interpretation of Genesis? For ID writers they say repeatedly that these are not necessary for one to become an ID supporter. ID does agree with the tenet of creationism that the process of natural selection is limited to microevolution while macroevolution is rejected.

Collins (2006) dramatically claims that if the tenets of creationism were true than it would lead to the collapse of all the sciences including physics, chemistry, cosmology, geology and biology. Miller (1999) continues this thought and says that YEC requires that we need to confront virtually every field of modern science. This requires that each new scientific discovery needs to be looked at in a creationists way. For Miller evolutions is thoroughly supported by scientific discipline after scientific discipline. For Miller and Collins the creationists claim seems like nonsense with so much evidence to the contrary.

Dembski (2004) explains that ID is about what is preexisting in the universe. You can have intelligence without any creation account at all or a creation in which God hides His creative acts. The fact of intelligence remains. ID, in this way, can be compatible with a YEC belief and a belief in no creation story at all. There is another view for Dembski that instead of looking at life through the creationists glasses of Genesis, you can look at life through the scientific theory of ID that has religious implications.

4.7.1 Can ID solve objections to ID's link with Creationism?

In ID theory they are trying to break from this religious mold by reaching ID's conclusions from "the data itself - not from sacred books or sectarian beliefs" (Behe 2006:193), not necessary from a literal genesis and finally open to the age of the earth being billions of years old. They do agree with some tenets of creationism that there is a creator, natural selection is limited to microevolution and macroevolution is rejected, and the similarities between different species in regards to DNA and their genes are due to a similar plan from the creator. Collins (2006) and Miller (1999)

would agree that a young earth creationist's viewpoint would cause the collapse of science. Would the two ideas of the limits on microevolution and macroevolution and the similarities between different species in regards to DNA and their genes are due to a similar plan from the creator also cause this collapse?

4.8 Scientific objections with Intelligent Design

Lennox (2009:11) commented that ID was an "anti-scientific attitude that is chiefly focused on attacking evolutionary biology." This "anti-scientific attitude" forms the first scientific objection with ID as raised by Scott (2006) that there is not a serious scientific controversy over the factuality of evolution. This objection along with ID's plan to overthrow naturalism and its fear of leading to supernatural as science forms the basis of the scientific objections to ID. Miller (1999) admitted that we cannot directly prove that life began simply by material means, but as the evidence comes in it seems to be the logical conclusion.

Denton (1986) takes issue with these pronouncements and says that they are "simply nonsense". The scientific method is based on repeatability, something that is not possible with origins. Miller (2009:153) says "so far as we know, nature has conducted the experiment just once, and the result was us (plus a few million other species). Science demands repeatability, and that's not possible in this case."

From this argument, comes the charge that evolution from its very definition cannot be wrong for evolutionists. Denton (1986:76:77) quotes Feyerbend (1965:179) who said;

> The stability achieved, the semblance of absolute truth is nothing but the result of an absolute conformism. For how can we possibly test, or improve upon, the truth of a theory if it is built in such a manner that any conceivable event can be described, and explained, in terms of its principles?

These pronouncements are not scientific in that they cannot be proven scientifically and everything can be understood in evolutionary terms, even without any evidence. Johnson (2010:118) counters that;

> Because Darwinists take for granted that "relationship" is equivalent to common ancestry, they assume that the molecular classifications

> confirm the "fact of evolution" by confirming the existence of something which by definition is caused by evolution.

In other words, evolution is proven by definition alone. Johnson (2010:90) inserts into the discussion that “the theory is plausible, especially to a philosophical materialist, but it may nonetheless be false.” Just because by definition it is said to be true, this is not scientific evidence. Woodward (2003:101) reports that Johnson, moving in line with this reasoning, asks;

> Why not consider the possibility that life is what it so evidently seems to be, the product of creative intelligence? Science would not come to an end, because the task would remain of deciphering the languages in which genetic information is communicated, and in general finding out how the whole system works.

Is it possible that the Darwinian theory is plausible, especially to a philosophical materialist, but it may nonetheless be false” according to Johnson (2010:90). Or is the case as Dawkins (1996:XVI-XVII) explains ”I want to persuade the reader, not just that the Darwinian world-view happens to be true, but that it is the only known theory that could, in principle, solve the mystery of our existence.”

4.8.1 Can ID solve these scientific objections?

For evolutionists there is not a serious scientific controversy over the factuality of evolution Scott (2006). This objection along with ID’s plan to overthrow naturalism and its fear of leading to supernatural as science forms the basis of the scientific objections to ID.

Miller (1999) remarks that science cannot tell us if God exists much less what He is like. The ID movement represents a serious scientific controversy for ID proponents. They take issue with the pronouncements in the factuality of evolution and demand the same repeatability that even Miller admits is lacking for the theory of evolution Miller (2009:153). The idea that evolution can be true by definition alone and that "relationship" is equivalent to common ancestry is not conclusive. ID proponents admit that it is “plausible, especially to a philosophical materialist, but it may nonetheless be false” Johnson (2010:90). “Why not consider the possibility that life is what it so evidently seems to be, the product of creative intelligence?”

Woodward (2003:101) Lennox (2009) said that believing that Ford designed the engine could actually increase scientific participation to see how it works.

Behe (2006) asks why the scientific community won't accept design. He answers with four considerations. Firstly, there is an allegiance to science. Secondly, there is a history of antagonism between science and religion going to the scopes trial and before. Thirdly there is the rule that only physical and material causes can be considered. Finally there are the philosophical considerations. The theory of ID is connected with religion and religion and science are two totally different things for scientific naturalists.

4.9 What are the limits and proper use of Science according to Miller and Scott?

Miller (1999:267) shows the value of science by saying that "the ability of science to transcend cultural, political, and even religious differences is part of its genius, part of its value as a way of knowing." Miller (1999:268) continues that "as more than one scientist has said, the truly remarkable thing about the world is that it actually does make sense. The parts fit, the molecules interact, the darn thing works." This order combined with the scientific method is what makes science possible. (Miller 1999:267)

For Scott (2009) the scientific method works by putting its accomplishments in order namely theories as being the most important followed by laws, hypotheses and finally facts. For scientists a fact is just an observation that has been confirmed by experimentation. A hypothesis states the relationships among these facts and asks if-then questions about them. Scott (2009:8) explains that "science is quintessentially an open-ended procedure in which ideas are constantly tested and rejected or modified." She then said that you need a test to prove or disprove your hypothesis. These tests can either be done directly as in testing the boiling point of water, or indirectly as in the temperature of the sun. These theories should, predict other findings, be verifiable through experimentation and provide a working mechanism. They should also use hierarchical reductionism, be falsifiable, and use the scientific method for verification of a scientific theory. Finally as Lennox (2009:32) reports that Michael Ruse (1982) defined science as the natural, the

repeatable and that which is governed by law. In other words, a scientific theory needs to be based on scientific naturalism.

Miller (1999) continues that for science the only answer they can come up with is that evolution took place and made us. This is not 100% provable and would be discarded as more evidence comes in. The past leaves traces and even though no one was there and these traces can be recreated for Miller. Collins (2006) says that according to these criteria ID fails to hold up scientifically with no opportunity for experimental validation and no robust foundation.

Scott (2006:22) shares that "ID advocates complain that their views are rejected out of hand by the scientific establishment, yet they do not play by the normal rules of presenting their views first through scientific conferences and then to peer-reviewed journals and then in textbooks." These steps have not been done for ID to be involved in the scientific debate on origins for the scientific establishment. Scott (2006:20) continues "but the important point is that it shows that nobody is using ID to advance our knowledge about the natural world."

Johnson (2010) says that there are rules and procedures for determining what scientific facts are acceptable. ID tries to work in this system, not concentrating on how or why something was designed, but on the scientifically verifiable results of this designing process.

4.9.1 Are ID and the Scientific Method compatible?

4.9.1.1 Facts

Behe (2006:193) is clear that "the conclusion of Intelligent Design flows naturally from the data itself - not from sacred books or sectarian beliefs." Morris (1994) commented that the facts are the same for evolutionists and ID supporters. You would need to talk on a presupposition or assumption level. These presuppositions and assumptions are what these two theories are based on.

4.9.1.2 Hypothesis

Dembski (2004) says that a major component of ID is to differentiate intentional design from apparent design. Dembski (2004:75) explains this

relationship with ID's hypothesis "Intelligent Design begins by raising the following possibility: Might there be natural systems that cannot be explained entirely in terms of natural causes and that exhibit features characteristic of intelligence?" In other words, Dembski proposes that the focus of ID is to detect intentional design in organisms and structures and to show how design could overthrow naturalism.

Scott (2009) explains that for the hypothesis of Darwinist theory you would ask a question such as, "if living things descended with modification from common ancestors, then we would expect that species that lived in the remote past must be different from species today." The problem then becomes how does one ask if-then questions of a hypothesis that is based on "arbitrary design (we cannot understand the designer's plans)" and "could be consistent with anything." (Miller 2009:65)

4.9.1.3 Laws

Dembski (1999) reiterates that ID attempts to study what is found in the natural world by not abandoning the natural laws found there and see if there is a case to be made for an intelligent cause as opposed to a purely natural one. Dembski continues that the originator of this intelligent cause may be outside of the natural world, but the results of this designing are scientifically explainable.

4.9.1.4 Theories

Dembski (1999:188) would say "Intelligent Design is a scientific theory with theological implications." Dembski and others (Collins 2006, Behe 2006) would say that a concept such as the big bang has theological implications, but it can be studied in a scientific way. Sarkar (2009:291-305) argues that ID is a truly religious theory and that it does not meet the "demarcation criterion between science and non-science. " Dembski (1999) goes on to explain that ID is a way of understanding the actions of a higher being. In this way, it can be the border between science and theology. Dembski (1999:107) claims "it is the empirical delectability of intelligent causes that renders Intelligent Design a fully scientific theory and distinguishes it from the design arguments of philosophers or what has traditionally been called "natural theology." "In other words ID is a true scientific theory and is fully distinguishable from religion

Miller (2009:178) reports that Paul Nelson was struggling in 2004 to find a clear scientific theory of ID. Miller (2009:112) quotes D'Agostino (2006:33) and continues that Phillip Johnson was still struggling in 2006 to find a clear scientific theory of ID "I also don't think that there is really a theory of Intelligent Design at the present time to propose as a comparable alternative to the Darwinian Theory...No product is ready for competition in the educational world."

4.9.1.5 Can ID answer the limits and proper use of Science?

For Scott (2009) the scientific method works by putting its accomplishments in order namely theories as being the most important followed by laws, hypotheses and finally facts. ID is attempting to use these stages in its pursuit of intelligence. ID proponents try and use the explanatory filter as the test of its hypotheses and to stay within the natural laws. The job of "working out a positive theory is the job of the scientific people that we have affiliated with the movement. Some of them are quite convinced that it's a doable, but that's for them to prove" (Miller (2009:112 quoting D'Agostino 2006:33). Scott (2006:22) observation that the normal route of "scientific conferences and then to peer-reviewed journals and then in textbooks" does not seem to have been followed for ID. In fact Scott (2006)noticed that the first use of the phrase "intelligent design" was not in a scientific paper but in a high school text book entitled "Of Panda's and People".

Dembski (1999) makes the comment that "the implications of Intelligent Design are radical in the true sense of this much overused word …The question is rather how we should do science and theology in light of the impending collapse of Enlightenment rationalism and scientific naturalism. These ideologies are on the way out...because they are bankrupt." With this radical new idea, it is easy to see why ID would not be welcomed in mainstream scientific conferences, journals and academic meetings.

4.9.2 Naturalism

Dembski, Miller and Scott present a dichotomy of views in relation to how naturalism fits with a creator God. Dembski (1999:105) says;

> The science we look to, however, needs to be unencumbered by naturalistic philosophy. If we prescribe in advance that science must be limited to strictly natural causes, then science will necessarily be incapable of investigating God's interaction with the world.

On the other hand, Miller (1999:254) argues “there is simply no theological reason to argue that life cannot have a material basis. “ The tenets of ID lead to a theory that simply tries to discover intelligence in complex systems and challenges the hold that Darwinists have over science especially in the area of naturalism.

For evolutionary writers like (Pigliucci 2001) science must not rely on supernatural explanations, but solely on natural explanations. Johnson (2010:26) reports that the National Academy of Sciences commenting on the Supreme Court case of Justice Brennen and Justice Scalia on the validity of ID said “It fails to display the most basic characteristic of science: reliance upon naturalistic explanations. Instead, proponents of "creation-science" hold that the creation of the universe, the earth, living things, and man was accomplished through supernatural means inaccessible to human understanding.” Lennox (2009:32) reports that Michael Ruse (1982) defines science as the natural, the repeatable and that which is governed by law. In other words Ruse restates the position of Justice Brennen and Justice Scalia that science needs to be based on scientific naturalism. This reliance on naturalism has the result that nature should be able to self-assemble (Hewlett and Peters in (Scott 2006)), and form the basis of the scientific method (Miller (2009) and future scientific discoveries such as speciation (Smith 2011:174).

For many theists they would agree with the Kansas board in 2004 that said

> Methodological naturalism effectively converts evolution into an irrefutable ideology that is not secular or neutral. Naturalism is the fundamental tenet of non-theistic religions and belief systems like Secular Humanism, atheism, agnosticism and scientism. [9]

Dembski (1999:100) continues this religious objection by saying;

> Naturalism promises to free humanity from the weight of sin by dissolving the very concept of sin. Sin makes sense so long as an offence against a person has been committed. But we cannot

[9] Kansas Science Standards, Minority Report, p. 6. The Minority report was never formally published. It was placed online by pro-ID forces- http-//www.kansasscience2005.com/

> properly sin against nature... With no possibility of escaping the laws of nature, we cannot violate them.

Miller (2009) says that to defend science from atheism, the definition of science itself must be changed. This will lead to the supernatural and finally to having a theistic ideology as our science.

Intelligent Design strives to be free from these religious battles and emerge as a truly scientific theory. In light of this goal, Dembski (2004) says that natural systems and organisms can exhibit specified complexity, but this is not the same as generating it. Dembski (1999) further explains that this causes circular reasoning. If the definition of science is only naturalistic explanations than that is all that can be considered scientific. Dembski (1999) says this is also true of information. The design element and the origin of the original law are the intelligent cause that ID is looking for.

Miller (2009:197) warns of the dangers of this faith and says "once the supernatural becomes a valid element in scientific inquiry, science will cease to be an empirical search for the truth of the natural world." The supernatural is simply "of or relating to existence outside the natural world" or "attributed to a power that seems to violate or go beyond natural forces." (The American Heritage Dictionary of the English Language 1992) In this sense God cannot be anything but supernatural as He is outside of nature by His very being. So to study God is to study the supernatural by definition. Dembski (1999:105) words it this way "there's an important contrast to keep in mind here. Science, we are told, studies natural causes, whereas to introduce God is to invoke supernatural causes. This is the wrong contrast. The proper contrast is between natural causes on the one hand and intelligent causes on the other." God is the intelligent cause, and He just happens to be an antecedent of nature, and bound by it. ID attempts to study what is found in the natural world by not abandoning the natural laws found there and see if there is a case to be made for an intelligent cause as opposed to a purely natural one. This intelligent cause may also not be in our exact space and time at the origin of this creation. These concepts of space and time are also theoretical and therefore open to scientific scrutiny. One cannot prejudge that such an entity could or could not exist except on purely metaphysical grounds according to Dembski (1999).

Miller (1999:219) writes “in the final analysis, absolute materialism does not triumph because it cannot fully explain the nature of reality.” Dembski is arguing for “something other than matter and energy” and Miller and Scott are arguing for the all-inclusive nature of matter and energy and the rules of naturalism as expressed in the scientific method. Miller stops short of saying that naturalism can explain the entire natural world, as Biblical revelation is claiming.

Johnson (2010:26) reports that the National Academy of Sciences commenting on the Supreme Court case of Justice Brennen and Justice Scalia on the validity of ID said “It fails to display the most basic characteristic of science: reliance upon naturalistic explanations” He continues that;

> Because creationists cannot perform scientific research to establish the reality of supernatural creation - that being by definition impossible - the Academy described their efforts as aimed primarily at discrediting evolutionary theory. The Academy thus defined "science" in such a way that advocates of supernatural creation may neither argue for their own position nor dispute the claims of the scientific establishment.

Lennox (2009:9) leaves us with this challenge “so, is naturalism actually demanded by science? Or is it just conceivable that naturalism is a philosophy that is brought to science, more then something that is entailed by science? Could it even be, dare one ask, more like an expression of faith, akin to religious faith?”

4.9.2.1 Can ID solve the objection to using Naturalism?

Miller (2009) states that scientific naturalism or methodological naturalism does not count as a philosophy, but is a way of doing science, in other words the scientific method. When you attack naturalism, you attack the scientific method itself. Eugenie Scott in 2002, she received the National Science Board’s Public Service Award for “her promotion of public understanding of the importance of science, the scientific method, and science education and the role of evolution in science education.” [10]

Dembski, Miller and Scott present a dichotomy of views in relation to how naturalism fits with a creator God. Dembski (1999:105) says “the science we look to,

however, needs to be unencumbered by naturalistic philosophy. If we prescribe in advance that science must be limited to strictly natural causes, then science will necessarily be incapable of investigating God's interaction with the world." On the other hand, Miller (1999:254) argues "there is simply no theological reason to argue that life cannot have a material basis. " The tenets of ID lead to a theory that simply tries to discover intelligence in complex systems and challenges the hold that Darwinists have over science especially in the area of naturalism.

Lennox (2009:9) leaves us with this challenge "so, is naturalism actually demanded by science? Or is it just conceivable that naturalism is a philosophy that is brought to science, more then something that is entailed by science? Could it even be, dare one ask, more like an expression of faith, akin to religious faith?"

This question lies at the very heart of science and theology. The whole definition of science would need to be changed to accommodate the new ideas of ID. The very nature of God makes studying His interaction with the world outside of naturalism. When ID comes up with a true scientific theory it will be up to the creator of this theory to use the scientific method without naturalism to test this theory. Can the explanatory filter do this now? ID says yes and evolutionists say no.

4.10 What are the limits and proper use of Theology according to Miller and Scott?

Scott (2009) argues that for the general populace religion and creationism are related concepts as are science and evolution. Science is concerned with material explanations while religion is concerned with nonmaterial reality. Scott (2009:19) explains that "the ultimate statement of creationism - that the present universe came about as the result of the action or actions of a divine creator - is thus outside the abilities of science to test."

Miller (1999:174) quoting Hitt (1996:60) says;

> I felt again the warmth of believing that for every inch of infinity there has already been an accounting. Everything has a reason for being where it is…I had felt it before, in childhood, when everything around

[10] http:/ncse.com/news/2002/05/scott-receives-public-service-award-from-national-science-bo-00380. Retrieved 2010-02-04

> me radiated with specific meaning and parental clarity. That, after all, is what creationists feel that evolution has stolen from them.

Denton (1986:66) states;

> Despite the attempt by liberal theology to disguise the point, the fact is that no biblically derived religion can really be compromised with the fundamental assertion of Darwinian Theory. Chance and design are antithetical concepts, and the decline in religious belief can probably be attributed more to the propagation and advocacy by the intellectual and scientific community of the Darwinian version of evolution than to any other single factor.

Morris (1994:27) conyinues;

> Furthermore, evolution is essentially the atheistic explanation for origins, doing away with the need for God. From Darwin to the present day, evolutionists use it to explain how we got here without a Creator, and, therefore, to justify a lifestyle without accountability to God.

These religious sentiments are at the heart of the religious objections to evolution. The science, for evolutionists, is telling one story and the emotional commitment to a literal Genesis is telling another story. Scott (2009) talks of two reasons to reject evolution. The first is that common descent conflicts with biblical special creation. Miller (1999:233) puts it this way “there, in a nutshell, is the problem. If evolution really did take place, then God must have rigged everything. Otherwise, how could He have been sure that evolution would have produced us? And if He didn't, isn't our species, Homo Sapiens, nothing more than, as Gould (1989:291) put it, a "tiny twig on an improbable branch of a contingent limb on a fortunate tree?" Surely we could not be both the products of evolution and the apple of God's eye?” The second is that if the earth and all life was created in six literal days that this would contradict a scientific picture of the earth unfolding over billions of years. For ID to break free from its religious beginnings, the movement needs to strip away the religious sentiments and concentrate on the true roles of science and religion.

Miller (1999:169) remarks on these roles as he quotes from Teaching About Evolution and the Nature of Science (1988:Preface)

> At the root of the apparent conflict between some religions and evolution is a misunderstanding of the critical difference between

> religious and scientific ways of knowing. Religions and science answer different questions about the world. Whether there is a purpose to the universe or a purpose for human existence are not questions for science. Religious and scientific ways of knowing have played, and will continue to play, significant roles in human history.

Johnson (2010:21) starts a true view of ID by saying “the concept of creation in itself does not imply opposition to evolution, if evolution means only a gradual process by which one kind of living creature changes into something different. A Creator might well have employed such a gradual process as a means of creation. "Evolution" contradicts "creation" only when it is explicitly or tacitly defined as fully naturalistic evolution - meaning evolution that is not directed by any purposeful intelligence.” Johnson (2010:22) continues “Similarly, "creation" contradicts evolution only when it means sudden creation, rather than creation by progressive development.” This “purposeful intelligence” is the starting point for ID and not the emotional commitment to Genesis or creationism. ID is completely compatible with a literal Genesis and creationism, but its focus is on the scientifically verifiable results of intelligence.

4.10.1 Can ID solve Miller and Scott’s limits and use of Theology?

Woodward (2003:147) talked of Michael Ruse who said.

> Evolution, akin to religion, involves making certain a priori or metaphysical assumptions, which at some level cannot be proven empirically… And I think that the way to deal with creationism, but the way to deal with evolution also, is to not deny these facts, but to recognize them, and to see where we can go as we move on from there.

The way for ID to move forward is to recognize its “metaphysical assumptions“ such as its stance on naturalism. ID needs to recognize that its starting point of invoking a designer “cannot be proven empirically” as Dawkins (1996:200) says;

> To explain the origin of the DNA/protein machine by invoking a supernatural Designer is to explain precisely nothing, for it leaves unexplained the origin of the designer. You have to say something like 'God was always there', and if you allow yourself that kind of lazy way out, you might as well just say 'DNA was always there', or 'Life was always there', and be done with it.

The ID movement owes its roots to creationism and a literal Genesis and the way to move forward is “to not deny these facts, but to recognize them, and to see where we can go as we move on from there”.

4.10 Concluding remarks

The study revealed that Miller and Scott maintain that you can reconcile evolution and Christian faith. A conspiracy was not found to destroy religion or to promote atheism. Miller and Scott believe that it is not possible to take Genesis literally including the age of the earth and a literal six-day creation and to keep the integrity of science. The idea of an intelligent designer is not needed as the theory of evolution is unquestionably true and is borne out by science as the supreme way of knowing. Miller and Scott do not mean to attack religion, but religion does not belong in a science classroom according to these two authors. There also was not found to be a conspiracy to keep ID out of science and to keep the status quo even though the evidence pointed another way as this would be “completely antithetical to the restless mind-set of the profession.” Collins (2006:58) These writers present evolution as making major changes in organisms in small steps using the process of replication, variation and selection. They can move, therefore, from simple to complex organisms as the ages wore on.

The Intelligent Design advocates present Intelligent Design as a way of detecting design in the natural world and a way of dethroning naturalism as the only way of doing science and thus attacking Darwinism. They contend that you do not need to know the motives, plan or identity of the designer. ID claims that their motives are to detect these intelligent causes, challenge Darwinism, and understand divine action.

Miller and Scott present that for Intelligent Design to be a valid part of science they must firstly ascribe to an old earth position. This requirement fits well with ID as they are compatible with a young-earth or an old-earth position. As Behe (2006) clearly states that the ideas of a young earth and ID are not necessarily linked. In this view, one could see an object, conclude design, and not know when it was designed. This objection of Miller and Scott seem to have been met from ID theory.

Secondly ID must admit that natural selection is testable and more than enough to account for the diversity of life and small steps over time can lead to the great variety that we see today. They must see that the fossil and genetic evidence corroborate each other and that this demolishes the argument for a literal genesis account of life on this planet. ID theory must see that the capacity for life is built into matter, ending the need for an interventionist designer. ID theory must acknowledge that the mechanism of natural selection is not only for microevolution, but that it is easily extracted to macroevolution as well. The border, scientifically, becomes moot as the line between the two cannot be separated. The "kind" barrier in the Bible separating microevolution from macroevolution is, thus, not a valid scientific point of view.

This objection forms the heart and soul of the ID movement. They replace natural selection with a designer for major changes while allowing for natural selection for smaller changes within organisms. ID theory would say that natural selection is not testable and not enough to account for the diversity, complexity and perfection that is seen in life. For ID theorist's macroevolution does not happen and is not observed. For ID what is needed is an actual scientific theory about macroevolution and not an arbitrary principal. (Dembski 1999:113, Johnson 2010:93)

Thirdly ID must see that the apparent family trees that are so evident in the fossil record and in phylogenic analysis and which move in a straight line from simple to complex organisms must be addressed by Intelligent Design advocates. These family trees cannot be answered by the theory of Intelligent Design or by creationism and a literal Genesis.

For some ID supporters family trees are "fairly convincing". (Michael Behe 2006) For other ID supporters these family trees are an illusion. Johnson states that common ancestry is not observed and simply shows that apes and humans are more similar than other animals and this does not equal common ancestry. This does not tell you where major categories of trees, birds and humans come from in the first place. For genetic hierarchies, one cannot know if this is because of common design or evolution.

This objection from natural selection and the objection from apparent family trees cannot be met from ID supporters as their thesis is that there is intelligence and that is the root cause of the major groups of plants and animals and forms the basis for the similarity between different groups within the plant and animal kingdoms.

Fourthly, the ID must account for the imperfections that are all around us from the backbone to pseudo genes and asks, “what is the final cause for devastating natural events like the bubonic plague”. Miller (1999:185) quoting Hull (1991:485-486) expresses this sentiment as “The God of the Galapagos is careless, wasteful, indifferent, almost diabolical. He is certainly not the sort of God to whom anyone would be inclined to pray. “

ID answers this objection with the very heart of the nature of a designer. He is free to design as he wishes. So for ID the designer’s motivation, plan or lack of a plan is not the issue. If one does not like what they find in the natural world, it is not scientific to reject it solely for that reason. The fact of design remains. This objection cannot be met as this view of a designer is inconsistent with ID theory.

For Miller and Scott the concepts of Complex Specified Information and Irreducible Complexity have been soundly defeated. In determining if an object is designed, ID relies on this object being contingent, complex and specified. These three concepts together equal design for ID theory. Dembski claims that his explanatory filter can detect design. This remains to be seen in controlled experiments and results that are published in peer-reviewed journals. This has not been done to date and thus has not met the objection from Miller and Scott.

The main goal of ID is to show that nature cannot self-assemble by itself; it needs the input of intelligence. The origin of the DNA information and the minimum machinery is the key issue for ID. Where did this come from? Dawkins (1996:226) says we cannot just postulate this intelligence, but says later that it requires a miracle-like event. Going against the objection of Dawkins, ID strives to postulate this intelligence and then to study the effects of this intelligence. If one lived on an island and saw that year after year during a certain amount of time strong winds pummeled the island. They can study these effects even though they do not know where these hurricanes are coming from. If the objections to Irreducible Complexity

and an intelligent designer cannot be met that the only alternative is evolution and if the objections to evolution cannot be met than the only alternative is creation. ID creates a third choice in that organisms are the result of intelligence and the details are left to the designer.

For Miller and Scott the concept of Irreducible Complexity is also soundly defeated as parts from other systems have been shown to be used in the making of complex systems. For ID they would say that the SYSTEM is what is important not the parts. Behe (2006:260) clearly wrote;

> Yet there is no reason that individual components of an irreducibly complex system could not be used for separate roles, or multiple separate roles, and I never wrote that they couldn't.

Behe (2006:39) wrote “the removal of any one of the parts causes the system to effectively cease functioning.” The system is the key for Behe and that is what is irreducible. If one has a tablet pc of a certain model than this model needs all of its parts to work on this exact unit. The screen, speakers, memory, and android operating system all have to all be in place. If one removes the screen from this exact system than the system will not work. If one removes the android operating system, than this exact system will not work. It needs all of its parts. It does not matter if some of these parts came from another version of this system or from other tablet pc models. THIS system will not work without all of its parts. How did this exact system come to be? If one allows a light sensitive spot that evolved into the screen, than where did that light sensitive spot come from since it is very complex in and of itself? How did this newly evolved screen attach itself to this unit since the chassis is of an exact size and position and the fasteners have to be put on correctly and the seals all have to be unbroken? Where did the information for the android operating system come from? The parts need to find each other and the surfaces need to be complimentary with the screws all in the right place and using the correct heads. Behe (2006:228,308) said that the complex starting points such as the “light sensitive spot… must have been a first cause as well as “the individually acting components would not have had complementary surfaces. So all of the interacting surfaces of all of the components would first have to be adjusted before they could function together”. So each part of my tablet pc needs to be the right size and shape to work together. I cannot put a 7 inch screen into a 10.1 inch chassis and so on.

Would the whole system have to evolve as a coherent system? If no natural scenario can be found that ID turns to intelligence. This objection does not seem to have been answered by Miller or Scott and the mystery remains.

Miller and Scott would continue to say that the ID movement is still entrenched with creationism and can rightly be called “crypto-creationist”. They have just replaced the idea of a creator with intelligent design. This leads to the assumption that ID is a veiled religious idea that has no place in science. ID has been very clear that ID is about observable data and not about sacred books or dogma. The admit that creationism could fit in with ID, but so could panspermia. The scientific discovery of design is the key for ID, not the religious base. This connection seems persistent in Miller and Scott’s writings as they unequivocally connect ID with a literal Genesis and with creationism. This connection needs to be more forcefully disconnected and allow ID to break the shackles of entanglement with creationism. The ID advocates seem to have met the objection of Miller and Scott at least in theory. Can this attempt translate to a real scientific theory?

Scientifically The ID community would have to acknowledge some sort of evolution as there is no scientific controversy of this subject for Miller and Scott. They are also deeply concerned about the overthrow of naturalism and using the supernatural as science. The ID hypothesis would have to include one that is compatible with naturalism and follows the scientific method. This objection proves formidable for ID theory. They balk at the suggestion that science needs naturalism and say that ““the science we look to, however, needs to be unencumbered by naturalistic philosophy.” (Dembski 1999:105) and asks the question “is naturalism actually demanded by science? Or is it just conceivable that naturalism is a philosophy that is brought to science?” Lennox (2009:9) In either case ID is compatible with some improvements using evolution Behe (2006:228) as long as it is limited to microevolution. The questions remains if science can be done without naturalism and still use the scientific method by studying the effects of intelligence without knowing the plan or identity of the designer.

For Miller and Scott ID does not seem to follow the normal route of discovering facts, proposing a hypothesis to explain these facts, ask if-then questions emerging from this hypothesis, and then using this confirmed hypothesis

in a theory explaining both the facts and the hypothesis. This is how the theory of evolution has evolved and taken hold in the scientific community. For Miller and Scott ID starts with revelation and then facts are found to support the theory of ID.

Behe (2006:193) is clear that “the conclusion of Intelligent Design flows naturally from the data itself - not from sacred books or sectarian beliefs.” Dembski (2004:75) explains this relationship with ID’s hypothesis “Intelligent Design begins by raising the following possibility: Might there be natural systems that cannot be explained entirely in terms of natural causes and that exhibit features characteristic of intelligence?” In other words, Dembski proposes that the focus of ID is to detect intentional design in organisms and structures and to show how design could overthrow naturalism. Dembski (2004) proposes that if something is designed that it is contingent, complex and specified. Dembski says that we are looking for systems that are complex, not based on chance and have a specific function. These elements can be scientifically studied and asked if-then questions about. ID attempts to study what is found in the natural world by not abandoning the natural laws found there and see if there is a case to be made for an intelligent cause as opposed to a purely natural one. Miller (2009:65) laments that a designer does not have to “confirm a set of putative evolutionary relationships. ID, therefore, cannot predict such patterns, and cannot even be tested, since arbitrary design (we cannot understand the designer's plans) could be consistent with anything.” Miller goes on to say that a scientific theory needs to be based on scientific naturalism, which ID is not. Because of these deficiencies, ID can be rejected as a scientific theory. Miller (2009:112) quotes D'Agostino (2006:33) and continues that Phillip Johnson was still struggling in 2006 to find a clear scientific theory of ID “I also don't think that there is really a theory of Intelligent Design at the present time to propose as a comparable alternative to the Darwinian theory, which is, whatever errors it may contain, a fully worked out scheme. There is no Intelligent Design theory that's comparable. Working out a positive theory is the job of the scientific people that we have affiliated with the movement. Some of them are quite convinced that it's a doable, but that's for them to prove...No product is ready for competition in the educational world.”

The theory of ID is said to have two components "Irreducible Complexity" and "Complex Specified Information". Scott (2006) the theory has a detection device in

the explanatory filter. This theory has “theological implications”, Dembski (1999:188) and could be said to be a theory of information Dembski (2009:1-10). ID seems to have followed all of the steps for a scientific theory except the last stage, that of coming up with a workable theory.

For Scott (2006:22) shares that “ID advocates complain that their views are rejected out of hand by the scientific establishment, yet they do not play by the normal rules of presenting their views first through scientific conferences and then to peer-reviewed journals and then in textbooks.” In fact Scott (2006) noticed that the first use of the phrase “intelligent design” was not in a scientific paper but in a high school text book entitled “Of Panda’s and People”. This circumventing of the scientific process puts ID at the fringes of science and leads them to not be taken seriously.

This study has shown that the major obstacles for Intelligent Design becoming supportively involved in natural science debates on the origin of life are intelligent design’s connection with a literal Genesis and misconceptions about the role of a designer and what this means to the scientific worldview. The concern over a literal Genesis is answered time and again by ID proponents as they move to a purely scientific approach that still allows for a designer. Their stance runs the risk of angering biblical literalists, but opens up ID to a broader range of potential advocates. ID is trying to bring in the scientific community into this range.

The role, identity and purpose of a designer is the final stumbling block for the acceptance of ID. The major objections from Miller and Scott seem to be traceable to these misconceptions. A designer could take a moment or billions of years and thus meet the objections of Miller and Scott. The wonderful properties of DNA could account for microevolution. This could also account for macroevolution and still allow for a designer. As Dawkins contemplates “maybe, it is argued, the Creator does not control the day-to day succession of evolutionary events; maybe he did not frame the tiger and the lamb, maybe he did not make a tree, but he did set up the original machinery of replication and replicator power, the original machinery of DNA and protein that made cumulative selection, and hence all of evolution, possible.” Dawkins (1996:99-200) For Dawkins this is not possible, for ID is the heart of their argument. The problems with natural selection being extractable to macroevolution

and that small steps over time can lead to more and more complexity are problems that ID cannot meet. They believe that this eliminates the need for a designer and this is the central message they are trying to say. The question becomes, “can one still do science without this need for macroevolution?”

Smith (2011:175) makes the bold claim “the fact that the fossil and genetic evidence corroborate one another - even though they were developed centuries apart and for different reasons - is compelling support for a Darwinian explanation of the diversity of life today and in the past. To dismantle evolutionary theory today, deniers of evolution are going to have to dismantle molecular biology as well as the study of ancient life in the fossil record. That is a tall order.” The evidence from the fossil record and genetics become unclear if natural selection or design is responsible. Does relationship equal ancestry? The contention is that one cannot tell simply from the fossil record as these organisms cannot tell us where they came from. A designer could hide his works or leave them open as some organisms are more like each other. Both sides would agree that the capacity for life is built into matter. Does this end the need for a designer, or did a designer start this process?

The family trees that are apparent for Miller and fantasy for Johnson are ones that still need to be studied. Why does one not find a million-year-old poodle? Why does one not find all animals in all levels of the fossil record? Ancestry may not equal similarities in function, but the fossil record still needs an answer. Where did the major categories of birds, trees and humans come from? Did the designer work in stages and not “write down” these stages?

The idea of imperfections and the final cause of anything on this planet go to the heart of a designer. He does as he wishes. The designer can be kind or cruel, competent or incompetent, but the fact of design remains. The scientific method may not work with the idea of a designer. His works may not be visible in the natural world. He might not have left traces behind. The idea is that the scientific community has to stop putting on the designer how they think science or the design process should be and possibly study what is actually there.

If the idea of a designer if applied to the Christian creator than we have the picture of the Hebrew and Christian God creating the world without any interference

from anyone, but the exact method is lost to us. This creator God is thus seen as a spiritual being that is self-sufficient, existing before the creation of the universe, not bound by physical laws and sees all in His creation. Dawkins (1996:200) challenges that “by invoking a supernatural Designer is to explain precisely nothing, for it leaves unexplained the origin of the designer…You have to say something like 'God was always there', and if you allow yourself that kind of lazy way out, you might as well just say 'DNA was always there', or 'Life was always there', and be done with it.” The problem, however, is that this is what the Biblical revelation is claiming. God was, indeed, always there. This is not the “lazy way out” as Dawkins says, but simply the declaration of Christian and Hebrew scriptures. This creator is crediting with creating the heavens and the earth, Separation of light from darkness, Separation of the water from the sky, the land and the sea, vegetation, sun moon and stars, water creatures and birds, livestock and wild animals and finally man in the forms of male and female. Matthew Henry’s Commentary adds “that man was made last of all the creatures, that it might not be suspected that he had been, any way, a helper to God in the creation of the world: that question must be for ever humbling and mortifying to him.” Romans 9:20 states “but who are you, O man, to talk back to God? Shall what is formed say to him who formed it, 'Why did you make me like this?' “We cannot understand or control this creator any more than we can talk back to Him.

The Biblical teachings are that God created the world by His word, power, wisdom and understanding and His will alone. He did this using the three persons of the Godhead or trinity. The exact method is lost, but one can tell from Biblical texts that He did this by not using what is present on the earth today and not done in conventional time. These concepts are not scientifically verifiable, but could, nonetheless, be true. The motives of God are his glory and our giving Him praise and worship. These motives stand in stark contrast to the creatures demand for happiness (Collins 2006:43 reporting on Lewis (1962), protecting God’s self-respect (Dembski 2004) and understandable motives (Miller 1994:29-30). The absolute freedom and power of the creator would lead one to conclude that He can’t be studied at all. His creative acts are His and His alone. In fact the Bible says, “now faith is being sure of what we hope for and certain of what we do not see.” (Hebrews 11:1) and “we live by faith, not by sight.” (2 Corinthians 5:7). These concepts of certainly do not fit with the scientific method. They start with the theory of God

creating and we accept this by faith. Science is by “sight” not by ”faith” and starts with facts and not a theory. For the evolutionist writers of Smith and Scott the revelation of Christian and Hebrew scriptures and the faith that is involved would remove these concepts from the scientific arena altogether. Evolution is based on processes already in motion. The concept of a creator posits an explanation for this beginning. The ISBE states “creation is certainly not disproved by evolution, which does not explain the origin of the homogeneous stuff itself, and does not account for the beginning of motion within it.” The origin of matter, DNA and its replicating mechanism can be attributed to God or can be just said to be a part of the natural world.

Miller and Scott seem earnest in their protection of science and the scientific method. They regard ID as a threat to this method as it introduces an entity that is not bound by the scientific method and proposes a beginning not verifiable by science. This entity is outside of naturalism and thus outside the scientific method.

ID proponents admit that evolutionary theory is “plausible, especially to a philosophical materialist, but it may nonetheless be false”. Johnson (2010:90) asks simply “why not consider the possibility that life is what it so evidently seems to be, the product of creative intelligence?” Woodward (2003:101). The goal of science would become to discover how things work as the results of intelligence. Miller (1999:268) noted that “as more than one scientist has said, the truly remarkable thing about the world is that it actually does make sense. The parts fit, the molecules interact, the darn thing works.” Is this best explained by natural means or through the work of intelligence?

ID is shown, therefore, to have difficulty meeting the objections of Miller and Scott. Can ID be done within the confines of naturalism? Will science allow studying the effects of a designer using naturalism without explaining the plan or identity of the designer? Can ID find a way to follow the rules of science and still be accepted by science? This needs to be the focus. To come up with a workable, scientific theory of ID that is acceptable to modern-day science. If ID cannot find a way to do this, then they will be forever regulated to the realm of philosophy and not science. A revolution may be needed to change science to allow the role of a designer into science.

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