Determining the Validity of Creationism and Evolution and Their Ability to Co-Exist

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The topic of creation and evolution has been on my mind since last semester. A classmate in my “Technology and Culture” class, recognizing that I was both a Christian and a biologist, asked me whether I believed in evolution and how I could relate it to my Christian beliefs. I told him that I really hadn’t thought about it too much. I had never thought of religion and science together in the same context. This paper will look at the validity of both creation and evolution and examine whether they can interact with each other. Besides doing my own research, I have chosen to interview four people extensively involved in either Christianity or biology. I specifically picked interviewees who strongly supported either evolution or creation to get both sides of the issue. Two of the people were from United Christian Fellowship (UCF): Andrew Larratt-Smith, leader of UCF, and Ricardo Dawkins, UCF small group member. I also interviewed two biologists: Paul Matsudaira, MIT Biology professor, and Bettina Bauer, a post-doctoral fellow in the HST department. Paul considers his religious beliefs in between agnosticism and Catholic. He was baptized in the Roman Catholic church but has not thought about God extensively. Bettina is neither religious nor anti-religious. She says that if God really exists, it would not change her life. From these interviews, I hoped to gain a better understanding of creation and evolution and examine whether they can co-exist.

Creationism is based on the belief that God is the intelligent Designer who created our universe and the natural things in it. It is derived from the two stories of Genesis. The first of the stories (Genesis 1:1-2:3) states that God created the heavens and the earth, light, water, vegetation, animals, and then man in the image of him. In the second account (2:4-2:9), God made the heavens and the earth, water, man from the dust, and then vegeta-
tion and animals. Clearly these two accounts differ from each other in terms of order. The response I received from creationists (Andrew) was that the Bible must not always be taken literally. Genesis as a book is highly symbolic and was written to show God’s order and purpose in the world. The first account is poetic and chronological, while the second account focuses on creating humans and giving them authority over creation. This view would resolve the conflict between the two stories. However, more conservative creationists (Ricardo) believe that the Bible must be taken literally. To explain the difference of the two stories, they reason that the two accounts are indeed the same in order. Genesis 2:19 says, “the Lord God had formed out of the ground all the beasts of the field and all the birds of the air.” Although the creation of man from the dust had been mentioned before this verse, it does not imply that birds were created after man, because God had formed the beasts and the birds. Thus both Genesis creation stories do not necessarily contradict each other.

Those who do not support creationism (Paul and Bettina) do not see any basis for accepting it. As scientists, they need evidence and sufficient proof to believe such a theory. On the other hand, both Paul and Bettina are not vehemently opposed to creationism. They see the Bible as a contemporary publication, written centuries after the fact, that tries to resolve self, being, and spirit, and explain things that people do not understand. Creationism will still be strong for many years to come because science cannot and may never explain creation. They simply ask to allow biology and science to take its own course.
To determine the validity of creationism, one must look back at its roots and trace it through history. In the Middle Ages, Thomas Aquinas was the most systematic and influential author of science and religion. He believed that the biblical God was the intelligent Designer and First Cause of all effects. Moreover, Aquinas portrayed God as the continuing ruler of nature, one who gives humanity rule over nature. The medieval world view of Aquinas was drastically transformed by Galileo Galilei, often called the father of modern science. Galileo combined mathematical equations with experimentation to study the motion of objects. By using science to study how things move, and seeing scripture as relevant only to man’s salvation, Galileo established the separation between science and religion that exists today. God’s role was gradually relegated to First Cause, with nature a chain of efficient causes. However, Galileo’s view is still in agreement with creationism because he sees God as the Designer. It is not until the Age of Reason in the 18th century that creationism becomes seriously questioned. Pierre Laplace expressed the view of epistemological reductionism in which all phenomena will be ultimately explained by physical laws. Nature was a self-sufficient and impersonal mechanism. Although the Romantic response to the Age of Reason supported creationism, many of the movements in the 18th century favored scientific empiricism and religious agnosticism. Philosophers David Hume and Immanuel Kant rejected the idea of God as creator and reaffirmed Galileo’s division of science and religion. Hume believed that the presence of God could not be proved or disproved, while Kant simply saw God as a postulate of the moral order.
Thus, we witness a shift in creationism from widespread acceptance to skepticism. Does this change indicate that creationism has been losing support and henceforth validity? The scientists that I interviewed stated that as society learned more about how processes work, its reasoning powers became more sophisticated. People saw that the basis for the existence of God was seriously flawed. They began to question why God was the creator of the universe. The skepticism was a reaction to how dogmatic religions have portrayed reasons for why there should be a God. The Christians acknowledged that the growth of science has led to questions about the beginning of life. Andrew stated that many benefits have arisen from science, but that the nature of science leads scientists to search for answers outside of their realm and in religion.

Moreover, according to Andrew, support for creationism has grown recently while skepticism has been redirected towards science. People are beginning to see that physical laws cannot explain everything and many have placed their faith in God. Paul attributes the renewed growth in Christianity to society’s fear of rapid technological and scientific progress. He sees religion as a refuge for those who feel trapped by the lack of intellectual freedom in science. Religion, like sports and public service, is an outlet for people who need to get away from the daily pressures of life. Also, Paul disagrees that skepticism has returned to science, especially with the incredible advances in genetic engineering and biology in general. In conclusion, one cannot say that creation has shifted from total
acceptance to uncertainty. The advancement of science has given way to multiple theories on the creation of life, but has not compromised the validity of creationism.

Shifting from the historical account of creation to a scientific explanation of the origin of the universe, we encounter the Big Bang theory. This theory states that the universe was created about 15 billion years ago from a cosmic explosion that started the expansion of the universe. At that moment, all of the matter and energy of space was contained at one point, with the size of an atom today and a density $10^{96}$ that of water. Although the Big Bang theory can never be proved, due to impossibility of simulating such high energy conditions, it has been supported by independent lines of research, from Edwin Hubble’s red shift to Robert Wilson’s scattered microwaves. The theory’s mainstay in astronomy and creation has suggested that the universe did have a beginning, contradictory to earlier beliefs of an infinite universe.

The question that then arises is, “Does the Big Bang support or discredit creation?” Creationists (Andrew) argue that the Big Bang lends credence to creationism because the dense beginning corresponds to “Let there be light” (Genesis 1:3). The theory makes the eternal account of the universe stand in contrast to the Genesis account. On the other hand, those against creation state that the fact that a beginning existed does not say anything about God’s hand in creation. A “chicken and egg” problem arises in which one must ask what led to the Big Bang. Because the law of physics cannot apply to the begin-
ning, in which matter and energy must have been created from nothing, the Big Bang theory cannot do anything to support or disprove creation itself.

While the Big Bang theory supports that there was an origin, Stanley Miller’s experiments provide a mechanism by which the origin of life may have come about. In 1953, Miller passed sparks through a flask containing only a mixture of simple gases and heated water, inorganic compounds that were probably present in the early atmosphere and ocean. He found that he produced many of the amino acids. Does this experiment challenge creationism? Miller’s mechanism is at odds with Bible literalists, who believe that human creation was not a gradual process from amino acids but was directly from the hand of God. Ricardo states that the experiment does not say anything because amino acids are not living organisms. If one could prove that amino acids gradually gave rise to living things and humans, then Miller’s mechanism could be supported. Both scientists and Christians are not willing to accept Miller’s proposed mechanism due to lack of evidence. Furthermore, non-literal creationists believe that the Genesis account does not explain how humans were created. Genesis 2:7 reads, “the Lord God formed the man from the dust of the ground and breathed into his nostrils the breath of life, and the man became a living being.” From this verse, one can say that God created man from dust but one cannot extract any mechanism for God’s creation. Perhaps God did create humans using Stanley Miller’s mechanism; one may never know God’s hand in creation.
It is also helpful to look at movements opposed to creationism to assess its validity in society. Leaders of scientific materialism included Jacques Monod and Edward Wilson. Monod claims that biology has proved that there is no purpose in nature. “Man knows at last that he is alone in the universe’s unfeeling immensity, out of which he is emerged only by chance.” He also believes that man’s behavior is genetically determined, and that there is no purpose in the cosmos. Monod’s scientific claims are clearly flawed. Evolution shows that man emerges from a meaningful selection process, in which he must adapt to the environment and improve his traits over time. Furthermore, Monod attempts to relate scientific theory to divine purpose, an attempt which is speculative and lacking in evidence.

Edward Wilson hold that religious practices were a useful survival mechanism earlier in humanity because they contributed to group cohesion. He believes that religion, when seen as a product of evolution, will be replaced by scientific materialism. Morality is the result of deep impulses encoded in genes, and biology and genetics will account for all aspects of life. Wilson is correct in assessing that religion is a social and cultural phenomenon, but has overgeneralized science as an all-encompassing explanation for human life. Paul admits that he is not so arrogant as to proclaim that science explains everything. Monod and Wilson are simply making deductions on what they know and understand; Paul believes that the two philosophers don’t have enough information to make such deductions. Andrew states that Monod and Wilson do not have the authority to make their
statements. However, the two anti-creationist theories suggest that science has developed so much that it now stands face-to-face with religion in asking questions about the creation and purpose of life.

Perhaps the greatest theory to challenge creationism is the theory of biological evolution. Evolution is defined as the change in the relative frequency of genes in populations. It stems from Charles Darwin’s belief that natural selection is the main source of evolutionary change. As Darwin stated,

“Being well-prepared to appreciate the struggle for existence which everywhere goes on, from long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances favorable variation would tend to be preserved and unfavorable ones to be destroyed. The result of this would be the formation of a new species. Here, then, I had at last a theory by which to work.”

Natural selection combines the ideas of random variation, struggle for survival, and survival of the fittest to explain how species evolve. It describes nature as a dynamic process that is in a state of flux.

The scientists that I interviewed take evolution as a fact. They say that science has shown over and over again that living organisms evolve. For example, one can trace fossil evidence to show that the shape of a monkey’s head has gradually developed into a human head. With species disappearing and showing up throughout history, one can say that there is sufficient proof for evolution. The Christians believe in natural selection but are
skeptical about human evolution. Ricardo disagrees that man descended from apes, and stands firm in his literalist belief that God created every human being. He states that fossil evidence is incomplete and lacking in transition fossils, and thus human evolution should not be universally proclaimed. Andrew has a similar stance but is open to the possibility that humans evolved from apes. He believes that some Christians respond with fear to evolution because it challenged the status quo. However, the tide is now turning and people are beginning to question the validity of human evolution.

Paul acknowledges potential flaws in the paleontological account but points to genome sequencing as “threading the needle” of human evolution. He says genome sequencing shows clearly that humans are related to apes, that humans have genes that can be traced from primates. In fact, 99 percent of DNA is shared between humans, chimpanzees, and gorillas. As one moves from Australopithecus (four million years ago), to Homo Habilus (two million years ago), all the way to Homo Sapiens (500,000 years ago), one can see a gradual divergence in DNA from primates. Paul believes that the anthropological evidence will serve to support the wealth of genetic evidence expected in the future. However, it must be noted that genome sequencing has only suggested the relation of human to apes; common descent of humans and apes is still a theory in the making.

To understand the support for evolution, one can look at the modes of thinking prior to Darwin. Bible literalism had already been questioned by Galileo’s time. The once-for-all creation of species in their present form was severely doubted, and the six days of Gen-
esis were either viewed metaphorically or taken to refer to six epochs. However, stability of biological forms had been emphasized. The gradations of complexity among living organisms were seen as the ordained hierarchy of life instead of developmental relationships. This form of natural theology was weakened by the theory of evolution. Natural selection showed that human mental capacity differed in degree rather than in kind from the capacities of animals. Thus, humans were brought into the sphere of natural law and studied in the same respects as other organisms. In this case, the scientific power of Darwinism overcame the religious belief that humans were the “immutable chain of being.”

Evolution has also faced other opposing theories since Darwin’s times. One of these is Lamarckism. Lamarckians believed in the inheritance of acquired characteristics, in contrast to the selected characteristics of Darwinism. Their belief in the directional and progressive character of mankind was more socially accepted than natural selection, because man held control over nature. Lamarckism’s optimism offered the possibility of rapid improvement of humanity instead of the competitive struggle of Darwinism. However, Lamarckism could not be verified in laboratory experiments or in nature. The Darwinistic inheritance of variations was confirmed by Mendelian genetics in the 20th century. Henceforth, one can see that the hard data of Darwinism surmounted the positive social implications of Lamarckism.

Thus, the theory of evolution brought about changes in Western society’s perception of nature. The individual’s interaction with the environment became more significant
because human beings were seen as part of nature instead of separate from it. Also, the major roles of law and chance introduced a new unpredictability into the history of nature. The randomness of variations were now preserved lawfully by their selective advantages in the environment.

Both conservatives and non-conservative Creationists were affected by the theory of evolution. Conservative protestants such as the Bible literalists were reluctant to accept evolution, calling the theory a denial of God’s design. They believed that the theory questioned the biblical understanding of human nature. However, evolution’s case for chance and selection in nature was strong enough to force much of Christianity to modify their views on design. Many Protestants (including Andrew) interpreted the Genesis account of creation as a poetic rendition of affirmations of how the world is dependent on God, in which evolution is God’s way of creating. The chance variations, which Darwin could not explain, were attributed to the “supernatural choices of an intelligent Designer.” Christian movements such as the Modernist movement went even further in adapting to the concept of evolution. The Modernists saw the Bible as a human document recording religious insights rather than as God’s revelation. Moreover, Jesus was not a divine savior but a teacher of high ideals. Modernists emphasized human effort and personal religious experience; they focused mainly on the individual instead of the divine.

Both Andrew and Ricardo expressed some displeasure over the Modernist view. Andrew acknowledges that there is room for both symbolic and literal interpretation in the
Bible. For instance, Genesis’s account of creation can be viewed metaphorically because the purpose of the story is simply to show God’s control over nature. On the other hand, the life of Jesus and his crucifixion must be taken literally because Christianity is based on Jesus’s death and resurrection, the forgiveness of sins, and the presence of the holy spirit. As a result, one must make sure to keep essential literal tenets of the Christian faith in tact whenever opposition is faced. Ricardo dismisses the Modern movement as false prophetism that the Bible warns against. However, this view does not allow for one to evaluate Christian movements unlike one’s own, and may lead to close-mindedness.

An intermediate between modernism and literalism is liberal theology. This movement calls scripture a human witness to human revelation rather than strict revelation itself. It emphasizes religious and moral experience rather than revealed theology. Liberal theologists were able to take a more relaxed view on evolution because the knowledge of God comes from religious consciousness rather than the Bible itself. However, this view compromises the sacredness and holiness of the Bible by focusing on human thought. It calls into question the statement that the Bible is the word of God. Modernism and liberal theology can both incorporate evolution into their beliefs, but one must consider whether the movements conceal some of the basic beliefs of Christianity. Modernism compromises the power of Jesus, while liberal theology takes away from the holiness of the Bible.

We have seen that evolution has forced Christianity to modify some of its views, such as the literalist interpretation of Genesis and ordained hierarchy in which man is sep-
arate from nature. Can evolution go as far as to challenge the views of creationism? The Christians that I interviewed said that religion and science ask different questions and are in different spheres. Thus one cannot disprove the other. Because of the progress of science in the past couple centuries, it is only natural that scientists have begun to search for answers outside of its realm. He acknowledges that creation and evolution aren’t necessarily in conflict with one another, and that God could create through evolution. However, Andrew is not yet willing to accept evolution as a completed theory. He believes that evolution is far more complicated than the present theory. Bettina refuses to accept that evolution and creationism can co-exist because she sees one as fact and one as a story. She is not sure how the world was generated but does not think that someone had a hand in creation. In addition, she does not see it a necessity to discover whether the world was created by God. Paul presents an interesting viewpoint from that of a biologist. He is in agreement with Andrew on the separation of religion and science. He thinks that overlapping one with the other is very difficult: science tends to find facts to questions, while religion tends to answer one’s fears and hopes. Moreover, evolution can be pushed as far as possible and still run into the question of how life came about. If creationists want to put the hand of God behind various scientific processes, scientists cannot show that they are incorrect. His reasoning is that religion is dogmatic and not scientific in its nature.

In conclusion, history has shown that religion and science can interact, and that religion has adjusted to the renewing knowledge of science. Therefore, the claim that science and religion are in separate spheres is not solid reasoning to avoid interrelating the two.
However, religion as a whole does not need to obey scientific laws, nor can it be proved through repeatable experiments. It may never be disproved by science because its strength is gathered from the faith of its followers. Hence when scientific theories such as evolution extend itself to answer questions of why humans were created and what began life, it will ultimately fail in its attempts.