GUSTAVUS ADOLPHUS COLLEGE

RECONCILING FAITH AND SCIENCE
AN EVOLUTIONARY APPROACH

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BY

KARA MARIE YETTER

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Chapter 1 The Enduring Conflict

> Let me summarize my views on what modern evolutionary biology tells us loud and clear -- and these are basically Darwin's views. There are no gods, no purposes, and no goal-directed forces of any kind. There is no life after death. When I die, I am absolutely certain that I am going to be dead. That's the end of me. There is no ultimate foundation for ethics, no ultimate meaning in life, and no free will for humans, either. What an unintelligible idea.
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> -William B. Provine, 1994. [1]

Over the last century, science and religion have been locked in conflict that appears to be boundless. The issue has many different angles but the underlying theme that seems to be the basis of the problems between science and the Christian faith is the theory of evolution. Many people think that the conflict between science and religion is no longer a major issue; they may agree that radical creationist groups still exist but these people are a small minority of the Christian population. They often use Pope John Paul II's statement that, "[Evolution] is more than a hypothesis" [2] as an example of how religious groups are becoming accepting of evolution. But this apparent harmony between evolution and Christianity is only a façade; one look at the opinions of some scientists like William B. Provine should motivate Christians to reevaluate the state of the debate. Richard Dawkins is another one of the frontrunners in the fight against creationists and he has been known to speak out strongly against religion. He once

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[1] William B. Provine, "Darwinism: Science or Naturalistic Philosophy?" (Volume 16:1, April 30, 1994), http://www.arn.org/docs/orpages/or161/161main.htm. William B. Provine is a professor of Evolutionary Biology at Cornell University and a vocal atheist, this comment was taken from a debate with Philip Johnson who is a major proponent in the Intelligent Design movement.

[2] Pope John Paul II, "Truth cannot contradict truth," Address to the Pontifical Academy of Sciences (October 22, 1996), http://www.newadvent.org/library/docs_jp02tc.htm.

declared that religion is like the smallpox virus: "one of the world's greatest evils."[3] The sociobiologist E.O. Wilson is one other scientist that is well known for his antagonistic views; he openly declares that it was Darwinian evolution that caused him to abandon his upbringing in the fundamentalist Baptist theology. Once he became acquainted with evolutionary theory in college he embraced a materialistic view of the universe and became "liberated" from the constraints of Baptist theology. Wilson was unable to reconcile the difference between Darwinian theory and the biblical claims dealing with the origins of life. He felt that by ignoring evolution the Baptist church was ignoring the most important revelation of all.[4] Scientists like Provine, Dawkins, and Wilson speak out violently against religious faith while preaching the reliability of science and the theory of evolution. Their devotion to science is so strong that they actually look to science as the answer to all questions, and it becomes somewhat "spiritual" as Dawkins shows in his book *Unweaving the Rainbow.*[5] These strong atheistic opinions of people like Dawkins, Provine, and Wilson that causes many creationists to fear evolutionary theory.

In retaliation for these attacks on their faith, many Christian creationist movements have fought back in hopes of discrediting evolution and the anti-religious sentiments it seems to bring with it. I have observed, however, that while movements like creation science and intelligent design (ID) begin with the intent of strengthening the Christian faith, they often do the exact opposite; science is often compromised in order to fit it within the narrow scope of theology. By using faulty scientific evidence, creationists actually enhance contradictions between faith and science, causing more problems than they solve.[6]

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[3] Richard Dawkins, "Is Science a Religion?"(Accessed January 26, 2006), http://www.icr.org/humnaist/articles/dawkins.html.

[4] John Haught, *God After Darwin: a theology of Evolution,* (Boulder, CO: Westview Press, 2000), 8.

[5] Laura Sheahen, "The Problem with God: Interview with Richard Dawkins," (October 2005), http://beliefnet.com/story/178/story_17889.html.

[6] See Chapter 2 for information on creation science and intelligent design.

The word "evolution" has gained a negative connotation in religious circles, largely due to the outspoken individuals who disregard the value of religion, such as Provine, Dawkins, and Wilson. The impact of these individuals is reflected in polls that reveal striking statistics about the low number of believers among top scientists.[7] The opinions of people like Provine and Dawkins have caused fear among many Christians, giving rise to a passionate opposition to evolutionary theory. Even though anti-evolutionists comprise a wide spectrum of positions on the issue, they are often lumped together under the common title "creationist." Even though not all anti-evolutionists accept the title "creationist," for clarity in this paper I will refer to all people who believe that evolution contradicts their faith as "creationists" and people who do not see evolution as contradicting their faith will be simply called "evolutionists." To account for the differences in religious beliefs among evolutionists, Christians who believe in evolution will be called "Christian evolutionists" while evolutionists possessing agnostic or atheist beliefs will be called more specifically "agnostic/atheist evolutionists." These terms should account for most people in the conflict, but they cannot account for everyone.

Many Christians have developed a bad reputation among scientists due to the radical creationist opposition to ideas associated with evolution. Through my own personal experience as well as in my study of the controversy I have observed that Christians often associate the term "evolution" with atheism. This word causes many people to instantly become skeptical of, or to downright oppose, anything that seems to support evolution. This is not surprising when considering the bold statements of atheist evolutionists like Dawkins who declared, "Darwin made it possible to be an intellectually fulfilled atheist."[8] Many Christians associate evolution with atheism automatically, unknowingly shutting their minds to the evidence proposed

[7] See figure 1.
[8] Richard Dawkins, *The Blind Watchmaker (New York: W.W. Norton & Company, Inc., 1996), 6.*

regarding evolution. Instead, they accept only creationist views of the origins of life, regardless of the amount of evidence that is presented supporting evolution. Scientists have become frustrated with the attitudes of many creationists and as a result, scientists now tend to brush creationist arguments off to the side as fundamentalist antics rather than considering the questions raised. In the end, both sides of the argument are reacting to criticisms in similar ways. Everybody talks, but few actually listen.

The evidence of this battle is widespread in the United States and can be observed almost anywhere if one takes the time to look; discussion dealing with the conflict is raised anywhere from high profile court cases to casual conversation between friends. The Dover, PA case in 2005 over teaching Intelligent Design (ID) in the schools[9] and the very recent controversy in California over a "Philosophy of Design" course proposed to be taught at Frazier Mountain High School[10] are just two of many examples where havoc has been raised over the issue of evolution and faith. Many schools across the country are contemplating the idea of "equal time"[11] spent on evolution and alternative creationist theories, just as in Dover and California.[12]

Considering the heat generated by the recent Dover court case and the push for "equal time" in school systems around the country, it may seem as if evolution and the Christian faith are completely at odds with each other; but this does not have to be the case. Many denominations have made steps towards accepting evolution into the scope of their theology (i.e.

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[9] Amy Wordan, "First day for trial on 'intelligent design,'" (September 27, 2005), http://www.philly.com. See chapter 2 for more information about ID.

[10] Patric Hedlund, *The Mountain Enterprise (January 2006),* http://www.mountainenterprise.com/.

[11] "Equal time" refers to making it mandatory for schools to spend equal time examining different theories about the origins of life, usually, but not always referring to intelligent design, rather than focusing entirely on Evolution.

[12] Rich Ehisen, "Evolution debate nothing new for states,"*State Net Capitol Journal* (Volume XIII, No. 3226, September 2005), http://web.lexis-nexis.com. According to Ehisen at least 10 states in the past year have considered incorporating ID into their school science curriculum.

Roman Catholicism),[13] but even this can be deceiving. A Gallup poll conducted in 2001 asked Americans where they stood on the creation vs. evolution debate; nearly half of Americans, 45%, felt that God created humans in their present form, while 37% felt evolution happened but God guided the process; only 12% believed that evolution happened but God had no part in the process, while the remaining 6% of subjects had no opinion.[14] This data reflects the opinions of the public, rather than the official positions of Christian denominations. When observing the views on creation and evolution of individuals within particular denominations there are differences of opinion within each denomination. Differences can be observed even within denominations that have taken official positions on the issue, like Roman Catholics, or have created social statements, like the Evangelical Lutheran Church in America (ELCA) and the Episcopalians.[15] This evidence reveals that even though many churches may have established positions on the debate, Americans do not necessarily follow the position of their church. Therein lays the difficulty; if the problem could be strictly confined within denominational lines resulting from differing theologies the conflict would be much easier to resolve. But the confusion in the general public regarding the issue seems to show that pro-evolutionist and anti-evolutionist sympathies are difficult to predict and cannot be attributed to certain denominations. These varied results suggest that even though denominations may officially support evolutionary ideas within the scope of their theology, conflict somehow still remains.

The battle rages between expert creationists and evolutionists, leaving many lay people in limbo, unsure whom to believe. The amount of literature available in book stores and on the Internet is overwhelming. Nobody truly understands the magnitude of the problem of false

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[13] Pope John Paul II, "Truth cannot contradict truth."

[14] Deborah Jordan Brooks, *Creation-Evolution Poll,* Gallup News Service (March 5, 2001), http://www.asa3.org/archive/asa/200103/0031.html.

[15] Larry Witham, *Where Darwin Meets the Bible: Creationists and Evolutionists in America* (Oxford: Oxford University Press, 2002), 274.

information on the Internet, or in printed materials because not all information goes through a review process like scientific journals. The confused public is left to sort through the good information and junk. How are people to try to figure out the truth if they do not know where to get accurate information? Should they trust the scientists, with their knowledge and expertise in scientific studies? Do they continue to believe in what they think their faith claims as true? Or the question many people ponder: is there a way in which the two sides of the argument can be reconciled making it unnecessary to choose sides? Through informal observations of self-identified Christians I have noticed four relatively clear positions: the first group contains people who accept the facts of evolution and begin to doubt their faith as a result, the second group is made of people who do not feel evolution has enough evidence to overrule the claims of their faith and look towards creationist alternatives to evolution, the third group believes that evolution and Christianity are compatible but they cannot determine how, and lastly there are those who choose to have no opinion on the subject.

After over a century of conflict, little has happened to bring about a solid reconciliation between evolution and belief in creation. What makes the conflict even more frustrating is that there are some workable approaches presented by churches[16] and Christian evolutionists[17] that have potential to reconcile the conflict, but without evident support from the churches, many people are unaware of them. The hype caused by the publicity of popular ideas like ID and Scientific Creationism often causes these reconciliation theories to fade into the background. The frustrating part is that the conflict as a whole is unnecessary; if a creator God does exist as Christians claim, faith and science should be compatible and not at odds with each other. But

[16] The Catholic and Episcopalian churches have presented workable approaches to the issue, see chapter 3.
[17] People like John Haught and John Polkinghorne have developed promising theories that may help bring about a working relationship between science and religion, see chapter 4.

ever since the argument was introduced in Darwin's *Origin of a Species,* the creation/evolution debate has been running in a circular path.

In this thesis, I plan to show that the conflict between creation and evolution is much more widespread than many people realize. Science and technology is continually evolving and religious faith plays a very important role in human spirituality. Both are here to stay and as a result, the conflict will continue to evolve. But if creationists and Christian evolutionists agree to enter into dialogue they can learn from each other and there is a possibility that in time they can create a working relationship. I feel that the conflict is creating unnecessary tension within Christianity and reconciliation is vital to the future survival of the faith. There are many steps on the path to reconciliation, but if people take the time to consider the problem, many of the petty issues can be resolved. I hope to show that by creating healthy dialogue between evolutionary science and Christian beliefs, Christians may begin to realize that evolution does not have to hinder the Christian faith; in all actuality, the theory of evolution can allow people to see God's role in the world from a new perspective, enhancing one's admiration for the complexity of the earth and ultimately strengthening the Christian faith as a whole.

Chapter 2 Major Events and Movements in the History of the Creation vs. Evolution

Introduction

Since the beginning of the conflict in 1859, many creationist attempts have been made at offering alternatives to evolutionary theory, though none of them have offered a solution that is compatible with both science and religion. Out of all the events in the history of the debate, four stand out as significant today: the publication of the *Origin of Species*, the Scopes trial, Henry Morris' creation science, and the Intelligent Design (ID) movement. Each of these events represents a period of renewed conflict between science and Christian theology.

While many different creationist theories have come and gone throughout the debate, ID and creation science stand out as the most influential and still exist today. Each theory appears to offer a unique creationist view on the origins of the universe and God's role in creation; but closer study makes it apparent that these two theories are much more closely related than one may realize. Through their own evaluation of scientific evidence and the claims of Christian theology, they both argue against many of the claims of modern science. Both theories strongly oppose the idea presented by atheist evolutionists that evolution happens completely by chance. As a result, they have attempted to create a new scientific discipline that includes the supernatural in scientific study and does not dwell on ideas such as blind chance.

Darwin disrupts the world of science and religion

Evolutionary theory was born in 1859 when Charles Darwin introduced his breakthrough work, *The Origin of Species.* Darwin, who was raised as a Christian and originally intended to enter the clergy, was hesitant to publish his theory. He knew that his theory of natural selection would completely contradict the widely accepted approach to science during that time and would

most likely result in controversy. However, a theory as insightful as his is not going to remain undiscovered for long.

Up until Darwin, the world of science relied heavily on the Bible to answer scientific questions. The dominating approach to explaining the origins of the earth and all its inhabitants was the theory of natural theology, presented by the theologian William Paley. Natural theology is based on the idea that nature affirms the existence of God and the creation story in Genesis; Paley used his "watchmaker analogy" to explain why each organism appears to fit perfectly in a particular environment and used this as proof of a designer or as he puts it, a "watchmaker."[18] Many well-known scientists agreed with Paley's theory, including the famous geologist Louis Agassiz, feeling that the theory's use of a literal interpretation of Genesis as well as its observations of the complexities found in nature offered a good explanation for the complexity of the visible world while incorporating religious belief into the theory.[19] This explanation was easy for many to accept because it allowed religion to fulfill the role it has had since the times of the ancient Greeks: an explanation for things we cannot explain ourselves.

To present a new scientific theory in a society dominated by ideas of natural theology and religious based science took courage; Darwin knew that by presenting his theory of natural selection he would be challenging the widely accepted scientific explanations of creation and the role of religion in general. He wrote to his colleague, Joseph Hooker, expressing his concerns;

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[18] William Paley, 2005. *Natural Theology* (Landisville, PE: Coachwhip Publications, 2005).

[19] Louis Agassiz was a brilliant paleontologist observed that the most simple organisms are found at the bottom of the geologic record while the most developed organisms are found near the top. He felt this pointed to Joseph Cuvier's catastrophism theory that says that "the Earth had been periodically wracked by global catastrophes, after each of which new species of animals and plants had appeared." The biblical flood was believed to be the last of these global catastrophes but Agassiz insisted that glaciers are actually responsible for the last great catastrophe. Even though Darwin thought the work of Agassiz was synonymous with his own theory of evolution, Agassiz continued to reject Darwinian ideas for the rest of his life. For more information see, "Louis Agassiz, (1807-1873)," http://www.ucmp.berkeley.edu/history/agassiz.html.

Darwin lamented that publishing his theory would be akin to "confessing a murder."[20] Niles Eldridge commented on Darwin's fears saying that "[Darwin] was worried about social disorder, he saw the idea as being so powerful and so disruptive it made him ill."[21] Because of the complications Darwin faced in introducing his theory to the world, he waited. But eventually it became apparent that he could wait no longer if he wanted to receive credit for his years of work; in 1855, Alfred Wallace, one of Darwin's contemporaries, sent Darwin a scientific paper for review that discussed evidence for a theory very similar to Darwin's theory of natural selection.[22] Darwin knew that he would lose credit for a lifetime of scientific study if Wallace's paper were published. In response, he quickly began work on his book. On November 24, 1859, 21 years after he began to consider his theory, Darwin introduced the concept of natural selection to the scientific community. The theory took the form of a 700 page "abstract" titled *On the Origin of Species by Means of Natural Selection; or, The Preservation of Favored Races in the Struggle for Life.* No one, not even Darwin himself could have predicted the intensity of the debate that would follow the publication of his theory.

Darwin's proposal that organisms evolve over time was not new to the scientific world;[23] however, the theory was never able to gain momentum because a mechanism to explain how evolution takes place had yet to be discovered. But where earlier scientists were left puzzled, Darwin ultimately succeeded; through extensive studies and research, he was able to present

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[20] Kitta MacPhearson, "Darwin, too, was Hesitant about his Theory," *The Star-Ledger, 2005.* http://web.lexis-nexis.com/universe/document?_m=f54e2b1791b4f747cc315210b1f1438f&_docnum=1&wchp=dGLbVlb-zSkVb&_md5=4f0d59e9e50be3d2d75d4b6f45167106.

[21] *Ibid*. Niles Eldridge is a famous paleontologist and the curator for the Darwin exhibit at the American Museum of Natural History.

[22] Michael Ruse, *The Darwinian Revolution* (Chicago:The Chicago University Press, 1979), 155-159.

[23] *Ibid.,* 5. Darwin's grandfather, Erasmus Darwin, and later the work of French biologist Jean Baptiste de Lamarck postulated theories that organisms acquire characteristics over time, Erasmus' Darwin's ideas were published as prose, admiring the beauties of the "developmental world" while Lamarck's theory was based on his studies on genealogy.

Natural Selection (later known as "survival of the fittest")[24] as a working mechanism to explain how and why creatures appear to evolve over time. Natural selection offered a foundation for modern evolutionary theory.

Even though most sources present natural theology and other popular religious based theories on the origin of life as the main reason Darwin hesitated to publish his findings, I am inclined to think that his own religious journey had a part to play as well. As mentioned earlier, Darwin was raised as a Christian with plans to enter the clergy; however, as the evidence in support of natural selection grew, he found it increasingly harder to believe in a merciful God. Natural selection postulates that the strongest within a species survive and pass on their genes while the weakest die out. Species who are poorly adapted to live in a particular environment will eventually fall victim to the laws of natural selection and become extinct. Because of the suffering he observed in his studies of nature, Darwin struggled with his faith. He found it hard to believe that a merciful and loving God would allow for the suffering and extinction of species that is a part of natural selection. His conflicted conscience eventually led to a loss in religious belief and referred to his thoughts on religion as "Agnostic."[25] This inner struggle may have had a great impact on Darwin's concern over the anticipated reaction of the public to the idea of natural selection.

Since religion plays such a large role in the lives of many people, Darwin knew that by proposing that his theory of natural selection he was making it possible for science to interpret the complexity of the earth without the need for a creator. This was no light statement; it

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[24] Natural Selection: "a natural process that results in the survival and reproductive success of individuals or groups best adjusted to their environment and that leads to the perpetuation of genetic qualities best suited to that particular environment." (*Merriam Webster Online)*. Natural selection has become the mechanism by which evolution is believed to have taken place.

[25] Gregory R. Peterson, *Minding God: Theology and the Cognitive Sciences* (Minneapolis: Fortress Press, 2003), 156. Darwin's studies may have played a role in his fall from faith, but it was not the only factor. Many people believe that Darwin's observation of slave-owning Christians as well as the death of his 10 year-old daughter played a large role in his slow fall from the faith.

challenged accepted religious belief and Darwin knew that it would be met with great opposition. In the end, Darwin was right; his book created a storm with the public. Some accepted the theory with excitement, imagining the great advancements in science that were sure to follow the discovery of natural selection. But others like Agassiz and Charles Hodge rejected the theory, fighting against it with passion because they saw it as a threat to Christianity and society in general.[26]. Even today, though some of the approaches have changed, the argument still lingers; Darwin himself could not have predicted the length to which the controversy over his theory would extend.

The Scopes Trial

The Scopes trial was a major landmark in the history of the Creation vs. Evolution debate and its influence can still be observed in the modern debate. In 1925 William Jennings Bryan and Clarence Darrow went head to head in a small courtroom in Dayton, Tennessee in what was to be known as "The Scopes Monkey Trial." Even though the trial more closely resembled a circus than a court case, the decision of the Scopes trial made Tennessee the first state in history to declare teaching evolution in the classroom unconstitutional.[27]

The defendant, John Scopes, was taken to court for teaching evolution is the classroom, but he was no more than a guinea pig caught in a cultural battle. A couple months before, the state of Tennessee passed the Butler Act making it illegal to teach any theory that undermines Christian beliefs, evolution was their main target.[28] The ACLU (American Civil Liberties

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[26] B.B. Warfield, *Evolution, Science, and Scripture: Selected Writings,* ed. Mark A Noll and David N. Livingstone (Grand Rapids: Baker Books, 2000). Charles Hodge, a 19th century theologian, fought vehemently against Darwin's theory while later theologians A.A. Hodge, and B.B. Warfield accepted Darwin's claim that species evolve over time through natural selection, they still rejected aspects of the theory that discussed chance in evolution and the origins of life.

[27] E.J. Larson, *Summer for the Gods,*(Cambridge, MA: Harvard University Press, 1997).

[28] John A. Moore, *From Genesis to Genetics: The Case of Evolution and Creationism* (Berkley: University of California Press, 2002), 149.

Union) arranged for John Scopes to be tried for teaching evolution in order to test the constitutionality of the law. When Scopes was brought to trial, very little science was discussed; rather it was a cultural battle between traditionalist beliefs and modernism.

The prosecutor, William Jennings Bryan, was well known in the political sphere. Not only was Bryan a leader of the Christian fundamentalist movement of the twenties but he was also a three time presidential candidate. Both Bryan's religious and political beliefs gave him strong objections to Darwinian evolution which he tirelessly fought for the early part of the century:

> I object to the Darwinian theory because I fear we shall lose the consciousness of God's presence in our daily life, if we must accept the theory that through all ages no spiritual force has touched the life of man and shaped the destiny of nations… But there is another objection. The Darwinian theory represents man as reaching his present perfection by the operation of the law of hate—the merciless law by which the strong crowd out and kill off the weak.[29]

Bryan fought evolution for cultural reasons. He could not support a theory that was driven by the suffering found in natural selection, the same reason Darwin struggled with his own faith. Bryan's passionate fundamentalist beliefs and his experience in progressive politics made him the perfect man for the job and a good opponent for the powerful defense attorney, Clarence Darrow.

Just like Bryan, Darrow had his own motivations for taking on the Scopes case. Darrow was a famous defense lawyer who was strongly opposed to the Christian faith. Though he called himself agnostic, his beliefs tended to be atheistic. He felt that Christianity was a "very dangerous doctrine;" to him, the Christian concept of original sin for all and salvation that comes only to those chosen by divine grace promotes dangerous ideas that can have adverse effects on

[29] E.J. Larson, *Summer for the Gods,*(Cambridge, MA: Harvard University Press, 1997), 39.

society.[30] Both Darrow and Bryan had strong opinions about Darwin's theory of evolution, but as I expressed above, these opinions had more to do with cultural issues dealing with religion rather than science. The argument over evolution was used merely as a vessel to bring cultural issues over civil liberties and religion into the public eye.

In the end, John Scopes was found guilty of teaching evolution in the classroom, giving Bryan and the Christian fundamentalists a victory. But even though the fundamentalists won the case, many people ultimately view Scopes as a victory for the evolutionists. Darrow provided a strong defense and embarrassed Bryan on the witness stand by pointing out uncertainties in Bryan's position. The most significant thing about the trial, though, was the amount of attention it received. People came from all over to see the trial and the press broadcasted the event across the country for everyone else; the little town of Dayton, Tennessee became famous.[31]

Even though later court decisions overturned the rulings made in the Scopes decision, the argument itself has not changed. Many creationist groups still use "monkey trial" language when defending creationist ideas. Even more striking is the resemblance of the Scopes trail to the recent trial in Dover, Pennsylvania. The issue of evolution and science is only the tip of the iceberg in these cases, the real cultural issues over the role of religion in society lie underneath the surface.

Creation Science

The Scopes trial put a damper on the teaching of evolution for a while, but evolution would soon make a big comeback. The flight of the Russian satellite Sputnik in 1957 put fear in the hearts of Americans, causing a push for better science education in the United States. Evolution began to reappear in classrooms and textbooks began to present evolution in much

[30] E.J. Larson, *Summer for the Gods*, 71.
[31] *Ibid.*

more detail than in the years directly preceding the Scopes trial. The reappearance of evolution created fear in creationist corners and pushed them to act. In 1963, the Creation Research Society (CRS), a group composed of 10 scholars dedicated to fighting evolution, introduced a new approach to solving the problem between science and Christianity, creation science.

Developed as an alternative theory to evolution, creation science provided a science that appeared to be compatible with Christian fundamentalist beliefs. In 1974, Henry Morris, a member of the CRS, published his book *Scientific Creationism,* which became the handbook of the movement.[32] The credo of creation science had three main points that were outlined in the book; 1) the Bible is the infallible word of God, everything in it is historically and scientifically true including the creation story in Genesis; 2) All living things were created by God during the creation week in Genesis; 3) The Great Flood was a historic event.[33] Creationists refuse to accept the story of creation purely on faith, but instead try to discredit the theory of evolution while trying to find their own scientific evidence in support of the story of creation in Genesis.[34]

The creationists[35] argue that God created the earth exactly as stated in the biblical creation story in Genesis chapters one and two; they argue that evolution is merely a theory and lacks significant evidence that is needed for it to be considered as fact. To support their claims they developed a science which preys on the "holes" in evolutionary theory. These "holes" include: radiometric dating, violations of the geologic law of superposition,[36] violations of the second law of thermodynamics, lack of transitional fossil evidence. They argue that radiometric dating is unreliable because nobody was around when the sediments were supposedly deposited

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[32] Henry Morris, *Scientific Creationism* (1974).

[33] John A. Moore, *From Genesis to Genetics,* 167-168.

[34] *Ibid.*, 168.

[35] In this section of the paper the term "creationist" refers strictly to proponents of creation science and does not include proponents of other anti-evolution movements.

[36] The geologic law of superposition states that the oldest layers of sediment are always on the bottom and that the youngest layers are on top. There are some places where plate tectonics has caused these layers of sediment to shift and younger layers are found below older layers ("superposition," www.geology.com).

to prove how long it actually took to deposit the layers of sediment contained in the rock layers of a geological column. Their second argument, the violation of the law of superposition, can supposedly be observed in multiple places: places where younger rock layers are found underneath older rock layers is argued to be one of these places, another place can be seen in places where dinosaur and human prints can be found crisscrossing each other in the same rock layer. Their third argument is that paleontologists have yet to produce a real transitional fossil; they argue that a transitional fossil it needs to have characteristics that exhibit obvious change from one species to another. It should have half-developed features such as half feathers/half scales, half legs/half wings, half-developed heart, half-developed eyes, etc.[37] The last argument presented here is the violation of the 2nd law of thermodynamics which is the idea that organisms increase from simple to complex over time.

Today most of these arguments against evolution have been dismissed as faulty by expert creationists themselves. For example: there are places where it appears that the law of superposition has been violated because tectonic activity has folded rock layers so that younger rock layers are found underneath older rock layers. The "Paluxy River man prints," which were also used as evidence of a violation of the law of superposition has also been dismissed as a hoax. Giant human footprints were found crisscrossing dinosaur prints in limestone beds near the Paluxy River in Texas, these prints were argued to prove the coexistence of man and dinosaur, proving the earth is much younger than the 4.6 billion years old that geologists claim.[38] However, scientific study of these "prints" has revealed nothing more than partially registered dinosaur prints and a few deliberate forgeries. Henry Morris himself even later admitted that the

[37] Henry Morris. "The Logic of Biblical Creation (#205)" (January 8, 2006) http://www.icr.org/index.php?module=articles&action=view&ID=331.

[38] Harold L. Levine, *The Earth Through Time,* (Hoboken, NJ: John Wiley and Sons, Inc., 2003), 1.

Paluxy tracks were not valid evidence.[39] As for the claim that no transitional fossils have been produced, this is because the type of fossils creationists want to find will never be found. Evolution will not produce fossils showing half-developed hearts and eyes because that is not the way in which the process of evolution works. However, many transitional fossils have been discovered that show a great example of the transition from one species to another. The well-known *Archaeopteryx* displays transition from reptile to bird[40] and the newly discovered *Tiktaalik roseae* which is now being called "the missing link between fish and land vertebrate."[41] Both of these are widely accepted in the scientific community as great examples of transitional fossils, however, creationists deny them as transitional evidence saying they are merely different species that have gone extinct and they prove nothing about species-to-species evolution.[42]

Creation science has changed a lot since its development in the 70's, pushing intelligent design arguments rather than the original arguments mentioned above; but there are still a surprising number of people who continue to hang on to outdated creationist arguments. Evidence of use of outdated arguments can be observed though conversation with some creationists and it can also be observed in a Gallup poll conducted in 2001. The poll stated that 45% of people interviewed believed that, "God created human beings pretty much in their

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[39] Lenny Flank, Jr . " The Paluxy River Man Prints" (1995) http://www.geocities.com/capecanaveral/hangar/2437/paluxy.htm.; John A. Moore, *From Genesis to Genetics,* 172.

[40] John A. Moore, *From Genesis to Genetics,* 169.

[41] John Noble Wilford, ""Fossil Called the Missing Link from Sea to Land Animals," *The New York Times,* (April 6, 2006). The *Tiktaalik roseae* is a 375 million year old fish that was found in the Canadian Arctic that displays the fish-tetrapod (a tetrapod is a four-legged land animal) transition. It is between four and nine feet long with a flat, crocodile-like head and shows evidence of the beginnings of limbs. Scientists are declaring that its discovery should discredit the creationist claims against species-to-species evolution.

[42] Kathleen Hunt, "Transitional Vertebrate Fossils FAQ Part 1A"(March 17, 1997), http://www.talkorigins.org/faqs/faq-transitional/part1a.html. *Species-to-species* fossils reveal actual speciation of an organism usually spanning less than a million years.

present form at one time within the last 10,000 years or so," revealing the popularity of the Young Earth Creationist (YEC) view of creation.[43]

Even though it was 30 years after Scopes and the science was new, much of the original argument over creation and evolution had not changed. Creation science pushed the cultural evils evolution just as Bryan had done in the 1925. The hope was that by pointing out not only the scientific problems but the cultural problems as well, people would be convinced that creation science presented more accurate and a better moral alternative to evolution. They argued that evolution is based on deterministic principles of competition, suffering, and death and if people believe they are merely the result of this cruel cycle, they will loose all morals and revert back to their natural animal instincts, "survival of the fittest."

The leaders of the creationist movement had the credentials that allowed them to be taken seriously along with a healthy dose of charisma to help wow the public.[44] They were skilled orators and very charismatic. By using a skeptical approach that focused mainly on the "holes" in evolutionary theory rather than the facts of creation science they were very successful at gaining a loyal following. These men passionately believed that belief in evolution is an underlying cause for many cultural evils: abortion, terrorism, drugs, humanism, pornography, crime, and loss of moral education to name a few. A well-known diagram that depicts this problem is known as the "the tree of evolution" shown in the Appendix as figure 1. This tree depicts the idea that the tree of evolution is fed by sin and evil and because of this it is only able

[43] Gallup Poll, 2001. Young-earth creationists (YEC) are people who have derived the age of the earth from the genoeologies found in the bible, concluding that the earth is about 6,000 years old and that most humans died in a world-wide flood 4,000 years ago. They are not the most extreme creationists, since they believe in a Galilean solar system, but they are much more extreme than old-earth creationists (OEC). OEC's do not take an extremely literal reading of Genesis and accept ideas that suggest the earth is older than 6,000 years old such as the "gap theory," "day-age" theory, and "progressive creationism." (Massimo Pigliucci, *Denying Evolution,* 37-39.)

[44] All original members of the CRS held advanced degrees from credible universities in a variety of subjects, but very few of these were in the areas of science that are applicable to the study of evolution.

to bear bad fruit. But the ax near the tree represents the scientific creationists who are trying diligently to cut the tree down and save humanity.

Intelligent Design and Other Creationist Movements Today

As mentioned earlier, over the past decade old creationist arguments are slowly being phased out, while the ID phenomenon has been sweeping across the country like wildfire. ID encompasses a wide spectrum of creationist beliefs ranging from strict YEC to more open minded progressive creationism[45] so is can be difficult to say exactly what all proponents of ID actually believe. The most common understanding of ID is based on the idea of "irreducible complexity;" for an organism to be irreducibly complex means that it is too complex to have evolved completely by chance through evolution. ID advocates also argue that all complex things have a designer; they use computers and newspapers as examples, saying these things did not just appear on their own, rather they are the work of a computer programmer or an editor. They postulate that the everyday examples of design supports the idea that our own complex bodies were also created by a designer. While their idea of a designer seems to overwhelmingly point to a God, many proponents adamantly claim that ID is not a religiously based idea, "but instead an evidence based scientific theory about life's origins-one that challenges strictly materialistic views of evolution."[46]

ID accepts that there is significant evidence that organisms evolve over time, but it rejects the idea that biological change is a result of undirected chance, as Darwin claimed. Biochemist Dr. Michael Behe is a leading scientist in the ID movement and asserts that organisms are "irreducibly complex" and must be the product of a designer. He uses the bacterial flagellum as

[45] See note 43.

[46] Stephen C. Meyer, "What is Intelligent Design" (December 1, 2005), http://www.catholiceducation.org/articles/science/sc0074.html.

a classic example. The flagellum appears simple at first look, but Behe argues that it is actually a small motor composed of 30 different parts; if it was put together in any other order or missing any of its 30 pieces it would not be functional. To simplify the idea of irreducible complexity he uses a "mousetrap" analogy:

> A good example of such a system is a mechanical mousetrap. ... The mousetrap depends critically on the presence of all five it its components; if there were no spring, the mouse would not be pinned to the base; if there were no platform, the other pieces would fall apart; and so on. The function of the mousetrap requires all the pieces: you cannot catch a few mice with just a platform, add a spring and catch a few more mice, add a holding bar and catch a few more, All of the components have to be in place before any mice are caught. Thus the mousetrap is irreducibly complex.[47]

Just like the mousetrap, the complex organization of the flagellum is the product of a designer. Another argument Behe uses deals with blood clotting. He argues that blood is much more complex that people realize. For example, when a person gets a cut, the blood clots so that blood flow will cease; if clotting did not exist, animals could eventually die from severe blood loss. But the amazing thing about blood is that somehow clotting is confined to cuts. If this were not the case, the blood within the body could completely solidify, eventually killing the animal. Behe argues that modern science has yet to explain the mysteries of blood and that it is just one more example of evidence supporting ID theory.[48]

In regard to Darwin's theories, Behe does not fully reject them. He does not deny the existence of natural selection, but he does deny its effectiveness as a mechanism for evolution. He admits that there is significant evidence that an organism evolves due to genetic mutations and natural selection, such as the Galapagos finches studied by Darwin, but Behe argues that this change can only happen once an organism has already been created. Thus, ID supports the idea

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[47] Michael Behe, "Intelligent Design Theory as a Tool for Analyzing Biochemical Systems," *in Mere Creation* (Downers Grove, IL: InterVarsity Press, 1998), 178.

[48] Michael Behe, *Darwin's Black Box: the biochemical challenge to evolution* (New York: The Free Press, 1996), 78.

of evolution within a species, sometimes called microevolution, but it does not support the idea of species-to-species evolution,[49] or the ideas of macroevolution. He feels that there is no evidence that a new species can be created through natural selection alone.[50]

Proponents of ID argue that critics inability to come up with counter evidence against design helps support the validity of ID, but I disagree. Kenneth Miller, a professor of Biology at Brown and devout Catholic, disagrees openly with the claims of ID. Miller pointed out the shortcomings in Behe's theory by comparing them to the problems with the mousetrap analogy:

> Ironically, Behe's own example, the mousetrap, shows what's wrong with this idea. Take away two parts (the catch and the metal bar), and you may not have a mousetrap but you do have a three-part machine that makes a fully functional tie clip or paper clip. Take away the spring, and you have a two-part key chain. The catch of some mousetraps could be used as a fishhook, and the wooden base as a paperweight; useful applications of other parts include everything from toothpicks to nutcrackers and clipboard holders. The point, which science has long understood, is that bits and pieces of supposedly irreducibly complex machines may have different -- but still useful -- functions.[51]

If Behe's own analogy cannot stand up to the criticisms of scientists like Miller, it shows Behe's theories need some serious work if there is any truth behind them. Not only should ID proponents rethink the science behind the theory of irreducible complexity, but they should also be careful in what they attribute to God. Even though scientists may not currently have an explanation for the complexity of the flagellum motor, ID proponents should not be so hasty as to assume they never will. Science has a rich history of discovering the answers to questions that were once thought to be a mystery. If the mysteries of the flagellum motor are one day solved through science, the "god of the gaps" problem emerges, slowly reducing the role of God.[52] I feel that not only are we crippling religious faith by implementing "god of the gaps" theology,

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[49] See note 42.

[50] Stephen C. Meyer, "What is Intelligent Design," *National Post of Canada,* (December 1 2005).

[51] Kenneth Miller, "The Flaw in the Mousetrap: Intelligent design fails the biochemistry test." *Natural History Magazine,* April 2002, http://www.actionbioscience.org/evolution/nhmag.html.

[52] "God of the gaps" is often viewed as the retreat of religion as a result of the ever-growing scientific explanations for the history of the universe. As the knowledge of science increases, the place of God in the creation steadily decreases.

but we are also crippling science as well. By settling with the idea that "God created it, so we can't understand it," we are putting limits on the potential of future scientific study. Dr. Kenneth Miller expressed this same concern during the Dover trial: "once you attribute a cause to an untestable supernatural force, a proposition that cannot be disproven, there is no reason to continue seeking natural explanations as we have our answer. ID."[53] Thus far the theory of ID is not supported by scientific evidence, rather it is supported by lack of counterevidence and misinterpretations of previous scientific study.

In the concluding statement of Meyer's article on ID, he quotes the atheist philosopher Antony Flew who says we must "follow the evidence wherever it leads" hinting that the evidence is actually pointing to ID,[54] but I feel it does just the opposite. There are many studies in scientific journals that support the theory of evolution, while ID researchers have yet to publish a single article dealing with ID in a scientific journal. Some people feel this is a result of the scientific community's negative view of ID, and that they have perfectly good evidence but scientific journals fail to take them seriously. But even though there may be a hint of truth to this, it is not the main reason nothing has been published. What evidence is Meyer pointing to as proof of design? Scientific articles go through such a thorough process of review that it is unlikely that a theory supported by valid evidence would go unpublished. As of now, I feel there is much more evidence in favor of evolution than there is in favor of ID. You may never be able to disprove that a designer exists, but that does not offer proof that a designer does exist either.

Aside from lack of supporting evidence, there are other reasons scientists feel uneasy about the growing popularity of ID. While ID claims to be unaffiliated with any religious beliefs, it shows a very close resemblance to the creation science movement. Many scientists

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[53] "Excerpts from the Memorandum Opinion issued on Dec. 20,2005 by Judge John E. Jones it *Kitzmiller v. Dover*"

[54] Stephen C. Meyer, "What is Intelligent Design," *National Post of Canada.*

actually view ID as "repackaged creation science" and see it as a new attempt to get religion back into the schools. And these are not unreasonable fears. Phillip Johnson, the leader of the ID movement, already has a history of conflict with the scientific community, [55] prior to his involvement with ID; and his work with the ID movement is showing similar results. In the beginning of the ID movement, Johnson helped develop a strategy for spreading the theory of design to help overcome the "materialistic" ideas of evolutionary theory known as the "wedge strategy:"

> If we understand our own times, we will know that we should affirm the reality of God by challenging the domination of materialism and naturalism in the world of the mind. With the assistance of many friends I have developed a strategy for doing this…We call our strategy the "wedge."[56]

While there is some dispute to whether or not a "wedge document" actually exists, Johnson openly discussed the idea in his book *Defeating Darwinism by Opening Minds* with chapter 6 devoted entirely to the wedge strategy.[57]

If ID claims were supported by solid scientific evidence, a wedge strategy would not be of much concern because people have a right to know the truth, but this is not the case. In 1996 Johnson admitted that this movement is not actually about science: "this isn't really about science, and it never has been, a debate about science….It's about religion and philosophy."[58] While I agree that the conflict itself is largely about cultural issues, it is contradictory to the tenets of ID, which is supposedly an "evidence based scientific theory." While there are

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[55] Phillip Johnson, "The Thinking Problem in HIV-Science" (December 16, 1994), http://www.virusmyth.net/aids/data/pjthinking.htm. Johnson is involved in the movement that claims there is not significant evidence that HIV causes the AIDS virus, saying that HIV-scientists use "the usual weapons of pseudoscience" to raise fear that a "pandemic caused by HIV is ravaging the planet"

[56] Philip Johnson, *Defeating Darwinism by Opening Minds* (Downers Grove, IL: Intervarsity Press, 1997), 91-92.

[57] Barbara Forrest, "The Wedge at Work: How Intelligent Design Creationism is Wedging its Way into the Cultural and Academic Mainstream." In *Intelligent Design Creationism and its Critics: Philosophical, theological, and Scientific Perspectives.* Edited by R.T. Pennock (Cambridge, MA: The MIT Press, 2001), 12.

[58] Jay Grelen, "Witness to Prosecution," *World,* November 30, 1996 (Cambridge, MA: The MIT Press, 2001), http://www.worldmag.com/articles/374, 12.

scientists like Behe who work as researchers for ID, they have not produced any strong evidence supporting their theory; and the evidence that has been produced is questionable. For example, the paleobiologist Paul Chien has done some studies on the Chinese Cambrian fossils and concluded that the fossils show patterns of explosive appearance rather than the slow, step-by-step process required in neo-Darwinian theory.[59] His lack of credentials in the area of paleontology make his study very questionable, especially since it contradicts the work of many highly educated paleontologists.

The most remarkable thing about ID is how quickly its popularity has spread, even though few people really understand the theory. As mentioned earlier, many public schools have attempted to introduce ID into their science curriculum and at least 10 states have considered it in the past year.[60] The recent Dover, PA case is a great example that is still fresh in everyone's minds. The Dover school district was the first school district to require the teaching of ID in the science curricula. A new biology curriculum was devised: "Students will be made aware of the gaps/problems in Darwin's theory and other theories of evolution including, but not limited to, Intelligent Design. Note: Origins of life will not be taught."[61] The school was also given a collection of texts that they made available to their students titled *Of Pandas and People* that taught the theory of ID while presenting "evidence"[62] against evolution. While many people in the school district supported this change, there were just as many who opposed it. Citizens of Dover also expressed their dislike in the way the issue over ID in the schools polarized the community. One woman felt her freedoms were being threatened saying:

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[59]Barbara Forrest, "The Wedge at Work: How Intelligent Design Creationism is Wedging its Way into the Cultural and Academic Mainstream." In *Intelligent Design Creationism and its Critics: Philosophical, theological, and Scientific Perspectives.* Edited by R.T. Pennock, 20.

[60] Rich Ehisen, "Evolution debate nothing new for states" *State Net Capitol Journal* Volume XIII, No. 32.

[61] Joseph Maldonado, "Dover curriculum move likely a first" *York Daily Record,* (October 20, 2004).

[62] Excerpts from the Memorandum Opinion issued on Dec. 20, 2005, by Judge John E. Jones in *Kitzmiller v. Dover.* Experts have argued against the evidence Pandas uses against evolution saying that it is unfounded and gives false presentation of evolutionary theory.

> Our freedom to worship, to learn about God has been taken away from us…they're [the school district] is not even asking for religious freedom, they're only asking for scientific freedom. But because it's somehow associated with God, it's not allowed.[63]

Interestingly another woman felt her same rights were being violated by the ID conflict as well, but in the opposite way: "I am raising my girls with Christian values…But I can't be a hypocrite and say that in the public school, teachers can only teach from a Christian perspective. One of the reasons people settled in this country was to escape religious persecution."[64] It is obvious that this is much more than a scientific debate: it is cultural through and through, and the science involved is only a façade.

In the end, victory was not in the stars for the Dover school district, and the court ruled against them. Nothing seemed to go right for them; with most expert witnesses dropping out right before the case and the Discovery Institute's failure to offer support.[65] Even Behe's testimony failed to produce the desired result and the school district failed to put up a good defense. The results of the case show that even though ID is becoming very popular among the general public, the lack of supporting evidence is obvious in the court room; ID has yet to win a case.

But even despite their failure in Dover, the ID theory is still gaining support. In January a teacher at Frazier Mountain High School in California tried to introduce a "Philosophy of Design" class that was heavily biased toward creationist ideas and presented very little accurate information on the side of evolution. The class was shot down by the school board, but only

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[63] Joseph Maldonado, "Book is focus of more debate," *York Daily Record* (June 15, 2004).

[64] *Ibid.*

[65] Members of the Discovery Institute (DI), a research center for intelligent design, printed a book titled *Intelligent Design in the Public School Science Curricula* which strongly hinted at teaching ID in the schools: "school boards have the authority to permit, and even encourage, teaching about design theories an alternative to Darwinian evolution—and this includes the use textbooks such as Of Pandas and People that present evidence for the theory of intelligent design…" (forum: "Science Wars") But when the Dover case was brought to court the DI refused to offer support saying, "We do not endorse or support what the Dover school district has done… this is not what we recommend" (Joseph Malando, "Dover curriculum move likely a first" *York Daily Record* (October 20, 2004).

after months of debate and the threat of going to court. As long as ID proponents continue to utilize their persuasive techniques with the public, they will continue to be a major force in the growing rift between science and religion. During the trial, Casey Luskin, the program director for the Discovery Institute compared Dover to the Scopes "Monkey" trial:

> I hope that the U.S. District Judge John Jones 3rd, who is hearing the trial, will recognize that this lawsuit is like the Scopes trial of 1925. Only now, the roles are reversed, for today it is the Darwinists who seek to ban legitimate science from the classroom. May scientific truth and academic freedom ring.[66]

As people become better informed about the particulars of evolution and ID, hopefully they will begin to realize that Dover is not like Scopes. As of now, ID is not a legitimate science and has no business in the school science curricula. In a court testimony in Dover, Miller addressed a fear that is on the minds of many involved in trying to resolve the conflict:

> By holding this up as an alternative to evolution, students will get the message in a flash. And the message is, over here kids. You got your God consistent theory, your theistic theory, your Bible friendly theory, and over on the other side your atheist theory, which is evolution. It produces a false duality. And it tells students basically, and this statement tells them, I think, quite explicitly, choose God on the side of Intelligent Design or choose atheism on the side of science. What it does is to provide religious conflict into every science classroom in Dover High School. And I think that kind of religious conflict is very dangerous. I say that as a person of faith who was blessed with two daughters, who raised both of my daughters in the church, and had they been given an education in which they were explicitly or implicitly forced to choose between God and science, I would have been furious, because I want my children to keep their religious faith.[67]

If creationists achieve the "scientific freedom" they are hoping for, the rift between science and religion will continue to grow. "Equal time" sends the message that one of these theories is wrong so you must choose between the two, choosing either the theory that supports religion or the theory that does not; there will no longer be a middle ground where both religion and

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[66]Casey Luskin, "All sides of the issue belong in the classroom," (September 28, 2005), http://www.philly.com/mld/philly/12759702.htm?template=content...

[67] Kenneth Miller, Excerpt from court transcript from part III of American Enterprise Institute Forum, "Science Wars," October 21, 2005.

evolutionary theory can be accepted. If ID and "equal time" are introduced in the schools, young and impressionable minds will feel the pressure to make an unnecessary choice between faith and science. And keep in mind, eventually the evidence will speak for itself; and when it does, there is no guaranteeing that the children will choose faith.

Chapter 3 Positive Approaches to Evolution within the Church

Introduction

With the hype created by various creationist movements and the political battles over teaching evolution in the schools, it often seems that the church's idea of creation and the scientific evidence for evolution is at complete odds with each other. This misconception creates much of the confusion and conflict in the issue over creation and evolution. Not all theologies reject evolution; some clergy members of Catholic and Evangelical Anglican traditions have accepted evolution along with most scientists since its debut in 1859.[68] Some Christian denominations like Southern Baptists and the Lutheran Church Missouri-Synod advocate a literal translation of the scriptures; because of their fundamentalist theology, they are not be able to support evolution. However, this is not the case for all Christian denominations. Many Christian denominations, including Roman Catholicism, Episcopalian, and the Evangelical Lutheran Church of America (ELCA), do not endorse a literal interpretation of Genesis, allowing room for dialogue regarding evolutionary theory. Both the Catholic church and the Episcopal church have put much thought into the issue. They have created official statements, concluding that evolution and theology of creation can work together. But other churches, the ELCA included, choose an even easier approach—put it off till later. While the ELCA's theology has the potential to be compatible with evolution, the church has done very little in officially addressing creation and evolution, giving the members of their church little guidance on the issue. While the different approaches mentioned in this section are more favorable towards evolution than many other approaches, there are still problems that need to be worked out.

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[68] "Catechism of Creation: Creation and Science," *The Episcopal Church*, (Accessed March 18, 2006) http://www.episcopalchurch.org/19021_58398_ENG_HTM.htm.

The Catholic Position on Evolution

The Catholic church is one of the few churches that has taken an official position on the issue of creation and evolution. Since Darwin's tine, the church has closely studied the advances of science and the theory of evolution because of its connection with the story of creation in Genesis. In the 1950's the Catholic church accepted the evidence in support of evolutionary theory as valid when Pope Pius the XII declared that there is no opposition between evolution and the doctrine of the faith about "man and his vocation."

Almost half a century later, in 1996, Pope John Paul II felt the need to address the issue once again in light of the renewed conflict over creation and evolution. In his address, he reminded Catholics of the words of Leo XIII that "truth cannot contradict truth." This is a very important statement in the conflict between creation and evolution. As mentioned earlier, creationists argue that the claims of science contradict the teachings of the scripture, mainly the seven-day creation story in Genesis. But the pope acknowledged that scientific study teaches us a great deal about the earth and its formation. Since truth is visible in nature as well as through the Holy Scriptures, the creation story is not meant to be interpreted as a scientific account of the origins of the universe.

The method of interpretation of scriptures is very important in the conflict over creation and evolution. In the document "The Interpretation of the Bible in the Church," methods of interpretation are discussed in hopes to find the best way to interpret the Holy Scriptures in accordance with the Catholic tradition.[69] According to *Dei verbum,* the Catholic church believes that the scriptures are divinely inspired. However, they recognize that they were written by man and when investigating God's meaning in the scriptures one must do so carefully, using

[69] "The Interpretation of the Bible in the Church," Presented by the Pontifical Biblical Commission to Pope John Paul II on April 23, 1993 (as published in *Origins*, January 6, 1994), http://www.bible-researcher.com/catholic-interpretation.html#Introduction.

contemporary literary forms that help evaluate the culture and spirit in which the scripture is written so that it can be correctly applied to modern times.[70] This is a very different mode of interpretation than the fundamentalist approach, which takes the Bible to be the literal word of God. The strict fundamentalist approach is what is used with most creationist theories such as YEC[71] and is not looked and upon favorably by the Catholic church:

> The fundamentalist approach is dangerous, for it is attractive to people who look to the Bible for ready answers to the problems of life. It can deceive these people, offering them interpretations that are pious but illusory, instead of telling them that the Bible does not necessarily contain an immediate answer to each and every problem. Without saying as much in so many words, fundamentalism actually invites people to a kind of intellectual suicide. It injects into life a false certitude, for it unwittingly confuses the divine substance of the biblical message with what are in fact its human limitations.[72]

By rejecting the fundamentalist approach as a dangerous mode of interpretation, evolution no longer stands in the way of the truth of God. Pope John Paul II actually declared that scientific evidence has shown that "the theory of evolution is more than a hypothesis;" however, he does discuss the limitations of evolution and scientific study. Genesis 1:27-29 declares through revelation that man was created in the image of God. This is taken to mean that God created the spiritual soul of humans, since science tells us that our physical bodies evolved from lower life forms. Any philosophy that proposes that the human spirit has evolved through evolution rather than through God is "incompatible with the truth about man"[73] and thus cannot be truth. Science is responsible for observing and measuring the earth to try and understand how the earth was created, however, "the moment of transition to the spiritual cannot be the object of this kind of observation." Knowledge of self-awareness and self-reflection should be left to

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[70] Pope Paul VI, *Dei Verbum: Dogmatic Constitution on Divine Revelation, second Vatican council,* (November 18, 1965), chapter 3.

[71] See note 43.

[72] "The Interpretation of the Bible in the Church," Presented by the Pontifical Biblical Commission to Pope John Paul II on April 23, 1993 (as published in *Origins*, January 6, 1994), http://www.bible-researcher.com/catholic-interpretation.html#Introduction.

[73] Pope John Paul II, "Truth cannot Contradict Truth," sec. 5.

philosophy while the ultimate meaning according to the Creator's plans should fall to the domain of theology.[74]

While the Catholic approach offers a favorable approach to science, it is not perfect. The famous physicist Stephen Hawking mentions in his work *A Brief History of Time* that he attended a cosmology conference at the Vatican in 1981. He claims that in the closing statements by Pope John Paul II, the Pope told everyone "it was all right to study evolution of the universe after the big bang, but we should not inquire into the big bang itself because that was the moment of Creation and therefore the work of God."[75] Hawking's statement suggests that the Pope is putting limitations on what can be studied by science, raising a problem with the function of science. While there is debate about whether the pope actually said these words, Hawking's claim brings up possible problems with the Catholic approach to the issue. Though the Pope may not have put restrictions such as suggested by Hawking, the Pope did deal with some limitations on science in his 1996 address to the Pontifical Academy of Sciences. He declared that the moment of transition to the spiritual cannot be observed through science:

> The experience of metaphysical knowledge of self-awareness and self-reflection of moral conscience, freedom, or again of aesthetic and religious experience, falls within the competence of philosophical analysis and reflection, while theology brings out its ultimate meaning according to the creators plans.[76]

By making this statement the Pope is placing limitations on the things that science can study. Science is all about the quest for knowledge, and putting restrictions on what can be studied poses a problem for science and could ultimately limits the possibilities for future discoveries. It is possible that science does not yet have a way to measure things like self-awareness and

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[74] Pope John Paul II, "Truth cannot Contradict Truth," sec. 6.
[75] Stephen Hawking, *A Brief History of Time*, 120.
[76] Pope John Paul II, "Truth cannot Contradict Truth," sec. 6.

religious experience and they may never find one, but there should be no limit barring the attempt.

The Catholics have a few advantages over most other denominations. They have an established system that allows them to carefully study many issues at once and as a result have been able to study the evolution conflict in great detail. They also have a Pope acting as a figurehead who is able to make official statements, providing direction for individual parishes. Though he only represents the Catholic church body, the Pope's prestige allows him to influence many people outside the Catholic church, giving him a wide area of influence that is not present in smaller church bodies like the ELCA and Episcopalians. But even though the Catholic church has such a well organized hierarchy, not all Catholics accept all positions taken by the Pope. Even though the Catholic church has officially accepted evolution, not all Catholics accept the theory. A group of Catholic traditionalists who disagree with the Pope's interpretation of Genesis have formed an opposition. The Kolbe Center for the Study of Creation is one of the leaders in this movement against the Vatican's position on evolution.[77] The Catholic traditionalists show that not even official statements made by the church will persuade all people. If steps toward reconciliation between science and religion are to be made it cannot be left up to the church alone; many different steps need to be taken inside and outside the church to make an impact in reducing the conflict between science and religion.

The Episcopalian Position on Evolution

The Episcopalians have found a way to address the issue of evolution and creation that is consistent with both theology and scientific study. While the Episcopal church has yet to speak officially on the subject, it has recently published the "Catechism of Creation" which discusses

[77] *The Kolbe Center for the Study of Creation: Defending Genesis from a Traditional Catholic Perspective,* http://www.kolbecenter.org/ (March 22, 2006).

the issue of creation and evolution. Reverend Kendall Harmon explains, "The goal of the Catechism is to remind people of the importance of the glory of creation and the ways in which it touches people's faith every day." [78] The Catechism discusses many of the major areas of conflict and presents information about: the scriptures and interpretation, science and the theory of evolution, and different creationist theories.

Episcopalians believe that the Bible contains "all things necessary to salvation"[79] but it does not contain all necessary truths about everything else. In response to biblical passages that seem to speak out in terms of scientific cosmology, the Catechism of Creation rejects these passages as scientific evidence for creation. Throughout history, some theologians have taken an "observational" approach to the Bible's cosmology. An observational approach asserts that "God inspired ancient writers to describe the world in concepts and language they and their audiences could understand, not in our concepts and language."[80] This means that the scriptures are not meant to be read in scientific terms. The cosmology of the bible is not scientific, rather it is based on observation. If God had inspired the writers of the biblical scriptures to explain the earth in scientific terms used today, very few people would actually understand it. And nobody in the early years of Christianity would understand Genesis if it were written in scientific terms. Observational cosmology is effective because it allows the bible to transcend time and culture in a way scientific cosmology is unable to do.[81]

The Episcopalians take a lot of their views on creation and evolution from the work of the Anglican priest and physicist, John Polkinghorne. They feel much like the Catholics and assert

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[78] Phina Borgeson. "New 'Catechism of Creation published by Committee on Science, Technology, and Faith."(March 28, 2005) http://www.episcopalchurch.org/3577_60521_ENG_HTM.htm.

[79] *The Book of Common Prayer, 1979,* (New York: Church Publishing, 1986), 868.

[80] "The Catechism of Creation", 9.

[81] Godfrey, S. and C. Smith, Paradigms on Pilgrimage: Creationism, Paleontology, and Biblical interpretation. Clements Publishing: Toronto, Ontario, 2005; 134.

that evolution is much more than a mere hypothesis; and that by accepting an "observational interpretation" of scriptures many things can be learned through science about the origins of the universe. The Catechism goes on to present the fossil record, biogeography, and genetics all as strong evidence in support of biological evolution. These evidences support evolutionist claims that the earth and all its organisms evolved slowly over time.[82]

Even though the Catechism of Creation is not an official statement, it is a very useful tool for informing believers what Episcopalian theology allows in the issue over creation and evolution. In 1982 the church spoke out at a general convention, stating that God has the ability to create in any manner and they reject the "ridged dogmatism of the 'Creationist' movement." The church also gave scientists, educators, and theologians support in the search for truth. More people need to become aware of documents like the Catechism of Creation so that they may become exposed to new ideas, different from the tired creationist arguments that can be seen all over the media.

The ELCA on Evolution

The ELCA is a relatively new denomination and has many issues that the Church has yet to discuss. Currently bogged down by the issue of homosexuality in the church, they have yet to really address the issue of evolution and creation. This is unfortunate, because even though homosexuality in the church is an important issue that requires immediate attention, pushing other issues off to the side is not the best way to deal with them. As mentioned earlier, the ELCA allows for a non-literal translation of the scriptures, which makes it possible to support the theory of evolution. If the ELCA were to take action, steps toward a resolution could be made.

[82] "The Catechism of Creation." The earliest fossils found of human-like ancestors date back about 6.7 million years and modern humans appeared between 100,000 and 200,000 years ago.

To say that the ELCA has done absolutely nothing on the issue of creation and evolution would be inaccurate; but I think it is fair to say they have the capability to do more than they have. In March, 2005 the ELCA steering committee for the alliance of Faith, Science, and Technology opted to endorse the "Grantsburg Letter" which is a proposal from a community of Christians that believe evolution and creation can be reconciled.[83] However, the ELCA has made no official movements on this issue. The ELCA website encourages dialogue on the issue of faith, science, and technology and offers "Faith and Science Brown Bag Lunches" which are presentations by scientists, teachers, and theologians on the issue of science and faith.[84] While these are good ways to inform people about evolution they are far from being efficient. The "Brown Bag Lunches" are held in Chicago and a trip all the way to Chicago is not manageable for everyone.

But the ELCA's failure to officially address the issue leaves many Lutherans unsure of what the ELCA's theology supports. The ELCA is much smaller and does not have the organization that allows it to cover the conflict in as much detail as the Catholic church, but I am disappointed in their efforts towards helping diminish the conflict thus far. The ELCA needs to publish some information that is easily available to all congregation members to help inform people how the Lutheran theology fits with the views of evolution and the differing creationist movements today. By doing this the church will help guide people through the mess caused by the conflict. But if the ELCA continues to let itself become overwhelmed by one or two issues like homosexuality, the other issues like science and religion will continue to pile up and the state of the conflict will worsen. .

[83] "The Grantsburg Letter," http://www.elca.org/faithandscience/news/05-04-13-grantsburg.html.
[84] See The Evangelical Lutheran Church in America website for information, www.elca.org.

Chapter 4 Promising Approaches to a Solution

Introduction

Sometimes the extent to which the conflict between science and religion has grown makes it appear as if very little has been done to offer a solution to this problem. As mentioned earlier, creationist ideas seem to dominate the media, with very little said about the ideas of Christian evolutionists. But even though they are not well known outside of particular academic circles, there are some brilliant people working to find a solution to this conflict and their ideas should be considered. These people come from varying backgrounds of science and theology, often with extensive knowledge in both disciplines. John Polkinghorne and John Haught are a just a two of those who have taken on the challenge of finding a reconciliation between evolution and the Christian faith.

John Haught

Much of the success of the creationist movements among the general public is a result of their ability to move past the initial argument over whether or not evolution is an accurate scientific theory. Too much of the material available on the issue of science and religion is focusing on the same tired old argument over the validity of Darwinian evolution. By moving past this initial argument, they are able to address issues that are much more pertinent to the lives of many Christians than science; such as the effect belief in evolution has on a person's faith. Most scientific arguments are too advanced for people with little background in science to comprehend. A Gallup poll conducted in 1999 revealed that the more formal education a person has, the less likely they are to believe in creationism.[85] As reflected in the poll, creationist

[85] Brian and Sandra Alters, *Defending Creationism in the Classroom, 50-51.* The gallup poll revealed that 55% of people polled with a high school diploma or less believed in creationism while the number dropped to 41% of college graduates and 30% for post-graduates.

theories are more widely accepted among people with less education, showing that ignorance could play a role in a person's opinion regarding the theory of evolution. The creationist opinion that belief in evolution has a negative effect on issues of morality and faith resonates with much more clarity among people with little scientific education than the complex scientific claims made by evolution. Often times these negative claims can entice people to disregard evolution and embrace creationist theories instead. This is where Christian evolutionists are failing. The evidence in support of evolution greatly outweighs the evidence supporting creationist theories; however, very few people have addressed a reason why Christians should accept evolution (aside from issues involving scientific reasoning) as opposed to creationism.

However, John Haught, a distinguished professor of theology at Georgetown University, is one of the few to boldly address this issue. He presents the problems with current ID and materialist evolution theories and offers a new "theology of evolution" for resolving the conflict between science and religion. In his book, *God After Darwin: a theology of evolution,* Haught expresses his concern that the ideas of both ID and scientific materialism are missing key points to understanding the purpose of life.[86] He asserts that it is up to theologians to consider the place for Darwinian evolution within the scope of modern theology.[87]

Haught explains that while science continues to advance, "contemporary religious thought has yet to make a complete transition into a post-Darwinian world."[88] Theologians seem to write almost as if Darwin never existed. Scientific skeptics felt that the discovery of Darwinian evolution marked the beginning of the end of religion and theology. Though this claim is somewhat unwarranted, if theologians continue to ignore Darwinian theory there may be

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[86] Scientific materialism is Haught's term for an atheistic/agnostic view of the origins of the earth. are John Haught's way of describing atheist/agnostic evolutionists and ID just refers to the theory of Intelligent design presented in chapter 2.

[87] John Haught, *God After Darwin: A theology of evolution* (Boulder, CO: Westview Press, 2000).

[88] *Ibid.*, 2.

a small degree of truth to the skeptics prediction. In Haught's work, he takes the time to point out that ID and materialistic evolution are lacking in an essential point, an understanding of life. But Haught goes on to explain that the problem can be remedied if people consider a theology that is compliant with Darwinian theory:

> Darwin has gifted us with an account of life whose depth, beauty, and pathos—when seen in the context of the larger cosmic epic of evolution—exposes us afresh to the raw reality of the sacred and to a resoundingly meaningful universe.[89]

ID and materialistic evolution are two extremely different methods of explaining the origins of the universe, but both lack extremely key points. ID focuses on the order of the universe, leaving a place for God within the scope of creation, while conveniently ignoring all aspects of Darwinian theory that challenge ideas of accepted theology. They feel that a messy, unplanned view of nature (such as the materialistic evolutionists) is totally incoherent with the concept of the "almighty as an 'intelligent designer.'"[90] By ignoring sticky concepts of evolutionary theory like competition and suffering and biblical interpretation issues, they are letting the entirety of their faith rest on the idea of an orderly universe. By doing this they are greatly restricting the limits of faith as well as science. But if they were able to consider looking at the Bible from a new perspective, to look on it as sharing with us an "ultimate reality that does not depend for its plausibility upon any particular view of nature," people might finally begin to realize the shortcomings of ID.[91] The shortcomings of ID cause it to ignore natural life-processes that require the "continual *breakdown* of fixed order," presenting a very weak theology that is "ill prepared to deal with evolution."[92]

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[89]John Haught, *God After Darwin.,* 2.

[90]*Ibid.*, 50.

[91] Though Haught does not give a name for his method of biblical interpretation, it seems to closely follow the "observational" method discussed in chapter 3.

[92] John Haught, *God After Darwin,* 5.

Materialistic evolution, on the other hand, leaves no room for God, relying entirely on ideas of chance and blind selection to explain the origins of life. But according to Haught, their theory also fails to properly address the question of life, ignoring the concept of "novelty" that is a natural part of life-processes. Materialist evolutionists argue that evolution works without violating the laws of physics and chemistry, therefore nothing new is actually coming into being through evolution, it is just a reshuffling of existing particles. Haught feels that ignoring "novelty" leaves a rather weak conclusion for a very complex theory.[93]

The key points that are lacking in both materialist evolution and ID greatly weakens their validity as acceptable theories for explaining the origins of life. But Haught is optimistic for the future of science and religion. He feels that if theologians allow themselves to be open to Darwinian ideas they may finally discover Darwin's "gift to theology:"

> What Darwin does—and this is part of his "gift to theology"—is challenge religious thought to recapture the tragic aspects of divine creativity. Evolutionary science compels science to reclaim features of religious faith that are all too easily smothered by the deadening disguise of order and design...His science, when not suffocated by the stale climate of materialist metaphysics, can give considerable depth and richness to our sense of the great mystery into which our religions tempt to initiate us.[94]

The restrictive nature of ID and the failure of materialist evolutionists to describe "novelty" in life makes both of these theories weak, scientifically and theologically. These restrictions keep proponents from reaching a "deeper" and more "compelling" understanding of an evolving universe.[95]

Darwin's "gift to theology" involves gaining a deeper understanding of his theory while taking a new look at theology. Haught explains that theologians need to remember to consider the "humility" of God, which is often resisted because it appears to present a weak picture of

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[93] John Haught, *God After Darwin*, 4
[94] *Ibid., 5.*
[95] *Ibid.*, 5.

God. One of the main struggles creationists have with evolutionary theory is the competition and suffering that seems to be a defining aspect of the theory of evolution. But modern science is constantly learning that life is more about "cooperation" and interdependence" and less about "competition among species."[96] According to Haught, a change in theology is necessary to bring about change in the conflict between science and religion. As long as theology focuses on the concepts of "design" and "order," science and religion will continue to oppose each other. But Haught points out that theology can move away from this focus if they reflect on Darwin's ideas and how they are related to the Christian concept of suffering. A god who takes part in the world's struggle and pain is central to the Christian belief and evolutionary biology allows us to see this view of God. From the view of evolutionary biology, the suffering of God is not confined to the story of the crucifixion of Jesus, but he is an active participant in the suffering of all of his creation.

Haught proposes that a "theology of evolution" gives a picture of God that is not only faithful to the central teachings of the Christian faith, but intellectually fulfilling as well. Seeing God as an active participant in suffering can present a theological problem because it makes God appear weak and defenseless, but Haught explains that this is essential to the Christian belief. A god that participates in struggle and pain along with his creation is a God who is self-giving and worthy of our trust. Through divine humility He demonstrates his love for humanity by granting us free-will, allowing the world to "become itself."[97] But it is important to realize that everything that occurs in evolution is within the sphere of God's experience: "Nothing that

[96] John Haugh, *God After Darwin,* 45.
[97] *Ibid*., 55.

occurs in evolution can appropriately be understood by faith and theology as taking place outside of God's own experience."[98]

Haught's new "theology of evolution" is a unique approach at a solution. Rather than approaching it from a scientific stance like so many others before him, he is approaching it from the side of theology. I feel he accurately pegs theology as one of the main problems. Most theologians have yet to consider the changes that have arisen due to modern science and apply them to theology. Though he seems to be limiting God's role in the world a little to much, his ideas are very insightful and I feel he has presented a very promising approach to finding common round between science and religion.

John Polkinghorne

> I believe that Christian belief is possible in a scientific age because it is the search for truth, and science is one, but only one component, and in many ways quite a humble component, in that search for truth.[99]

When it comes to evaluating the conflict between science and evolution, John Polkinghorne has the best of both worlds. Once a theoretical physicist, he now spends his time as an Anglican priest and as head of one of the colleges at Cambridge University. Over the years he has done some very insightful work on finding common ground between science and religion. His approach is unique, but his overreaching goal for a future harmony between science and religion is similar to Haught's goal.

Being a scientist, he has a great appreciation for the search for truth, which is a key aspect of science. His faith has been shaped by this appreciation and he feels that the natural habit of thought found in science can be used in a search for an even deeper kind of truth about

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[98] John Haught, *God After Darwin,* 51.
[99] Polkinghorne, *Serious Talk,* 17

the world. In his book *Serious Talk* he addresses his "bottom-up" way of thinking through which he approaches both science and his own Christian faith. Rather than starting with grand, general principles to explain the world around us, "bottom-up" thinking involves analyzing a particular experience and then working to discover a phenomena that explains what is taking place in that particular experience.[100]

Polkinghorne explains that science and religion are two different disciplines, however, not wholly unconnected. Much of the conflict that exists today results from overstepping the boundaries of the two disciplines. However, he does not see science and religion as inherently conflicted, rather he sees them as "complementary."[101] In order to find a deeper truth about the universe, many different disciplines must be used together; science cannot do everything on its own. Einstein once said that "the most incomprehensible thing about the world is that it is all comprehensible" (67). Polkinghorne's idea of "rational transparency" is based on the same idea as Einstein's quote; the incredible thing about the universe is that the laws by which it is governed can be studied rationally. He feels that the universes' intelligibility could lead to the understanding that there is more to the universe than science can explain, which could lead to God: "the intellectual beauty of the order discovered by science is consistent with the physical world's having behind it the mind of the divine creator." This idea of a world that has the mind of a divine creator behind it, fine-tuning the laws of the universe is also known as the "anthropic principle."[102]

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[100] Polkinghorne, *Serious Talk,* vii.

[101] *Ibid.*, 1.

[102] *Ibid.*, viii and 38. This may seem similar to the theory of ID but it is not. As explained in chapter 2, one of the main problems with ID is that it claims to be backed by scientific evidence that refutes the theory of evolution. While Polkinghorne's theory allows for the possibility of a designer/creator, he is not putting limitations on science by trying to find proof of where God is present in creation. Polkinghorne feels that God has a role in creation that includes the evidence we have found in support of evolution.

Polkinghorne goes farther to explain that, not only can God's hand be seen in the intelligibility of the universe, but he is also a personal God that is still active in the universe. This issue is vital to the conflict between Christianity and science because the Christian belief is not deistic; rather it asserts that God is still active in the world today. Many people have problems understanding how an active God can exist in a universe guided by constant laws. Polkinghorne stresses that while God cannot work against the laws of nature because that would be to work against himself, it is possible that he works within the grain of nature. "God wills only what is in accordance with his nature." The Christian god is also a god of love. Because of God's loving nature, Polkinghorne feels that God is respectful of the "independence" and "integrity" of his creation and therefore would not choose to overrule His creation by magic.[103]

Some people argue that God is active at the subatomic level, but Polkinghorne rejects this idea. Quantum mechanics is a branch of science that studies the behavior of some of the smallest known units of matter, such as quarks and gluons. Scientists know how to use quantum mechanics and have gained a great deal of information from the theory, but they do not understand the theory (18). The problem is in measurement: scientists can measure the movement of electrons, but they get an ambiguous answer, "either here or there." There are people who believe that this problem in measurement could be because God is active at this level of matter making it impossible to determine the position of the particles. They compare it to "butterfly effect"[104] but at the quantum level where tiny changes in the movement of the subatomic particles causes a snowball effect, ultimately affecting the lives of humans.

Polkinghorne believes that God interacts with creation, but he is not so bold as to say where. He does not feel that quantum mechanics is the place to look for God's activity; he

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[103] Polkinghorne, *Serious Talk,* 77.

[104] The "'butterfly effect:' a butterfly stirring the air with its wings in the African jungle today will have consequences for the storm systems over Boston within 3 weeks."

doubts that God would mess around at the subatomic level (79). Instead, he feels that God's action will always be hidden and fears that trying to determine exactly how God works through his creation sets up "god of the gaps" theology. He postulates that God works with his creation through what he calls "information input." This is what Christians are referring to when they speak about God's guiding presence and his interaction with creation through prayer, miracles, and the like (84).

For Polkinghorne, allowing for the independence of science and religion is important; but recognizing that they can still work together through dialogue to enrich our understanding of God and the world is essential. He addresses this in his book *Science and Creation:*

> Religion, if it is to take seriously its claim that the world is the creation of God, must be humble enough to learn from science what that world is actually like. The dialogue between them can only be mutually enriching.[105]

Although some people may not be content with Polkinghorne's view because he does not actually state how God interacts with his creation, I feel this ambiguity was wise on Polkinghorne's part. By keeping the source of "information input" open, he is succeeding where the creationist theory of ID is failing; he provides room for science to continue to search for answers without threatening to limit God's role in the world.

[105] Polkinghorne, *Science and Creation;* 75.

Chapter 5 Resolving the Conflict

Introduction

The evidence presented in this thesis proves the existence of a conflict between evolution and creation. But so what? Why bother arguing about an issue that seems impossible to resolve? Can't people just believe what they want to believe? Choosing to ignore the conflict seems on the surface to be the easiest way to deal with the problem between evolution and creation, but ignoring the conflict actually creates more problems. I feel that if the broader public continues to pay little attention to resolving the conflict between evolution and creation, the Christian faith as a whole will eventually suffer as a result. This claim may sound a little extreme, but hear me out. In order to understand my feeling of urgency to find a resolution, one must consider evolution in a broader picture. There are many who feel that there are bigger issues than evolution plaguing the church: sexuality, abortion, women's rights, etc. All of these issues are important, but few people realize that these all of these issues are connected with the evolution conflict; they all are partially a result of biblical interpretation. The conflict is not merely about science and creation: it is a cultural, political, and religious conflict affecting nearly everyone.

The political effects of the conflict are obvious in the battle over "equal time" in schools. But I think many Christians fail to understand the severity of the problem with "equal time." As argued in Chapter 2, the creationist approaches at science are severely lacking in real scientific evidence, often spreading false information. While experts in the field of science are aware of the problems with ID and creation science, most people have little experience in science beyond the high school level and are unaware of the problems. The media attention focused on this issue since the Scopes trial in 1925 and the strong opposition raised by a couple of influential creationists has preoccupied many people, adding fuel to the creationist campaign, creating more problems for Christian evolutionists. Promoting "equal time" in the school systems suggests a

contradiction between science and Christianity that is not necessary. This unnecessary contradiction creates confusion, especially in the impressionable minds of young people who are affected the most by this conflict.

For many children learning about the dinosaurs creates a sense of awe and wonder. Seeing the giant skeletons of animals as tall as houses creates an impression on their young minds and leads to many questions: "Where did they come from? Are they still alive? Grandpa, did you ever see a real live dinosaur?" In school they learn about the age of the dinosaurs and their extinction; they study drawings of the Velociraptor and Tyrannosaurus Rex and touch fossilized bones and footprints. But after the end of the school week, many kids sit in Sunday school and read stories from the Old Testament. They learn about creation and Adam and Eve, Cain and Abel, Noah's Ark, the tower of Babel, and other biblical stories. Even though they are young, kids are bright and they often realize that the stories they are taught in Sunday school do not always agree with the science they learn in school. One of my most vivid memories of Sunday school was coming to this realization and asking my Sunday school teachers where the dinosaurs fit into the Bible. She could not give me an answer, leaving me puzzled. As I grew older I began inquiring about the age of the earth rather than the existence of the dinosaurs. I asked why the rock layers at places like the Grand Canyon suggest the earth is millions, even billions of years old if the genealogies of Genesis seem to say it is only about 6,000 years old. This time I received a reply, my teacher said "Don't you think that since God is all powerful he could have created the world the way it is, making it seem as if it is older than it really is?" The answer was not as satisfying as I had hoped it would be. The God I knew did not seem like the type of God to fool with his creation for sport.

My faith has always been a major part of my life but I have always struggled with the contradictions that exist between the Bible and the facts of science. The natural world has always fascinated me; but the more I learned about science, the less I understood how it was compatible with my faith; this became especially hard when I began to realize the theory of evolution has no place for Adam and Eve. Had my own faith been any weaker it would have been easier to give up on my faith entirely, adopting an agnostic evolution view. But the strength of my faith, along with my fascination with science caused me to dig deeper into the conflict instead.

The uncertainty caused by contradictions between evolution and Christianity is what creationists fear the most. However, the creationists themselves have enhanced these contradictions, producing a dangerous tension between science and the Christian faith. Through conversations with colleagues and data such as presented in Figure 1, a correlation can be observed between atheist beliefs and acceptance of evolution. While there could be a couple different explanations for this correlation, the tension between science and religion definitely plays a significant role. While the theory of evolution does not itself promote atheism, extremists like Richard Dawkins and Henry Morris assert that it does, and any arguments made contrary to their beliefs probably will probably have little effect on their opinions. The people that are most affected by this tension are those caught in the middle of these two extremes. It is here, torn between the world of faith and the world of science, that the tension between the conflicting views becomes an issue.

Extremist arguments can make it seem necessary to choose one side or the other. The cultural evils presented in the "evolution tree"[106] is a perfect example of hostile creationist propaganda that may persuade a person to deny evolution. For people who are a little more

[106] For more information see figure 2 and explanation on page 19.

sympathetic to faith than science, a diagram like the evolution tree may entice them away from evolutionary beliefs because it presents evolution as morally evil. However, it can also have the opposite effect: a person with doubts about their faith could be turned away from Christianity because of the ridiculousness of narrow-minded creationist claims. These people have trouble accepting the creationist claim that scientific evidence supporting evolution is flawed and may have doubts about placing all of their faith in the supernatural when it contradicts rational thought. Darwin himself may have fallen into this category, slowly surrendering his faith to science. His inability to understand why a merciful God would allow for so much suffering in the world could have been one contradiction he could not overcome. For Darwin and many like him, the exploratory nature of science wins out and their faith becomes lost somewhere along the way.

For people uninterested in science, they should be aware that the conflict over evolution affects many issues that appear unrelated on the surface, such as abortion, sexuality, and women's rights. The Christian conservatives that support creationism tend to be hostile towards liberal issues like homosexuals in the church. Much of this hostility is due to their literal method of biblical interpretation. The line "God made Adam and Eve, not Adam and *Steve*" is sometimes used as a humorous saying among conservatives when addressing the issue of homosexuality. They assert that the Bible is against homosexuality, beginning with the very first story in Genesis of the creation of man and woman. This issue of homosexuality, as well as women in the clergy, and abortion are all issues related to the same biblical interpretation problem that is plaguing the creation vs. evolution debate. Approaching biblical interpretation from the direction of science could help find a method of interpretation that is most faithful to the central message of the text.

Accomplishing this task could have a significant effect on all the issues affected by methods of biblical interpretation that have been going on for decades already.

Techniques

Some efforts have been made at resolving the conflict between evolution and creation; however, the hype generated by the recent ID movement and the media attention dedicated to the conflict is proof that efforts have yet to be truly successful. Many things need to happen in order to resolve a conflict as large as the one between creation and evolution. It is a complex argument with many passionate opinions on either side; but if clergy members, Christian evolutionists, and others devoted to finding a solution all work together, I believe in time, a resolution can be achieved.

As discussed in Chapter 3, the Catholic, Episcopal, and ELCA denominations have all made steps towards resolution, but there is much more that can still be done. The official statements provided by the Catholics and Episcopalians are a good start; they offer guidance to members of the church who are interested enough to search for the documents. Since the issue of creation and evolution is so closely tied with the Christian faith, church bodies should recommend creating committees composed of biblical theologians and Christian evolutionists designated to the study of the conflict. Once enough information has been collected, committees can publish a statement similar to the Episcopalian's "Catechism for Creation." Statements do not need to come to the same conclusion as the "Catechism for Creation." Yet, whatever conclusion they reach must be supported by solid reasoning, and should reflect the true nature of the faith while also attending to the facts of modern science.

Denominational statements on science and religion have two main benefits. First, they offer direction to pastors and churches who wish to address the conflict in their churches. And

second, publishing the statement in theological journals and on denominational websites helps omit much of the confusion among people interested in leaning about the tenets of the different denominations. One other thing the committee could do to help address the issue at hand is to provide a list of factual sources on he issue such as: authors, books, journals, websites, videos, etc. This would assist inquiring members of the faith community in finding reliable sources rather than leaving them to become lost in all of the junk currently available on the issue.

Once a statement has been created, it is the job of the individual churches to educate their members. Though science can be tactfully alluded to in a sermon, the sermon is not an appropriate setting for lectures on science and evolution. But, with the help of church members, there are still many actions a pastor can take outside of the pulpit. These actions include, facilitating classes, group discussions, visiting speakers and trips to places like science museums and faith and science conferences. Providing these services can help raise interest and awareness among church members.

Pastors can also help by providing references to factual sources such as books, authors, journals, videos, and websites on science and religion for congregation members (this is where a list of resources from a denominational committee would be of great use). Many churches have small libraries for their members' use; by adding a small section of material dealing with faith and science, church libraries could also act as a great resource for congregation members. But it is important to keep in mind that even though denominational statements have the potential to be very influential, they are only effective if church leaders take the initiative to inform their congregation. Without cooperation from pastors and others in power within the church, denominational statements will have little or no effect.

Introducing young people to the conflict is an essential part of raising awareness. By having discussions dealing with issues of the church and society in Sunday school, confirmation classes, youth groups, etc., the church could help prepare youth for the questions that naturally arise while living in a secular society. This is especially important because young people are the ones most affected by this conflict. They see it in school and may have questions that they feel are too silly to bring up on their own. The creation stories in Genesis are very important to the central message of the Christian faith and they should continue to be taught in church and Sunday school; however, I think children should eventually learn that it is not necessary to take these stories literally. It is difficult to say how and when Sunday school teachers should address the issue; it cannot be done at too young an age because kids are not intellectually prepared to understand the issue. During the early teens is probably a good time to begin to introduce the issue, but if children ask questions about it before it is addressed in class, teachers should address the questions honestly, trying to phrase the answer in a way the children will understand. And if teachers do not know how to answer the questions, they should at least be able to direct the child to a person who might be able to provide an answer to their question. This is where we are facing a major problem. There is a definite lack in reliable resources available on this issue. Very few people are knowledgeable enough in science to give an accurate presentation of the theory of evolution, much less explain it in the context of religious faith. There are a some books available by people like Haught and Polkinghorne, but these may be too advanced for many people to understand and would not be suitable for young people. Unfortunately, school science teachers are not even a good reference. Even though they may be very knowledgeable in scientific matters, their own personal beliefs may heavily bias their answers. They are also limited to what they can say because of the restrictions placed on teaching religion in the public

school systems. Reliable resources on matters of science and religion need to be easily available if we are to be able to properly inform children about the issue to help eliminate many of the issues that currently exist.

While denominational statements help give congregations direction, they are not nearly enough to solve the conflict, which the current condition of the conflict makes apparent. Creation science and ID are amazing phenomena. Neither is affiliated with a denomination, but both have spread like wildfire throughout the Christian community in the United States. The beauty of their growth is that they have not restricted themselves by denominational lines, allowing themselves to gather supporters from a larger and more diverse crowd. If Christian evolutionists learn to utilize some of the same techniques used by creationist movements, they have the potential to have an equal or even greater influence on the Christian community.

The key to the success of the creationist movements lies in their effective use of networking. If Christian evolutionists took a stand and worked together, they could achieve great things. As of now, there are brilliant individuals such as Haught, Polkinghorne, and Miller who are all searching for a solution to this conflict, but there are many more who remain silent. If these great minds were to pool their knowledge and expertise, they could begin a Christian evolutionist movement. This would allow Christian evolutionists to inform the general public about the true nature of the creationist and evolutionary sciences.

A couple key tactics can be used in networking to spread ideas and gain supporters. One main tactic lies in producing information to the public. If Christian evolutionists are to be successful in showing the public there is unnecessary conflict between science and religion, they need to prove it. They need to produce books, news and magazine articles, TV and video programs, lectures, discussion groups, museum tours, etc. presented in a way lay people can

understand. The problem is not in lack of sources—many good books have been written on the subject of science and religion—the problem is in lack of information that can be understood by a layperson.

Spreading public awareness is also a key part of the process. Even if there are many sources available on the subject of creation and evolution, they cannot be effective if nobody is aware of their existence. All it takes is a couple of charismatic personalities to take the initiative backed by a group of passionate supporters. Movements throughout history have been successful largely due to their charismatic leaders; Martin Luther King and Adolf Hitler are two, radically different examples of leaders who possessed this charismatic talent. The creationist movements also owe much of their success to the rhetorical skills of people like Bryan and Morris. If more Christian evolutionists like Haught would be willing to enter into the public eye and present the conflict in a simple yet eloquent fashion, great things could be accomplished. Setting up conferences and information sessions, speaking at schools, churches, and creating websites and online discussion boards would provide ways for Christian evolutionists to become involved with the public, giving them the real facts about creationist movements and the theory of evolution. Bringing Christian evolutionist concerns out into the open during court could also have a big impact. Coordinating groups of people who are willing to publicly oppose creationist attempts at equal time would help bring more publicity to Christian evolutionist concerns. Writing editorials in city newspapers, picketing at court trials, and convincing news stations to do stories covering the issue all are different methods that can be tried to bring about this publicity. Making the conflict a public concern will help bring together like-minded individuals, strengthening the opposition to creationist tactics, and will help bring an end to the unnecessary conflict.

Some of these techniques are new, but most have been used successfully in various other movements and could have equal success in bringing about reconciliation between science and religion; but reconciliation will not happen overnight. Scientific concepts can be difficult to grasp, and it may take a while for people to realize that the information preached by creationists is not good science. Creationist ideas are familiar to many and provide an easy answer for the unknown. In order for Christian evolutionists to be successful they need to turn that around, show lay people that science can provide answers to many of these questions about the natural world while still staying true to the Christian faith.

Creating a large group of followers dedicated to reducing conflict will hopefully lead to dialogue between Christian evolutionists and creationists, and perhaps even atheist evolutionists. Conflict will continue to exist as long as these groups oppose each other, but dialogue may help both parties reach a better understanding of each other's beliefs. However, for true progress to be made creationists must be willing to adopt a new method of scriptural interpretation, and atheist evolutionists must consider the possibility that evolution does not prove that everything is a result of mere chance.

While putting an end to the conflict would be an ideal solution to the problem, it is wishful thinking. There will always be extremists on both sides of the conflict that will never be swayed. But if through dialogue we are able to show the world that the majority of Christians are not narrow-minded, as they are often perceived in scientific culture, we will achieve a great feat. Perhaps then, people will finally realize that Christians are able to consider their faith within the broader culture of science, using evolution as a tool to gain a greater understanding of God and faith. Bringing contradiction to a manageable level will benefit both people torn between science and faith as well as people who look solely to science as a source for truth.

Those who once felt torn between science and faith will no longer feel pressured to choose, leaving more time to reflect on how God fits within scientific culture. Through this reflection, they will have the opportunity to witness to those who look to science as the only source of truth, demonstrating that there is a certain truth found within religious conviction that cannot be learned through science. By demonstrating our ability as Christians to be open to the world around us, we will truly be able to "be a light unto the world" as Matthew 5:14 calls us to be.

Resolution

Finding a resolution may sound as if all problems between science and religion will be solved and the two disciplines will be able to coexist with no issues. For this conflict, a resolution will not be the final solution to ending all conflict, the issue runs too deep. Finding a resolution to the conflict will instead involve reducing the level of conflict to a manageable level. While a resolution will not come easily, it is possible, and when it happens I believe the Christian faith will grow stronger as a result.

Religious worship has existed since the beginning of history and its continued existence proves that it is a vital aspect of human culture. But religion is not static, it changes while culture evolves. Religion serves many purposes; it teaches ethics and morals, it helps people search for a deeper meaning in life, it offers reassurance and hope in life after death, and it is often used to explain the unexplainable. Most importantly religious convictions offer a truth that cannot be found anywhere else. But what happens when things that had once been attributed to religion in the past can be explained without a supernatural power? We find ourselves at this crossroad today; science is beginning to explore new depths and the role of religion undergoing a period of transition. People are beginning to realize that religion is not only about where we come from, but it is also about where we are going from here.

Since ancient times the natural world has been a mystery. Early civilizations thought that the earth was flat; they did not know why the sun rises in the east and sets in the west everyday; or why the stars are not fixed points, rather they appear to move across the night sky. Supernatural explanations were used to explain these mysteries of nature; and up until the advent of science, the various creation accounts found in religious texts were the only sources of knowledge we possessed about the origins of the universe. But with the advance of technology the role of religion has changed and it is no longer necessary for explaining many of the mysteries of nature that are now explored through science.

Once Christians begin to accept the validity of science and evolutionary theory, they may begin to appreciate their faith at a whole new level. This is what Haught is trying to accomplish with his "theology of evolution. Scientists are filled with wonder by the complexity of the earth around them, and it is inspiring to wonder how it all came to be. The theory of evolution is very complex but the evidence that has been found to support it amazes scientists. Even more amazing is to contemplate the idea that the world is not just a mistake, rather it is the work of a loving creator who has given us the intellectual capacity to study His creation. I find it much more comforting to think God intends for us to study his creation, trying to understand how it evolved, to help us grow in our faith as we learn to appreciate the complexities of our universe and His presence within it through scientific study. Some creationists seem to think studying the origins of the universe is pointless because the Bible tells us all we need to know about the world, but I think that God never would have given us the intelligence and curiosity humans possess if He did not intend for humans to question and study the world around them.

Dismissing creationist ideas also helps eliminate theological problems with creationist theories. Many contradictions arise as a result of using a literal interpretation: the two creation

stories in Genesis and the holiness code in Leviticus that is no longer followed are both examples. By adapting an observational[107] reading of Genesis these interpretative problems will no longer exist. The "god of the gaps" phenomena used in many creationist theories is also poor theology because it attributes things that cannot be understood to God, until new scientific evidence is presented, and then God is pushed aside. All of these theological problems associated with creationist theories make Christianity appear contradictory and weak, pushing away followers. But these problems will no longer cause doubt in Christian faith if an observational interpretation of the Bible is accepted. People will no longer feel torn between the things they learn and experience in everyday life and the things the Bible tells them, leaving them to grow in their faith by observing God's role in a changing world.

Eliminating creationism's monopoly on the discussion of science and religion also helps reduce the tension between science and religion, bringing it to a manageable level. There will always be a small amount of tension between the two disciplines, but the tension that exists now is unnecessary. Reaching a resolution will allow the church and science to focus on more important issues, rather than wasting time and effort arguing over a pointless problem. And those who find themselves torn between scientific fact and religious faith will no longer feel the need to choose one over the other.

George Coyne, a physicist and Catholic priest at the Vatican said in an interview, "Nothing we learn about the universe through science threatens our faith. It only enriches it."[108] Learning to appreciate the complexities of creation through scientific study is seeing God in a whole new light. While the unknowns in scientific theories are often viewed as weaknesses, faith possesses a truth that is incomprehensible in scientific culture. It is in these unknowns

[107] See page 34 for an explanation of "observational cosmology."
[108] Margaret Wertheim, "The Pope's Astrophysicist," *Wired* (December, 2002).

where faith draws its strength. Questions push us to seek for the answers. Through these questions, a solid foundation is built that will be able to withstand much more resistance than blind faith. Even though we may never be able to fully understand how and where God is active in the world around us, we can embrace the gift of scientific knowledge he has given us to study and appreciate his creation. Finding a resolution will bring a new harmony between science and religion, and by extension, a stronger Christian faith that will be able to withstand the paltry disputes of the present and spend more time on the really important issues found in an evolving modern society.

Appendix:

Figure 1. Natural Scientists on God

Scientists were asked to answer this questions concerning belief in God:

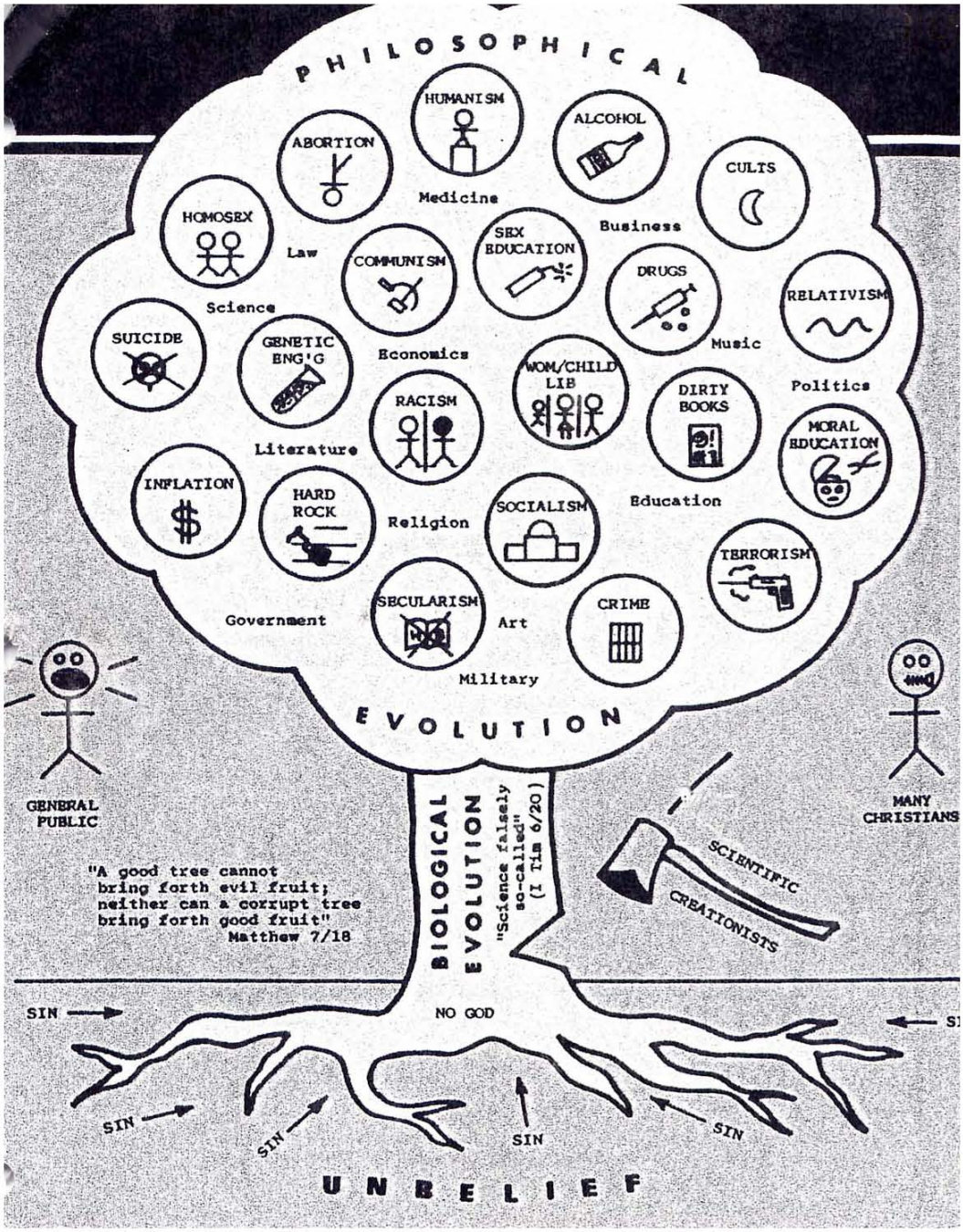
"I believe in a God in intellectual and affective communication with mankind, i.e., a God to whom one may pray in expectation of receiving an answer. By "answer" I do not mean the subjective, psychological effect of prayer."

		Belief	Disbelief	Agnostic
RANKING SCIENTISTS				
1914				
	Total	41.8	41.5	16.7
	Biologists	30.5		
	Physicists	43.9		
1996				
	Total	39.6	45.5	14.9
	Biologists	42.5	43.5	14
	Physicists/ Astronomers	29.1	53.9	17
	Mathematicians	43.6	41.6	14.8
GREATER SCIENTISTS				
1914				
	Total	27.7	52.7	20.9
1933				
	Total	15	68	17
NATIONAL ACADEMY OF SCIENCES				
1998				
	Total	7.1	72.7	20.2
	Biologists	5.5	65.3	29.1
	Physicists/ Astronomers	7.47	80.3	12.1
	Mathematicians	14.3	71.4	14.2

A "ranking scientist " is the author's term for those qualified to be listed in the *Americas Men of Science,* used by Leuba for his 1914 and 1933 surveys, and *America's Men and Women of Science,* used by Larson and Witham in the 1996 survey. A "greater scientist" is Leuba's term for those judged eminent and given a star by their name in the *America's Men of Science*, which ended the starring practice in 1941. In this comparison, *National Academy of Science* members are considered "greater scientists."

Table taken from L. Witham, *Where Darwin Meets the Bible: creationists and evolutionists in America,* (Oxford: Oxford University Press).

Figure 2. "The Evolution Tree"



Taken from drawing on the cover of, C.P. Toumey, God's Own Scientists (New Brunswick, NJ: Rutgers University Press).

Bibliography

"Book is Focus of More Debate" Excerpt from memorandum opinion issued ny Judge E. Jones in *Kitzmiller v. Dover,* December, 2005.

"Catechism of Creation: Creation and Science" *The Episcopal Church*. http://www.episcopalchurch.org/19021_58398_ENG_HTM.htm (Accessed March 18 2006).

"The Institute for Creation Research." *ICR website*. www.icr.org

"The Interpretation of the Bible in the Church." Presented by the Pontifical Biblical Commission to Pope John Paul II on April 23, 1993. (As presented in *Origins*, January 6, 1994) http://www.bible-researcher.com/catholic-interpretation.html#Introduction.

"The Interpretation of the Bible in the Church" Presented by the Pontifical Biblical Commission to Pope John Paul II on April 23, 1993 (as published in *Origins*, January 6, 1994). http://www.bible-researcher.com/catholic-interpretation.html#Introduction.

"The Interpretation of the Bible in the Church" Presented by the Pontifical Biblical Commission to Pope John Paul II on April 23, 1993 (as published in *Origins*, January 6, 1994). http://www.bible-researcher.com/catholic-interpretation.html#Introduction.

"Superposition." *Geology.com website.* www.geology.com.

Alder, Jerry "Evolution of a Scientist" *Newsweek.* 28 November 2005. http://web.lexis-nexis.com.

Alters, Brian and Sandra. *Defending Evolution in the Classroom: A guide to the creation/evolution controversy.* Sudbury: Jones and Bartlett Publishers, 2001.

Baker, Catherine. "Time to abandon Darwin? The Challenge from Intelligent Design" (May 22, 2003) http://www.aaas.org/spp/dser/seminar/04222003abandondarwinsummary.pdf

Behe, Michael. *Darwin's Black Box: the biochemical challenge to evolution.* New York: The Free Press, 1996.

Behe, Michael J. "Intelligent Design Theory as a Tool for Analyzing Biochemical Systems." Edited by William Dembski. *Mere Creation.* Downers Grove, IL: InterVarsity Press, 1998.

The Book of Common Prayer, 1979. New York: Church Publishing, 1986.

Borgeson, Phina "New 'Catechism of Creation published by Committee on Science, Technology, and Faith." March 28, 2005 < http://www.episcopalchurch.org/3577_60521_ENG_HTM.htm> (18 March 2006)

Brooks, Deborah Jordan, *Creation-Evolution Poll.* Gallup News Service (March 5, 2001), http://www.asa3.org/archive/asa/200103/0031.html

Darwin, Charles. *The Origin of Species by Means of Natural Selection; or the preservation of favored races in the struggle for life and the descent of man and selection is relation to sex.* New York: Modern Library, 1936.

Dawkins, Richard. "Is Science a Religion?"(Accessed January 26, 2006). http://www.icr.org/humnaist/articles/dawkins.html.

Dawkins, Richard. *The Blind Watchmaker.* New York: W.W. Norton & Company, Inc.,1996.

Ehisen, Rich "Evolution debate nothing new for states" *State Net Capitol Journal.* (Volume XIII, No. 32; 26 September 2005). http://web.lexis-nexis.com.

Eldredge, Niles. *The Triumph of Evolution and the failure of creationism.* New York: Holt, 2001.

Excerpts from the Memorandum Opinion issued on Dec. 20, 2005, by Judge John E. Jones in *Kitzmiller v. Dover.*

Flank, Lenny Jr. "The Paluxy Man Prints" (1995), http://www.geocities.com/capecanaveral/hangar/2437/paluxy.htm.

Forrest, Barbara. "The Wedge at Work: How Intelligent Design Creationism is Wedging its Way into the Cultural and Academic Mainstream." In *Intelligent Design Creationism and its Critics: Philosophical, theological, and Scientific Perspectives.* Edited by R.T. Pennock. Cambridge, MA: The MIT Press, 2001.

Godfrey, S. and C. Smith, *Paradigms on Pilgrimage: Creationism, Paleontology, and Biblical Interpretation.* Toronto: Clements Publishing, 2005.

Grenlen, Jay. "Witness to Prosecution," *World,* November 30, 1996. http://www.worldmag.com/articles/374.

Ham, Ken. *Why Won't They Listen*? Answers in Genesis, 2005, http://www.answersingenesis.org.

Haught, John. *God After Darwin: a Theology of Evolution*. Boulder: Westview Press, 2000.

Hawking, Stephen. A Brief History of Time. New York: Bantum Books, 1998.

Hedlund, Patric. "False Information on Intelligent Design Course Given to Board." *The Mountain Enterprise,* 30 December 2005. http://www.mountainenterprise.com/ (12 March 2006).

Hedlund, Patric. "Families Sue: Injunction Filed to Stop Intelligent Design Class at Frazier Mountain High School." (13 Jan 2006)

Hedlund, Patric. "Washington D.C. Legal Team for Separation of Church and State May Seek Injunction" (6 Jan 2006)

Hedlund, Patric. "Intelligent Design Syllabus Spurs School Board Into Special Holiday Meeting" *The Mountain Enterprise,* 6 Jan 2006. http://www.mountainenterprise.com/

Hedlund, Patric. "Suit Settled: District Promises 'No Creationism Classes'" (20 Jan 2006)

Hunt, "Transitional Vertebrate Fossils FAQ Part 1A"(March 17, 1997). http://www.talkorigins.org/faqs/faq-transitional/part1a.html.

Johnson, Phillip. "The Thinking Problem in HIV-Science." (December 16, 1994), http://www.virusmyth.net/aids/data/pjthinking.htm.

Johnson, Philip. *Defeating Darwinism by Opening Minds.* Downers Grove, IL: Intervarsity Press, 1997.

The Kolbe Center for the Study of Creation: Defending Genesis from a Traditional Catholic Perspective, March 22, 2006.http://www.kolbecenter.org/.

Larson, E.J. *Summer for the Gods.* Cambridge, MA: Harvard University Press, 1997.

Levine, Harold L. *The Earth Through Time.* Hoboken, NJ: John Wiley and Sons, Inc., 2003.

Livingstone, David N., *Darwin's Forgotten Defenders: The Encounter between Evangelical Theology and Evolutionary Thought.* Edinburgh: Ersdmans and Scottish Academic Press Ltd., 1987.

Luskin, Casey. "All Sides of the Issue Belong in the Classroom." (September 28, 2005), http://www.philly.com/mld/philly/12759702.htm.

MacPhearson, Kitta "Darwin, too, was Hesitant about his Theory," *The Star-Ledger,* 2005. http://web.lexis-nexis.com.

Maldanado, Joseph. "Book is Focus of More Debate." York Daily Record, June 15, 2004.

Maldonado, Joseph. "Dover Curriculum Move Likely a First" *York Daily Record*, October 20, 2004.

Meyer, Stephen C. "What is Intelligent Design?" *National Post of Canada,* December 1, 2005.

Miller, Kenneth. Excerpt from transcript from part III of American Enterprise Institue Forum, "Science Wars," October 21, 2005

Miller, Kenneth. *Finding Darwin's God.* New York: HarperCollins Publishers, Inc., 1999.

Miller, Kenneth. "The Flaw in the Mousetrap: Intelligent Design Fails the Biochemistry Test." *Natural History Magazine* (April 2002), http://www.actionbioscience.org/evolution/nhmag.html.

Moore, John A. *From Genesis to Genetics: The Case of Evolution and Creationism.* Berkley: University of California Press, 2002.

Morris, Henry. *Scientific Creationism.* San Diego, CA: Creation-Life publishers, 1974.

Paley, William. *Natural Theology*. Landisville, PE: Coachwhip Publications, 2005.

Peterson, Gregory R.. *Minding God: Theology and the Cognitive Sciences.* Minneapolis: Fortress Press, 2003.

Pigliucci, Massimo. *Denying Evolution: Creationism, Scientism, and the Nature of Science.* Sunderland: Sinauer Associates, 2002.

Pope Paul VI. *Dei Verbum: Dogmatic Constitution on Divine Revelation, second Vatican council* (November 18, 1965).

Pope John Paul II. "Truth Cannot Contradict Truth: Address to the Pontifical Academy of Sciences." (October 22, 1996), http://www.newadvent.org/library/docs_jp02tc.htm.

Preus, J.A.O., "A Statement of Scriptural and Confessional Principles," USA: The Lutheran Church Missouri Synod, 1970's.

Provine, William B."Darwinism: Science or Naturalistic Philosophy?" (Volume 16:1, April 30, 1994), http://www.arn.org/docs/orpages/or161/161main.htm.

Ruse, Michael. *Can a Darwinian be a Christian?: the Relationship between Science and Religion.* Cambridge: Cambridge University Press, 2001.

Ruse, Michael. *The Darwinian Revolution.* Chicago: The University of Chicago Press, 1979.

Sheahen, Laura. "The Problem with God: Interview with Richard Dawkins." (October 2005), http://beliefnet.com/story/178/story_17889.html.

Toumey, C.P. *God's Own Scientists*. New Brunswick, NJ: Rutgers University Press.

Shermer, Michael. *Why People Do Weird Things: Pseudoscience, Superstition, and Other Confusions of Our Time.* New York: WH Freeman, 1997.

Warfield, B.B. *Evolution, Science, and Scripture: Selected Writings.* Edited by Mark A. Noll and David N. Livingstone. Grand Rapids: Baker Books, 2000.

Wertheim, Margaret. "The Pope's Astrophysicist." *Wired.* Science and Religion Issue. December 2002.

Wilford, John N. "Fossil Called Missing Link from Sea to Land Animals." *The New York Times*. (April 6, 2006).

Williams, Robert Charles. "Scientific Creationism: An Exegesis for a Religious Doctrine." *American Anthropologist,* New Series, Vol. 85, No. 1 (March., 1983), 92-102.

Witham, Larry. *Where Darwin Meets the Bible: Creationists and Evolutionists in America.* Oxford: Oxford University Press, 2002.

Wordan, Amy. "First Day for Trial on 'Intelligent Design,'" (September 27, 2005), http://www.philly.com/mld/philly/entertainment/family_guide/127494