

**Religion and Science:**  
**Charles Darwin's The Origin of Species**

A SENIOR ESSAY

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By

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### **Introduction**

On November 24, 1859, Charles Darwin published *The Origin of Species by Means of Natural Selection*. The volume centered on the theory of common descent and adaptation with modification through natural selection. Darwin drew evidence for his theory from the observations from his five-year circumnavigation of the world aboard the H.M.S. Beagle.<sup>1</sup> The first edition of *The Origin of Species* sold all copies within the first day of publication. Darwin wrote many other books expanding on his theory of evolution, but not until 1871 did he explain what he meant by the theory of common descent in relation to humankind with *The Descent of Man and Selection in Relation to Race*. He did not explicitly write that humankind and animals have a common ancestor in *The Origin of Species*. However, his remark at the end of *The Origin*, “Light would be thrown on the origin of man and his history,” implied as much.<sup>2</sup> The ideas within *The Origin*, particularly the theory of common descent and the theory of evolution by natural selection, have sparked controversy well into the twenty-first century. This controversy is rooted in the belief that he altered the relationship between religion and science, from one of unity to one of separation.

Did Darwin create a divide between science and religion in the nineteenth century? To answer this question we need to look at the nature of the relationship between religion and science, before and after Darwin’s writings on the theory of evolution and common descent. The history of religious beliefs and scientific ideas and their relationship spans several centuries and so this requires an investigation of the thoughts on the relationship between religion and science among the Greeks, St. Augustine, the Renaissance and the Age of Enlightenment. Since religion and science have. In turn, this essay aims to provide an analysis of Darwin’s, *The Origin of*

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<sup>1</sup>Charles Darwin. On The Origin of Species by means of Natural Selection and The Descent of Man and Selection in Relation to Sex, Vol. 49 Great Books of the Western World, ( Robert P. Gwinn, 1991), 283.

<sup>2</sup>Darwin, vi.

*Species* and *The Descent of Man*, as well as an analysis of Darwin's correspondence after the publication of *The Origin of Species*. Attention to the reception of Darwin's work in the nineteenth century will determine whether the people of that period felt Darwin created a divide between religion and science. Furthermore, a description of how religion and Darwin's theories are viewed in the twenty-first century will be provided here, alongside the discussion of the influences which determined those views.

Analysis of Darwin's statements on the theory of common descent and evolution in the nineteenth century will illustrate that Darwin did not create a divide between religion and science. First, the idea of evolution had already permeated the mind of the nineteenth century through scholarship like that of Aristotle. Further, Darwin's use of science to describe the natural world reflected a time in which religion and science were beginning to be recognized as distinct domains because of the different ways each analyzed the world. For Darwin scientific evidence was empirical and he believed his ideas were scientific. Thus, any conflict of a religious nature provoked by his theories was to be resolved by the individual mind because religious evidence was based on faith. Contemporary thoughts on the divide often attribute it to a conflict between religion and Darwin's thoughts on common descent. However, people had come to accept and understand the concept of common descent by the time of the publication of *The Descent of Man*, which despite being more explicit received far less criticism than *The Origin of Species*, which merely implied common descent.

Darwin stayed true to his science and did not attack religion directly in his works. He refrained from believing that natural selection entirely ruled out the possibility or lack of a Creator because there was no empirical evidence for either. Further evidence against Darwin's division of religion and science lies in the fact that Darwin had supporters and denouncers in

both the scientific and religious spheres. Overall, the idea of a divide created by Darwin has been the result of misinterpretation of the reception of his work in the nineteenth century by authors such as John Draper and not Darwin himself. Contemporary ideas of a Darwinian divide result from misinterpretations of past conflicts with the Roman Catholic Church, lack of understanding of religious doctrine, fears over certain aspects of Darwin's ideas which some feel conflict with personal religious beliefs, fears over Social Darwinism, and concerns that accepting Darwin's theories promote atheism. Only in the twenty-first century has that belief in a divide between religion and science come to the forefront due to misinterpretations of Darwin's work and historical misinformation.

### ***The Tradition of Evolution***

Information on the historical context which laid the foundation for the development of Darwin's ideas, shows that attributing a divide between religion and science to evolution is quite false. Darwin followed a long tradition in the scholarship of evolution. He was not unique in his promotion of this view; a thousand years before Darwin others developed ideas related to evolution. For example, Aristotle promoted thinking of the world through observable fact and in 350 B.C. wrote *The History of Animals*, describing different species of animals in order to unearth patterns in design.<sup>3</sup> In fact, Aristotle's *Physicae auscultationes*, is quoted by Darwin as showing an inclination towards the belief in the adaptation of species, "So what hinders different parts of the body from having this merely accidental relation in nature? As the teeth, for example, grow by necessity, the front ones sharp adapted for dividing and the grinders flat and serviceable for the mastication of food."<sup>4</sup> After Aristotle's death, Epicurus established a new school of Greek thought following the teachings of Democritus. He argued that the world around us had been

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<sup>3</sup>Aristotle, *History of Animals*. (Cambridge: Harvard University Press, 1993). qtd in Rebecca Stott, *Darwin's Ghosts: In Search of the First Evolutionists*, (London: Bloomsbury Publishing, 2012), 28.

<sup>4</sup>Darwin, 1.

created by chance collisions, not by a controlling god, and stated that among living organisms there was a struggle for survival resulting in extinctions and modifications.<sup>5</sup> Thus, both Aristotle and Epicurus observed patterns in the design of nature and the struggle for survival among species, phenomena central to Darwin's theory of evolution by natural selection.

Additionally, the first extensive study of animals was similar to the theory of evolution by natural selection and was formulated outside of traditional western scholarship. Uthman 'Amr ibn Bahr al-Kinani al Fuqaimi al Basri of Basra, in 847 A.D. wrote the *Book of Living Beings*, demonstrating that everything in the grand scheme of nature had a purpose and to prove the existence of God.<sup>6</sup> After the publication of *The Origin of Species*, Darwin was in fact accused of stealing from Al Jahiz. There were, however, no known full English translations of this Arabic work in Darwin's time.<sup>7</sup> Still, shortly before Darwin, ideas of evolution were widespread in the educated mindset of the nineteenth-century intellectuals. The nineteenth century had come to reconciled evolution with religion by believing life on earth was either first created by God and then left to its own devices or that humans where created by the hand of God, but animals arose through natural laws. Consequently, the theory of evolution could not have caused a divide between religion and science. The long tradition of evolution suggests the nineteenth century had already come to accept the notion of change in species.

### ***The Tradition of the Scientific Investigation of the World***

The best way to understand the debate over Darwin and religion is to analyze the relationship between religion and science before and after Darwin's *Origin of Species*. Although Darwin's work had a long context in the study of the natural world his writings were aimed only at attempting to understand the world through the scientific method, rather than studying the

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<sup>5</sup>Stott, 41.

<sup>6</sup>Stott, 44.

<sup>7</sup>Stott, 44.

world as a way to understand God. He was very much a product of the nineteenth-century mindset. His methodology for the study of the world represented a change from science as part of theological studies to science as separate from theology. Religion and Science were becoming separate before Darwin, not because one could not support the other but because the two represented different ways of thinking about the world and merited different trajectories of study. Consequently, the idea that Darwin is responsible for a divide between Religion and Science is from his methodological perspective as well false. Darwin's work should be analyzed in terms of science and not meant as an attack of religion or as a way to answer the question of God's existence. The conversion of using only science to study the world rather than religion had been most evident in the transition between the Renaissance and Enlightenment.

Soon after the time of Epicurus in the Greco-Roman world, Christianity became the dominant religion in the Roman Empire and Epicurean notions were condemned as pagan and materialistic. Long after the fall of the Roman Empire, between 1350 A.D. and 1700 A.D, the Scientific Revolution began. This period includes the Renaissance and Enlightenment. The relationship between religion and science during the Renaissance, 1350-1550, was vastly different from that in the Enlightenment. The Renaissance was a time when natural philosophers were devout because scientific learning was encouraged as a way to understand God in the natural world.

A Renaissance man was the first important figure of the scientific revolution. For example, Nicolas Copernicus was a cathedral canon in search of an astronomical model which would accurately predict Easter.<sup>8</sup> In 1543, the year of his death, he published *De revolutionibus orbium coelestium* (*On the Revolutions of the Heavenly Spheres*), advocating for the heliocentric

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<sup>8</sup>Niccolò Copernico, *De revolutionibus orbium coelestium*, (Norimberga: Petreium, 1543), qtd in Richard Olson, *Science and religion, 1450-1900: from Copernicus to Darwin*, (Connecticut: Greenwood Publishing Group, 2004), 7.

model in which the earth rotated about the sun and on its own axis every 23 hours and 56 minutes.<sup>9</sup> More than a century after Copernicus' death, Galileo Galilei took up the astronomer's work and offered evidence for the heliocentric model. He noticed, contrary to the vision poets had held for generations, that the moon and sun were imperfect, with craters and rifts. Galileo also pointed out Venus had phases similar to the moon and Jupiter had moons like earth.<sup>10</sup> Later, Issac Newton established the basic laws of physics with his discovery of the mechanisms which keep planets in orbit and the trajectory of an arrow so completely, the scientific revolution within physics, which in turn would influence religious culture in the Enlightenment.<sup>11</sup> Both Galileo and Newton came from a period in which natural philosophers were both scientists and at the same time serious religious thinkers. This dual prospective worked to encourage learning about the natural world in order to understand God.

However, Darwin's ideas about the world were shaped by the mature age of the Enlightenment. This was a period in which the scientific method was employed to learn about the world instead of learning about the world through a set of classical philosophical abstractions or as a matter of divine revelation, as had previously been the case.<sup>12</sup> For example, Erasmus Darwin, a prominent natural philosopher of the Enlightenment and grandfather of Charles Darwin, proposed the idea of evolution by claiming that the world changed over aeons, from simple creatures to more complex ones due to by chemistry and motivated by environmental forces.<sup>13</sup> The elder Darwin's focus on secondary natural laws rather than on God as the creator is

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<sup>9</sup>Keith Thomson, Before Darwin: Reconciling God and Nature, (Connecticut: Yale University Press, 2005), 24.

<sup>10</sup>Thomson, 25.

<sup>11</sup>Thomson, 28.

<sup>12</sup>Thomson, 31.

<sup>13</sup>Erasmus Darwin, Zoonomia, (London: Thomas & Andrews, 1809), qtd in Keith Thomson, Before Darwin: Reconciling God and Nature, (Connecticut: Yale University Press, 2005), 38.

an example of the transition between studying the world as God's ability to create himself and studying the world as God's ability to create via natural laws.

Erasmus Darwin's hypothesis about change began a stream of arguments about what role God played in the world, whether he was a loving God around at every moment or a god who created and then left the world to work by natural laws.<sup>14</sup> Consequently, in 1808 in an attempt to answer the question of the role of God, William Paley, one of the last natural philosophers, wrote *Natural Theology*. Paley argued that the existence of God as an intelligent designer is evident in the intricate design of living organisms.<sup>15</sup> Paley is credited with the watchmaker analogy that suggests that if you opened up a time piece you could undoubtedly conclude that it was purposely fully designed.<sup>16</sup> By his analogy, Paley made a teleological argument that design in organisms implies a designer of such organisms. However, Paley's arguments were not supported scientifically. The era of science in the name of supporting religious doctrine was coming to an end.

### ***Darwin's Life: The Path to Evolution***

Charles Darwin was born on February 12, 1809, in Shrewsbury, England, the fifth of six children born to Robert and Susannah Darwin.<sup>17</sup> He was raised in a Unitarian Protestant household, which rejected the authority of the pope and the divinity of Jesus. He first attended school at the age of eight. At the age of sixteen he attended the University of Edinburgh to become a physician.<sup>18</sup> However, medicine was not Darwin's calling, so his father encouraged him to enroll at Christ's College, Cambridge, in 1828.<sup>19</sup> While studying at Cambridge, Darwin

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<sup>14</sup>Thomson, 43.

<sup>15</sup>John Haught, *God after Darwin: A Theology of Evolution*, (Colorado: Westview Press, 2007), 37.

<sup>16</sup>William Paley, *Natural Theology*, (1802), qtd in John Haught, *God after Darwin: A Theology of Evolution*, (Colorado: Westview Press, 2007), 37.

<sup>17</sup>Mark Pallen, *The Rough Guide to Evolution*, (London: Dorling Kindersley Ltd, 2009), 15.

<sup>18</sup>Pallen, 18.

<sup>19</sup>Pallen, 19.



developed an interest in travel and in 1831 was invited to journey on a voyage to South America with Captain Robert FitzRoy on the H.M.S. Beagle. The expedition came to an end on September 15, 1835, and provided Darwin the opportunity to collect many plant and animal specimens.

Darwin would later use his observations from the trip as empirical evidence for his argument for natural selection. In July 1837, Darwin entered his ideas on the transmutation of species into his famed notebooks, which record that on October 1838 Darwin read Malthus' essay *On the Principle of Population*.<sup>20</sup> Darwin's autobiography states, "October is fifteen months after I began my systematic enquiry. I happen to read Malthus' being well prepared to appreciate the struggle for existence it at once struck me that under these circumstances favorable variations would tend to be preserved and unfavorable ones be destroyed."<sup>21</sup> This was the first time Darwin came to the conclusion that natural selection accounted for the evolution and adaptation of species.

Darwin married his first cousin Emma Wedgwood in 1839 and promptly moved to the Kent Village of Down. Over the next several years, Darwin wrote essays on his observations and began to organize the evidence for his theory. He began correspondence with several members of scientific societies near his home. Darwin wrote or received more than 14,500 letters.<sup>22</sup> His correspondence with specialists demonstrated that he began to make sense of the evidence from his circumnavigation. He is known to have consulted mainly with Charles Lyell (the foremost geologist of the nineteenth century), Asa Gray, (an American botanist at Harvard) and Joseph Hooker and Thomas Henry Huxley (both naturalists). Darwin befriended Lyell, Gray, Hooker and Huxley, and consulted and confided with them on his theory on the transmutability of

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<sup>20</sup>Tim Berra, *Charles Darwin: The Concise Story of an Extraordinary Man*, (Maryland: JHU Press, 2009), 40.

<sup>21</sup>Berra, 40.

<sup>22</sup>Berra, 40.

species.<sup>23</sup> In 1855, Lyell suggested that Darwin read an essay titled, *On The Law which has Regulated The Introduction of New Species*, by Alfred Russel Wallace.<sup>24</sup> The essay showed sketches similar to those of Darwin, so Lyell urged Darwin to prepare a summary of his theories. In 1858, Wallace then, read Malthus' *Essay on the Principle of Population*. He reached the same conclusion as Darwin had twelve years earlier, that natural selection was the factor controlling populations.<sup>25</sup> On June 18, 1858, Russel Wallace mailed a package to Charles Darwin, asking if he could review the package and then send it to Charles Lyell to arrange for publication if the ideas were sound and valid.<sup>26</sup>

Inside the package, Wallace had included an essay *On the Tendency of Varieties to Depart Indefinitely from the Original Type*. Darwin wrote to Lyell, "I never saw a more striking coincidence: If Wallace had my master sketch written out in 1842, he could not have made a better abstract."<sup>27</sup> At the time Darwin received Wallace's package, he was dealing with sick children, but he nonetheless managed to prepare an essay *On the Perpetuation of Varieties and Species by Means of Selection*. Charles Lyell and Joseph Hooker suggested Darwin publish both his and Wallace's essays at the same time in the *Zoological Journal of the Linnean Society*, on July 1, 1858. Wallace in his autobiography wrote; "Darwin and Dr. Hooker wrote to me informing me of what had been done. Of course I not only approved, but felt they had given me more honour and credit that I deserved by putting my sudden intuition on the same level with the prolonged labors of Darwin, who reached the same point twenty years earlier in order to present the theory to the world with such a body of systemized facts and arguments as would almost

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<sup>23</sup>Pallen, 41.

<sup>24</sup>Berra, 59.

<sup>25</sup>Berra, 59.

<sup>26</sup>Berra, 59.

<sup>27</sup>Berra, 60.

compel conviction.”<sup>28</sup> Generously, Wallace recognized that Darwin had worked extensively to support the theory of natural selection and accepted sharing the co-promotion of the idea of natural selection.

However, at the time of the publication of the Darwin and Wallace’s essays, the significance of the theory was not recognized. The essays were only read to a group of thirty people at the Linnaean Society.<sup>29</sup> Consequently, Darwin began to write his theory in a larger abstract of 155,000 words, entitled *The Origin of Species by Means of Natural Selection on the Preservation of Favored Races in the Struggle for Life*. This great work was published on November 24, 1859.<sup>30</sup> For Darwin, *The Origin* was one long argument for his theory of evolution by natural selection using the evidence he acquired from his trip and written in a language that was understandable to the average reader.<sup>31</sup> Twelve years later, in 1871, Darwin published *The Descent of Man and Selection in Relation to Sex*, in which he first uses the term evolution. Darwin hesitated to use the word “evolution” because evolution is defined as change over time and implied there was progress in the changing of species and evolution occurred towards an end. That is humans were the theological product, while natural selection meant the adaptation of species to their environment. More importantly, in the final, sixth, 1871 edition of *The Origin of Species* he fully discussed his “transmutation theory” in terms of “evolution.”<sup>32</sup> Despite his productivity, Darwin was plagued by ill health after his voyage on the HMS Beagle. In 1882, he died of heart failure at the age of 73 in his home at Down. 150 years after the publication of Darwin’s *Origin of Species* he is remembered as the father of evolutionary biology and celebrated for his contributions to the understanding of modern biology.

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<sup>28</sup>Berra, 63.

<sup>29</sup>Berra, 63.

<sup>30</sup>Pallen, 49.

<sup>31</sup>Pallen, 49.

<sup>32</sup>Berra, 74.

### ***Darwin's Theories: Common Descent***

The contemporary controversy about Darwin is generally interpreted as historiographically accurate and as stemming from the idea of common descent in *The Origin of Species*. However, primary analysis of *The Origin of Species* provides concrete historical evidence for the argument that Darwin did not create a divide between religion and science although his ideas were controversial for some in England. The first statement on common descent comes from 1859 edition of *The Origin of Species*; "Analogy would lead me one step, namely, to the belief that all animals and plants have descended from someone prototype. But analogy may be a deceitful guide. Nevertheless all living things have much in common, in their chemical composition, their vesicles, cellular structure, their laws of growth and reproduction."<sup>33</sup> In subsequent editions Darwin expresses his idea of a prototype as a primordial form: "Therefore I should infer from analogy that probably all the organic beings which have ever lived on this earth have descended from some one primordial form, into which life was first breathed."<sup>34</sup> He provides evidence of common descent in the form of homologous structure seen among animals: "What can be more curious than that the hand of a man, formed for grasping, that of a mole for digging, the leg of the horse, the paddle of the porpoise, and the wing of the bat, should all be constructed on the same pattern, and should include the same bones, in the same relative positions? Hence the same names can be given to the homologous bones in widely different animals."<sup>35</sup> Darwin concludes the last chapter, "Mutual Affinities of Organic Beings," with the famous passage, "There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of

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<sup>33</sup>Charles Darwin, On The Origin of Species by Means of Natural Selection, or The Preservation of Favoured Races in The Struggle For Life, (London: John Murray, 1859), 484.

<sup>34</sup>Darwin, 241.

<sup>35</sup>Darwin, 342.

gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved.”<sup>36</sup> The ending of *The Origin of Species* further states, “light would be thrown on the origin of man and his history.” Darwin was careful not to include explicit remarks about humankind having common origins with animals in terms of common ancestry and never explicitly using the words human in his statement. However, his last words in *The Origin* permitted readers to infer descent of all organisms from a common ancestor.

The controversy about *The Origin of Species* is not centered on evolution because the idea had existed long before Darwin, as has been established here. This controversy is nonetheless centered on the theory of common descent because for theologians, human descent from lower forms questioned age-old beliefs in the uniqueness and ethical distinctiveness of humans.<sup>37</sup> Yet, this discussion did not create a divide between religion and science in the nineteenth century. Some theologians viewed Darwin’s ideas as just another way in which God works through secondary causes. For scientists, only the scientific ideas expressed were of controversial merit and the religious implications were not an issue because of the separate spheres of contemplation each inhabited. Additionally, Darwin never answers to the question of origin of life on earth, so the title *The Origin of Species* is deceptive. On the other hand, he did provide an account of how life transformed to create different species and so, for some readers Darwin thus, did not create a divide as his aim was not to provide an alternate explanation for God through secondary laws, but rather, to explain the mutability of species.

### ***Darwin’s Theories: The Descent of Man***

Further confirmation that the idea of common descent did not create a divide between religion and science is based on the evidence that *The Descent of Man* was not as controversial

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<sup>36</sup>Darwin, 243.

<sup>37</sup>John Haight, Responses to One Hundred and One Questions on God and Evolution, (California: Paulist Press, 2001), 5.

as *The Origin of Species*, even though *The Descent* was more explicit. The reason there was less controversiality surrounding of *The Descent of Man* is that by the time of Darwin's' publication of *The Descent of Man and Selection in Relation to Race*, twelve years after *The Origin of Species*, the idea of common descent, and natural selection had already been widely debated and come to be accepted within the scientific community. The controversy over *The Descent of Man* for both religious and scientific thinkers came largely from Darwin's suggestion that sexual selection plays a role equal to natural selection in the adaptation of species. Through the use of sexual selection Darwin, wanted to explain why some traits appear which do not help organisms adapt to their environment for instance the decorative peacock's tail is the result of female choice. Darwin himself states the notion of common descent like evolution had been brought up before. He says: "The conclusion that man is co-descendant with other species of some ancient, lower and extinct form is not in any degree new."<sup>38</sup> Darwin explains that evidence of the common descent of man is in his structure: "Man bears in his bodily structure clear traces of his descent from some lower form; but it may be urged that, as man differs so greatly in his mental power from all other animals, there must be some error in this conclusion. No doubt the difference in this respect is enormous, even if we compare the mind of one of the lowest savages, who has no words to express any number higher than four, and who uses no abstract terms for the commonest objects or affections, with that of the most highly organized ape."<sup>39</sup> But, the nineteenth century had already come to terms with Darwin's ideas. Thus, *The Descent of Man*, despite providing Darwin's fuller thoughts on the theory of common descent for humankind, was not as controversial in his own time, although Darwin did become the first to write about human evolution in terms of sexual selection in *The Descent of Man*.

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<sup>38</sup>Darwin, 241.

<sup>39</sup>Charles Darwin, *The Descent of Man and Selection in Relation to Sex*, (London: John Murray, 1871), 13-14.

Earlier debates over *The Origin of Species* had already influenced contemporaries to develop opinions on the relationship between Darwin's theories and religion. However, that does not mean that Darwin created a divide completely separating the practice of science from belief in religion. Individuals in the nineteenth century had come to various conclusions as to how they would balance both scientific and religious ideas. The period had found *The Origin of Species*, controversial because the ideas within the book caused people to think about their relationship to other organisms, in the implicit nature of Darwin's arguments, in contrast to, the explicit nature of *The Descent of Man*. However, the lack of controversy over *The Descent of Man* in the nineteenth century affirms that Darwin's theories were not so controversial that they were considered heretical. Otherwise, *The Descent of Man* would have been the book responsible for such a divide. In fact, if Darwin had been considered the great blow to religion, religion would have crumbled. Instead he is considered one of the greatest thinkers of the nineteenth century and is even buried in Westminster Abbey.

### ***Darwin's Theories: Natural Selection***

*Vestiges of the Natural History of Creation*, was published anonymously, then later discovered to be published by Robert Chambers in 1847, twelve years before the publication of *The Origin of Species*, had raised the central question of how species are created.<sup>40</sup> In this book, Chambers argued that mammals evolved from birds by way of the duck-billed platypus.<sup>41</sup> In 1831, in *Principles of Geology*, Lyell had raised the same question of the development of species and argued that one species changed into another. Additionally, he claimed that fossils are stable

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<sup>40</sup>Young, David, *The Discovery of Evolution*, (Cambridge: Cambridge University Press, 2007), 111.

<sup>41</sup>Robert Chambers, *Vestiges of the Natural History of Creation*, (1853), qtd in David Young, *The Discovery of Evolution*, (Cambridge: Cambridge University Press, 2007), 111.

enough units to be reliable geological markers because the geological world changes gradually.<sup>42</sup> Neither Chambers nor Lyell, proposed a real mechanism for evolution. They only promoted the idea that the creation of species meant the natural world had a divine origin. The question of the extent of God's involvement through secondary laws of nature became a topic of scientific interest. However, Darwin was the first to attempt to answer the question of how species evolve in *The Origin of Species*.

Darwin's *The Origin of Species* became popular because he provided a mechanism for evolution that is natural selection. However, Darwin did not answer the question of the actual origin of species (i.e. where life came from). Consequently, some viewed natural selection as a mechanism for God's creation because they held the belief that life on earth was first created by God and then left to its own devices (natural laws), while others that humans were created by the hand of God, but only animals arose through natural laws.<sup>43</sup> However, there were people who believed God intervened in the creation of all life directly, not through secondary laws, and so the controversial aspect about *The Origin of Species* became the mechanism of natural selection.

Darwin first used the term natural selection in the chapter "Variations under Nature," and states, "Owing to this struggle for life, any variation, however slight and from whatever cause proceeding, if it be in any degree profitable to an individual of any species, in its infinitely complex relations to other organic beings and to external nature, will tend to the preservation of that individual, and will generally be inherited by its offspring. The offspring, also, will thus have a better chance of surviving, for, of the many individuals of any species which are periodically born, but a small number can survive. I have called this principle, by which each slight variation, if useful, is preserved, by the term of Natural Selection, in order to mark its

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<sup>42</sup>Charles Lyell, *Principles of Geology*, (London: John Murray, 1830), qtd in David Young, *The Discovery of Evolution*, (Cambridge: Cambridge University Press, 2007), 113.

<sup>43</sup>Lyell, qtd in Young, 114.



relation to man's power of selection.”<sup>44</sup> Darwin’s statement is clear: the struggle of survival leads to the natural selection of one species over another.

Darwin then, concretely demonstrates he is convinced Natural Selection is the only means of modification: “Although much remains obscure, and will long remain obscure, I am convinced that Natural Selection has been the main but not exclusive means of modification.”<sup>45</sup> Darwin himself by no means was infallible in his science. Although he believed the struggle to survive resulted in the selection of one species over another, he did not fully understand how natural selection worked. At the genetic level all he could offer was an explanation that multiple offspring and the competition among species resulted in variation. Darwin also thought that as a consequence of the struggle to survive the production of numerous offspring was necessary for the survival and reproduction of a species. He wrote, “As many more individuals of each species are born than can possibly survive; and as, consequently, there is a frequently recurring struggle for existence, it follows that any being, if it vary however slightly in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of surviving, and thus be *naturally selected*.”<sup>46</sup> Accordingly, Darwin connected his theory of common descent to the overarching theory of evolution through the idea of modification through natural selection.<sup>47</sup>

In *The Origin of Species*, selection of species was seen as a problem because selection appears to diminish or eliminate the role of God. God’s role in creating each form of life individually by spontaneous creation is contradicted by natural selection and is inconsistent with the story of creation because selection as a natural process replaces God as creator.

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<sup>44</sup>Darwin, 61.

<sup>45</sup>Darwin, 6.

<sup>46</sup>Darwin, 5.

<sup>47</sup>Darwin, 241.

Furthermore, the notion of divine providence is destroyed because natural selection is dependent on chance. Thus, selection robs the universe of purpose, because natural selection creates by chance and thus randomly, without purpose. Natural selection also conflicts with the idea of humans as the teleological end of a long series of progressions because it acts at random and not to a progressive end so that only those forms best suited to their environment survive. The controversy over Darwin rests on theological problems seemingly posed by these theories, yet although, religious controversy lay behind natural selection, Darwin did not create a divide between religion and science because religious individuals were able to consider Darwin's ideas within the context of their own religion instead of believing the ideas as irreversibly disconnected.

The matter of faith is and was a personal choice. Even if Darwin had not written about natural selection, other natural laws suggest methods by which God created. Some individuals chose to solely believe in the workings of natural law or in the natural laws as the workings of a divine creator combining both scientific and religious beliefs. Moreover, despite the controversy over Darwin's ideas even he considered his intentions to be purely scientific and outside of the realm of the exact origins of life. Darwin was a man who kept his opinions about his religious views to himself, but thankfully in his autobiography he explained himself and urged that religious controversies should not be related to his ideas.

### ***Darwin's Religious Views***

That Darwin was an atheist is a misconception; in fact, he was an agnostic. Being an agnostic meant Darwin was uncertain of God's existence, unlike an atheist who fully rejects the existence of God. Darwin's uncertainty over the existence of God enabled him to open his mind to the possibility of natural forces at work in the modification of species, but he did not rule out a

God. Darwin's very uncertainty makes the argument that he is an atheist false, so to assume he was also a creationist is also misguided, because Darwin was neither. Darwin took the middle ground when it came to religion and focused the majority of his life on arguing on scientific grounds for his theories. He believed religious beliefs were of a personal nature only to be resolved by an individual. Furthermore, the evolution of his views from creationist to agnostic does not signify that what he learned from his theories led him to no longer believe in God because being unsure of the existence of God is not the same as rejecting God. Additionally, some individuals were able to reconcile both Darwin and religion when they learned about Darwin's theories. Like many who came before and after Darwin, finding that aspects of religion are difficult to reconcile with personal beliefs is a natural circumstance of life. Thus, Darwin was only human to question the world and his relationship with God.

Darwin's autobiography, edited and published by his son Francis Darwin, provides closer insight into Darwin's religious beliefs. Francis writes his father was reticent on the matter of religion.<sup>48</sup> When students wrote to Darwin about religion, however, he felt obliged to write back even though he preferred to keep his religious views to himself. Darwin wrote about his views in response to a Dutch student on April 1871, "I am sure you will excuse my writing at length, when I tell you that I have long been much out of health, and am now staying away from my home for rest. It is impossible to answer your question briefly; and I am not sure that I could do so, even if I wrote at some length. But I may say that the impossibility of conceiving that this grand and wondrous universe, with our conscious selves, arose through chance seems to me the chief argument for the existence of God; but whether this is an argument of real value, I have never been able to decide. I am aware that if we admit a First Cause, the mind still craves to

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<sup>48</sup>Charles Darwin, His Life told in an Autobiographical Chapter and in a selected series of Published Letters, edited by his son, (New York: *New York*, 1893, 60).

know whence it came, and how it arose. Nor can I overlook the difficulty from the immense amount of suffering through the world. I am, also, induced to defer to a certain extent to the judgment of the many able men who have fully believed in God; but here again I see how poor an argument this is. The safest conclusion seems to me that the whole subject is beyond the scope of man's intellect; but man can do his duty."<sup>49</sup> Again in 1879 Darwin replied to a German student, in a similar manner, but the reply was written by another member of the family, "Mr. Darwin begs me to say that he receives so many letters, that he cannot answer them all. He considers that the theory of Evolution is quite compatible with the belief in a God; but that you must remember that different persons have different definitions of what they mean by God. However, the German youth wrote again to Darwin who replied, "I am much engaged, an old man, and out of health, and I cannot spare time to answer your questions fully,—nor indeed can they be answered. Science has nothing to do with Christ, except in so far as the habit of scientific research makes a man cautious in admitting evidence. For myself, I do not believe that there ever has been any revelation. As for a future life, every man must judge for himself between conflicting vague probabilities."<sup>50</sup> Darwin is adamant that religious questions cannot be answered by him, and asserted that humans don't have enough knowledge to have arrived at a definite answer.

Arguments for Darwin's atheism come from lines taken out of context from the autobiography. To understand Darwin's belief, however, is to read about his views in the entirety. In 1876 Darwin wrote; "During these two years I was led to think much about religion. Whilst on board the *Beagle* I was quite orthodox, and I remember being heartily laughed at by several of the officers (though themselves orthodox) for quoting the Bible as an unanswerable

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<sup>49</sup>Darwin, 61.

<sup>50</sup>Darwin, 61.

authority on some point of morality. I suppose it was the novelty of the argument that amused them.”<sup>51</sup> Darwin was a creationist early in his life and even read Paley’s *Natural Theology*; his love of nature motivated him to join the Beagle voyage.

However, around 1836 his views began to change and he came to doubt Christianity, but the long history of Christianity made him doubt his doubt. Darwin stated, “I had gradually come by 1836 to see that the Old Testament was no more to be trusted than the sacred books of the Hindoos. I gradually came to disbelieve in Christianity as a divine revelation. The fact that many false religions have spread over large portions of the earth like wildfire had some weight with me. But I was very unwilling to give up my belief; I feel sure of this, for I can well remember often and often inventing day-dreams of old letters between distinguished Romans, and manuscripts being discovered at Pompeii or elsewhere, which confirmed in the most striking manner all that was written in the Gospels. But I found it more and more difficult, with free scope given to my imagination, to invent evidence which would suffice to convince me.”<sup>52</sup>

Darwin did not think of the existence of a personal God until considerably later in his life. He concludes, “The old argument from design in Nature, as given by Paley, which formerly seemed to me so conclusive, fails, now that the law of natural selection has been discovered. Everyone who believes, as I do, that all the corporeal and mental organs (excepting those which are neither advantageous nor disadvantageous to the possessor) of all beings have been developed through natural selection, or the survival of the fittest, together with use or habit, will admit that these organs have been formed so that their possessors may compete successfully with other beings, and thus increase in number. At the present day the most usual argument for the existence of an intelligent God is drawn from the deep inward conviction and feelings which are

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<sup>51</sup>Darwin, 64-66.

<sup>52</sup>Darwin, 64-66.

experienced by most persons. When thus reflecting, I feel compelled to look to a First Cause having an intelligent mind in some degree analogous to that of man; and I deserve to be called a Theist.”<sup>53</sup> Darwin believed God worked as the First Cause, but only in the context of intelligence and the appearance of life from one form or many, but not as the main mechanism by which species change.

Darwin explicitly states, “This conclusion was strong in my mind about the time, as far as I can remember, when I wrote the *Origin of Species*, and it is since that time that it has very gradually, with many fluctuations, become weaker. But then arises the doubt—can the mind of man, which has, as I fully believe, been developed from a mind as low as that possessed by the lowest animals, be trusted when it draws such grand conclusions? I cannot pretend to throw the least light on such abstruse problems. The mystery of the beginning of all things is insoluble by us, and I for one must be content to remain an Agnostic.”<sup>54</sup> Even Emma, Darwin’s wife, acknowledges his views are shifting and doesn’t think Darwin’s doubts are sinful, “My reason tells me that honest and conscientious doubts cannot be a sin, but I feel it would be a painful void between us. I thank you from my heart for your openness with me and I should dread the feeling that you were concealing your opinions from the fear of giving me pain. My own dear Charley we now do belong to each other and I cannot help being open with you.”<sup>55</sup> From his autobiography it is clear that Darwin’s views on religion are fluctuating and always in doubt, hence, he advises to others to determine their own conclusions.

### ***Darwin’s Intentions***

Darwin was a man of good morals who did not attack others when they wrote to him questioning his theory or asking questions about religion. He was careful never to be too severe

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<sup>53</sup>Darwin, 64-66.

<sup>54</sup>Darwin, 64-66.

<sup>55</sup>Darwin Correspondence Project Database, Letter NO. 441.

concerning the power of science. For example, he advises against harshness in a letter to Haeckel, author of *Generelle Morphologie*, “I have however heard complaints from several excellent authorities and admirers of your work on the severity of your criticisms. This seems to me very unfortunate for I have long observed that much severity leads the reader to take the side of the attacked person. I can call to mind distinct instances in which severity produced directly the opposite effect to what was intended. I know that it is easy to preach and if I had the power of writing with severity I dare say I should triumph in turning poor devils inside out and exposing all their imbecility. Nevertheless, I am convinced that this power does no good, only causes pain. I may add that as we daily see men arriving at opposite conclusions from the same premises it seems to me doubtful policy to speak too positively on any complex subject however much a man may feel convinced of the truth of his own conclusions.”<sup>56</sup>

Darwin’s mildness suggests his intentions towards science and religion alike were genuine in that he did not propose to divide them. For example, a letter written by John Brodie-Innes, a close friend of Darwin, clearly demonstrates that others believed that Darwin had not worked to create a divide between religion and science. Brodie-Innes wrote, elaborating on a recent meeting with the Church Congress at Dundee, “I have the pleasure of the intimate friendship of one of the very first Naturalists in Europe, a most accurate observer, who never states anything as a fact which he has not most thoroughly investigated. The most perfect moral character. His scrupulous regard for the strictest truth is above that of almost all men I know. If on any morning he met with a fact which would clearly contradict one of his cherished theories he would not let the sun set before he made it known. Never saw a word in his writings which were an attack on Religion. He follows his own course as a Naturalist and leaves Moses to take

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<sup>56</sup>Darwin Correspondence Project Database, Letter NO. 5500.

care of himself.’<sup>57</sup> Brodie-Innes thus, describes Darwin as a man of good character who preferred that religion and science follow their respective trajectories because the two are separate investigations of the world and neither is out to undermine the other.

Darwin did not attack religious teaching or intended to represent atheists when he wrote *The Origin of Species*, so he presented his ideas as a scientist by providing observational evidence. In a letter to Asa Gray, his American botanist friend, in May 22, 1860 Darwin wrote: “With respect to the theological view of the question; this is always painful to me. I had no intention to write atheistically.”<sup>58</sup> In another letter to John Fordyce in May 7, 1878, Darwin explicitly stated his religious stance: “It seems to me absurd to doubt that a man may be an ardent theist and an evolutionist, I have never been an atheist in the sense of denying the existence of God. An agnostic would be the most correct description of my state of mind.”<sup>59</sup> Although his theory may have led him to conclude God may not play a direct role in the creation of species. Darwin acknowledged that his words could not prove or disprove the existence of God.

In fact, when others wrote to Darwin about their troubles between his theories and God, he apologized that he raised any concerns and confirmed that religion and the ideas in his theories should be left to their own realms. Darwin wrote and received many letters on the topic of religion and his theories, but he refused to talk about his private beliefs in public and preferred to answer questions through mail. On December 14, 1866, Darwin wrote to M.E. Boole in response to her question about the compatibility of the facts of science and the promises of religion, “My opinion is not worth more than that of any other man who has thought on such subjects and it would be folly in me to give it. I may however remark that it has always appeared

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<sup>57</sup>Darwin Correspondence Project Database, Letter NO. 2814.

<sup>58</sup>Darwin Correspondence Project Database. Letter NO. 2814.

<sup>59</sup>Darwin Correspondence Project Database, Letter NO. 12041.



to me more satisfactory to look at the immense amount of pain and suffering in this world, as the inevitable result of the natural sequence of events, i.e. general laws, rather than from the direct intervention of God though I am aware this is not logical with reference to an omniscient Deity. P.S. I am grieved that my views should incidentally have caused trouble to your mind but I thank you for your Judgment and honour you for it, that theology and science should each run its own course.”<sup>60</sup> Again, here Darwin expressed the sentiments Brodie-Innes indicated at the Church Congress; that theology and religion are separate because of the differences in their approaches to the world. Darwin’s ideas aim not to disprove religion, but rather every individual has to make his or her own decision about the relationship between religion and science.

That relationship is complex and Darwin’s theories alone do not counter religion, as Darwin emphasizes. He admits that the relationship of theology to his theory is difficult to characterize. He had trouble answering whether there is intelligent design in nature and went as far as to say his views are not necessarily atheistic because he believed in the power of natural laws: “I cannot see, as plainly as others do evidence of design and beneficence on all sides of us. There seems to me too much misery in the world. On the other hand, I cannot anyhow be contented to view this wonderful universe and especially, the nature of man and conclude that everything is the result of brute force. I am inclined to look at everything as resulting from designed laws, with the details, whether good or bad, left to the working out of what we may call chance. Not that this notion at all satisfies me, I feel most deeply that the whole subject is too profound for the human intellect. I agree with you that my views are not at all necessarily atheistical, the more I think the more bewildered I become.”<sup>61</sup> Darwin stated here that even though his views may be controversial for others because they seem to contradict certain aspects

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<sup>60</sup>Darwin Correspondence Project Database, Letter NO. 5307.

<sup>61</sup>Darwin Correspondence Project Database, Letter NO. 2814.

of religion, he did not rule out the existence of God. For him the world may have been divinely created, but the individual aspects like the creation of variable species are the result of natural laws like natural selection.

Darwin's own acknowledgement of the possibility of an omnipotent deity suggests he did not work to create a divide or to support the idea of natural selection as the only mechanism for the creation of life. Everyone makes up his/her mind about his/her relationship with God. Darwin thought the question of the extent of God's involvement with the earth was too complex for humans to comprehend. He suggested that the relationship between religion and science changes the more we learn about the scientific world. To assert that he created a stringent divide between religion and science in the nineteenth century is to misinterpret the reception of his ideas and the actual facts of his statements, and to assume too much from subsequent interpretation.

### *Scientific Reception of Darwin's Ideas in the Nineteenth Century*

Further evidence that Darwin did not create a conflict between religion and science is that he had supporters on both religious and scientific sides for his theory of evolution. A divide would have set both religion and science at odds with one another, but that was not the reality of the situation in the nineteenth century or the early twentieth century. Only a separation of religion and science with respect to how their fields approach the natural world has occurred (i.e. using the scientific method or faith), in fact, this separation was in motion long before Darwin.

In England, using the scientific method took root as a way to study the world in the nineteenth century. In 1860, Thomas Henry Huxley became known as Darwin's bulldog for his famous argument with Samuel Wilberforce, the Bishop of Oxford, at the British Association for the Advancement of Science.<sup>62</sup> The arguments of these two historical figures are patched

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<sup>62</sup>David Livingstone, Darwin's Forgotten Defenders: The Encounter Between Evangelical Theology and Evolutionary Thought, (Canada, Regent College Publishing, 2001), 33.

together from various sources because no written records exist of the encounter. Wilberforce is thought to have said, “If anyone were willing to trace his descent through an ape as his grandfather, would he be willing to trace his descent similarly on the side of his grandmother?” Huxley replied, “I asserted that a man has no reason to be ashamed of having an ape for a grandfather. If there were an ancestor whom I should feel shame in recalling it would rather be a man of restless and versatile intellect, who is not only content with an equivocal success in his own sphere of activity, plunges into the scientific questions which he has no real acquaintance.”<sup>63</sup> This interchange has been described as evidence of “conflict” between evolution and religion in which science “won,” but it may have never have happened. The scene seems to have been exaggerated in order to rid the British Association of its unprofessional, amateur image.<sup>64</sup> In the famed encounter, Huxley is thought to have told Wilberforce that the discussion on Darwin’s essay should concern scientists, not theologians. His argument suggests his belief that religion and science involves different spheres of thinking about the world and should be separate. This view is consistent with the widespread nineteenth-century notion that science was empirical and focused on the natural world, while religion was only concerned with moral and faith based studies.

In the United States, the conflict over Darwin’s ideas went in another direction whereby religious views accompanied scientific investigation. Two prominent scientists debated the merits of Darwin’s theory at the Boston Society of Natural History. There were William Barton Rogers, geologist (physicist and educator), and Louis Agassiz (biologist, geologist, and physician). In the end, Rogers won but did not prove Darwin’s ideas had merit, only that the debate should be settled by scrutiny rather than authority, by science rather than religious

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<sup>63</sup>Livingstone, 34.

<sup>64</sup>Livingstone, 34.

dogma.<sup>65</sup> Agassiz would continue to argue against Darwin's theory in America and is considered the precursor of "creation science." He believed that every race of mankind had been specifically created by God for a particular geographical zone. More specifically, he argued for the fixity of species against Darwin's adaptation with the modification of species.<sup>66</sup> On the other hand, Darwin's foremost supporter, was Asa Gray, the American botanist at Harvard University who decided to take on the challenge by Agassiz.

Gray, like Agassiz, was a scientist with a devout belief in God. He felt that to study nature, was to probe the designs of God.<sup>67</sup> In 1857, Gray did not believe in the transmutation of species, but Darwin was interested in Gray's empirical approach to nature and that brought the two closer together. When Gray received sketches of Darwin's theory he realized he could use the theory to explain how the genera of plants in North America and Eastern Asia were no longer separate creations, but descendants of the common flora glaciers had brought from northern areas.<sup>68</sup> At the January 1859 meeting of the American Academy, Gray debated with Louis Agassiz. The debate epitomized the confrontation between two different systems of natural history, the idealist and the empirical.

*The Origin of Species* was published in the same year, and Gray made it his mission that Darwin's theory would get a hearing in the New World although, he had misgivings about elements of Darwin's thoughts he reconciled other aspects with his own beliefs. For example, Gray accepted Darwin's use of Lyell's geology by understanding that the Bible was not a scientific textbook. For him there was no need to reconcile the geological record with the biblical. He began to argue that natural selection did not exclude design, but rather elaborated evidence of

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<sup>65</sup>Livingstone, 34.

<sup>66</sup>Livingstone, 59.

<sup>67</sup>Livingstone, 62.

<sup>68</sup>Livingstone, 63.

purpose.<sup>69</sup> For Asa Gray, an evangelical evolutionist, Darwin's theory was thus contribution to natural theology. Clearly, however, for others there were troubling issues in Darwin's theories. They led some to believe in the reign of natural law and to reject theology altogether. For others, Darwin's ideas were completely against the Bible and, thus, false. The world of theology was increasingly becoming separate from the world of science not because the two ways of understanding appeared to conflict, but because each was based on a different interpretation of the world, and relying on specific evidence for its vision of the world.

### ***Public Reception of Darwin's Ideas in the Nineteenth Century***

At the time of Darwin's publication of *The Origin of Species*, several newspapers and magazines wrote reviews. The following excerpts will further illustrate the argument that Darwin did not create a conflict between religion and science. In *The North American Review*, the reviewer concludes natural selection is a result of God's work. He begins, "The author endeavors to establish, though by a different theory and a somewhat different process of reasoning, the same conclusion which was arrived at by the French naturalist, Lamarck, and by the English author of the "Vestiges of Creation"; namely, that all the species, genera, orders, and classes of animal and vegetable life are essentially of one blood and lineage, having been developed out of one another, without the intervention anywhere of any act of creative power; developed by the slow but progressive accumulation, through what is practically an infinite lapse of ages, of differences and variations which were at first, and for a long period of time, so slight as to be wholly imperceptible."<sup>70</sup> Here the author summarizes Darwin's ideas of common descent, evolution, the variation of species, natural selection and the action of secondary laws.

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<sup>69</sup>Livingstone, 63.

<sup>70</sup>Francis Bowen, [Review of ] On The Origin of Species by Means of Natural Selection, (*North American Review*, 1860), 474-506.

However, the reviewer then disagrees with Darwin in his assumption that God set the world to in motion and then stepped back. He states, "We may say of him what Pascal said of Descartes, "It was his ambition, in his system of philosophy, to be able to do without God altogether; but he was obliged to suppose the Deity gave the world a fillip in order to set it in motion; after which there was nothing more for him to do".<sup>71</sup> According to this reviewer, Darwin presumes to explain the role of God in the universe and that enables theologians to talk critically about the nature of his ideas. The reviewer begins, "We admit all that has been claimed for the proper independence of true physical science that its conclusions are to be tested by their own evidence, and not by their agreement or want of agreement with the teachings of Scripture. The case, therefore, is not one of intrusion by theologians, moralists, or philosophers upon the proper domain of physical science. The intrusion, if any, comes from the other side. It is now the naturalist, the pure physicist, who, quitting his own territory, but, as he professes, still relying exclusively on physical evidence, seeks to build up metaphysical conclusions. We have a right, then, not merely as naturalists, but as students of the moral sciences, to examine the connection between his premises and his conclusions, to test his modes of reasoning, and to see whether he has made a legitimate application of the principles of inductive science to fact."<sup>72</sup> This assessment concludes that Darwin's ideas about natural selection can be perceived as "Events brought about, not by *insulated* interpositions of Divine power," but by exertions of it so frequent and beneficent, that we come to regard them as the ordinary action of Him who laid the foundations of the earth, and without whom not a sparrow falleth to the ground."<sup>73</sup> *The North American Review*, thus argues that Darwin's work can be criticized on religious grounds because

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<sup>71</sup>Bowen, 474-506.

<sup>72</sup>Bowen, 474-506.

<sup>73</sup>Bowen, 474-506.

they lead the reader to make theological conclusions. The reviewer holds the belief that the changing of species happens with constant intervention by God, contrary to Darwin's belief that the changing of species is due to natural selection.

In another review, in *The American Journal of Science and Arts*, Theophilus Parsons comes to the conclusion that Darwin's *The Origin of Species* will be read in various ways and the ideas it expresses will be subject to interpretation with the readers' own biases in mind. For example, the article states; "This man will read it to which the idea of God is an offense and a pain."<sup>74</sup> Parsons argues further that for the reader of Darwin, "His unbelief holds him in subjection."<sup>75</sup> This reviewer warns people that if they study Darwin, they will "find in it new evidence that God is a mere superfluity."<sup>76</sup> Other readers, Parsons hopes, who want to "believe that God forms and fills and *is* the universe and that there is no other God, will find here abundant support for his opinion, and will rejoice in the evidence this theory affords of the universality of law and the connection of all things by gradation into unity."<sup>77</sup> Finally Parsons claims other readers, "will see in this theory new proof of the eternal working of the personal God in whom he believes."<sup>78</sup> "To such a mind," Parsons hoped, "It will be a new proof, that from God's own nature, there came forth laws of order, in which, through which, and by which, he has ever worked, from a beginning, which when we try to think of it, recedes faster than thought can follow."<sup>79</sup> The reception of Darwin's work in the United States thus was clearly not about denouncing Darwin ideas as incompatible, but rather was more about understanding Darwin's ideas in the context of one's own religion.

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<sup>74</sup>Theophilus Parsons, *American Journal of Science and Arts*, 1-13.

<sup>75</sup>Parsons, 1-13.

<sup>76</sup>Parsons, 1-13

<sup>77</sup>Parsons, 1-13

<sup>78</sup>Parsons, 1-13.

<sup>79</sup>Parsons, 1-13.

In England, *The Guardian* the reviewer notes the doubt surrounding Darwin's ideas; "Mr. Darwin is by no means insensible to the great difficulties which beset his theory. The mere mention of such topics as Instinct, Hybridism, the Geological Record, Geographical Distribution, will suggest at once a multitude of objections. Why, if species are but variations of a common type, are their hybrid offspring barren? What imaginable process of selection can have produced the migratory instinct of the swallow, the cell-building instinct of the bee, or the curious habit of some races of ants, which carry on their work by means of captured slaves? If all existing species are but developments of ancient species, why can we not trace each step of the process through successive fossil strata? Or, again, how can we reconcile the theory of a common descent with the generally admitted fact of the existence of certain definite centers of dispersion, from which distinct types seem, as it were, to have radiated into the surrounding districts? All these formidable difficulties are fairly stated, and most ingeniously explained by Mr. Darwin; though he is obliged, in many cases, to take shelter, as a last resource, under the wide-covering protection of human ignorance, and to expect the chance of what may yet be revealed in his favour by future research. Time alone and the discussion of the learned will set the seal of value upon his speculations. Most readers will think that he has established the fact that the number of species in the world is far smaller than would appear from the ordinary classification of naturalists; few, probably, will be disposed to follow him to the extent implied in the following passages: I believe that animals have descended from at most only four or five progenitors, and plants from an equal or lesser number."<sup>80</sup> Darwin was ahead of his time in terms of scientific ideas, and doubts about his ideas were perfectly normal, but the reviewer in the *Guardian* is correct that time and discussion were the only factors which could determine Darwin's ideas as

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<sup>80</sup>W.R. Church, [Review of] *On The Origin of Species*, (London: The Guardian, 1860), 134-135.



valid. This discussion is further evidence at the time of Darwin's publication and even a year later in the nineteenth century there was no divide between religion and science.

### ***Twentieth Century Views on Darwin***

The idea of a divide between religion and science is an invention of the later twentieth or twenty-first centuries. This idea of incompatibility between the two has lately been promoted by religious and non-religious persons alike, who argue religion and science are incompatible because Darwin provided a mechanism for creation, which did not require an omnipotent being. For example, Daniel Dennet, author of *Breaking the Spell*, and Richard Dawkins, author of *The God Delusion*, express the belief that the Darwinian theory of evolution has enough explanatory power to erode traditional metaphysical notions (belief in God) though "universal acid."<sup>81</sup> This belief-eroding element, which both Dennet and Dawkins identify, is the notion that Darwinism applied to nature and society will remove belief in God because religion is reductively explained by Darwinism as the result of society and culture.<sup>82</sup> Thus, belief in God is not valid because "belief" is a creation of our mind. Consequently, Darwin has become a role model for scientific atheism. Dennet's and Dawkins' stance casts Darwin's scientific theory as an ideology for how to live life.

In the incompatibility category with Dennet and Dawkins, there are not only atheists but creationist-theists, who are proponents of the creationist and intelligent design theories. Creationists argue that Darwin caused a divide between religion and science. They contend that evolution of any species contradicts the Biblical account that all species are created by God, because evolutionary theory places humans in the same developmental branch as animals which

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<sup>81</sup>Daniel Dennet, *Breaking The Spell: Religion as a Natural Phenomenon*, (London:Penguin, 2006), Richard Dawkins, *The God Delusion*, (New York: Random House, 2009), qtd in Denis Alexander and Ronald L. Numbers, *Biology and Ideology from Descartes to Dawkins*, (Chicago: University of Chicago Press, 2010), 329.

<sup>82</sup>Dennet and Dawkins, quoted in Alexander, 336.

means humans are not made in the image of God or possess a human soul.<sup>83</sup> On the other hand, proponents of Intelligent Design, an offshoot of creationism, attempt to establish a scientific case for design in nature. Creationists like Michael Denton, author of *Evolution: A Theory in Crisis*, view God as the creator of design because all creatures exhibit designed qualities that is similar base structures) rather than an undirected processes such as natural selection.<sup>84</sup> Denton is considered the founder of the Intelligent Design movement, though not its father, because he laid the intellectual foundations of the movement by critiquing evolutionary ideas in various scientific fields. He is thought to have influenced Philip Johnson's and Michael Behe's idea, underlying Intelligent Design, the notion of a fined-tuned universe. Denton states: "The universe is uniquely fit for life as it exists on earth and for organisms of design and biology. The unique fitness of the laws of nature for life is consistent with the teleological religious concept of the cosmos as specially designed whole with mankind as the primary purpose."<sup>85</sup> He Denton suggests that biology shows evidence of the universe as being especially designed for not only life, but human life. The incompatibility viewpoint, then, is represented by both ardent scientists and theologians, who hold that Darwin created a divide between religion and science. Each side believes Darwin's theories as either fully refuting the existence of a creator or setting the stage for contradiction of biblical teachings.

The view that religion is compatible with Darwin's scientific theories and, therefore, that he did not create a divide, is promulgated by theologian Alister McGrath, scientist Kenneth Miller, and theologian and scientist Francisco Alaya. Foremost Alister McGrath, author of *The*

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<sup>83</sup>Mano Singham, God Vs. Darwin: The War Between Evolution and Creationism in the Classroom, (Maryland: Rowan & Littlefield Education, 2010), 13.

<sup>84</sup>Michael Denton, Michael and Scott Rod, Evolution: A Theory in Crisis, (Massachusetts: Adler and Adler, 1986), qtd in Mano Singham, God Vs. Darwin: The War Between Evolution and Creationism in the Classroom, (Maryland: Rowan & Littlefield Education, 2010), 109.

<sup>85</sup>Micheal Denton, Nature's Destiny, (1998), xi.

*Dawkins Delusion*, advocates for the belief that theism and atheism are independent of evolutionary theory. He claims that both are compatible and that Dawkins is incorrect to state evolutionary thinking necessitates atheism. McGrath suggests that Dawkins is ignorant of the important theological debates about the concept of faith.<sup>86</sup> Meanwhile, Kenneth Miller, author of *Finding Darwin's God*, emphasizes that evolutionary biology is the key to understating God because evolution is the only way in which a creator could have made humans the way they are, free beings in a world of authentic and moral and spiritual choices.<sup>87</sup> Francisco Ayala, author of *Darwin's Gift to Science and Religion*, argues that scientific knowledge is consistent with a belief in God, whereas Creationism and Intelligent Design are not because God is present in the creative powers of natural selection in nature.<sup>88</sup> In general, the compatibility viewpoint expressed by these authors sees Darwin as not creating a divide between science and religion because God works through secondary laws such as natural selection.

On either side of the matter of whether Darwin created a divide between religion and science are thus, specialists from combined and separate scientific and theological backgrounds. There is no divide between religion and science for individuals who accept both without rejecting the other individuals who understand the historical relationship between religion and science, as well as those who understand Darwin's ideas and religious doctrine.

### ***The origins of the conflict viewpoint***

The theory of a conflict between religion and science which has been disseminated in the later twentieth and twenty-first centuries is false. The origin of that idea can be traced to

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<sup>86</sup>Richard Dawkins, Richard. *The God Delusion*, (New York: Random House, 2009), qtd in Alister McGrath, *The Dawkins Delusion?: Atheist Fundamentalism and the Denial of the Divine*, (Illinois, InterVarsity Press, 2007), 24.

<sup>87</sup>Kenneth Miller, *Finding Darwin's God: A Scientist's Search for Common Ground Between God and Evolution*, ( New York: Cliff Street Books, 1999), qtd in Francis Ayala, *Darwin's Gift: To Science and Religion*, (Georgia: Joseph Henry Press, 2007), 291.

<sup>88</sup>Ayala, x.

historical misinformation regarding the relationship between religion and science. Furthermore, the conflict theory also results from the misinterpretation the role the church has played in science and lack of understanding of church doctrine. It has been promoted to by literature on the subject.

### *Misconceptions of Church Doctrine*

Evidence for a lack of division between science and religion, for historical theologians and scientists is imbedded in understanding church doctrine. Saint Augustine, Bishop of Hippo, regarded as one of the voices of the Catholic and Protestant tradition, wrote in *De Genesi ad litteram* (Literal Commentary on Genesis), “It not infrequently happens that something about the earth, about the sky, about other elements of this world, about the motion and rotation or even the magnitude and distances of the stars, about definite eclipses of the sun and moon, about the passage of years and seasons, about the nature of animals, of fruits, of stones, and of other such things, may be known with the greatest certainty by reasoning or by experience, even by one who is not a Christian. It is too disgraceful and ruinous, though, and greatly to be avoided, that he [the non-Christian] should hear a Christian speaking so idiotically on these matters, and as if in accord with Christian writings, that he might say that he could scarcely keep from laughing when he saw how totally in error they are. In view of this and in keeping it in mind constantly while dealing with the book of Genesis, I have, insofar as I was able, explained in detail and set forth for consideration the meanings of obscure passages, taking care not to affirm rashly some one meaning to the prejudice of another and perhaps better explanation.”<sup>89</sup> Augustine here argues that biblical texts should not be taken literally, but read metaphorically if they contradict science or our God-given reason.

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<sup>89</sup>Peter Harrison, *The Cambridge Companion to Science and Religion*, (Cambridge: Cambridge University Press, 2010), 25.

This viewpoint is important because St. Augustine profoundly influenced Christian scholarship, so those who argue religion and science are in conflict because Darwin contradicts the literal account of the bible are then incorrect in two assumptions that the bible is read literally by all who are believers and that reading the bible literally is correct. Certainly St. Augustine thought that for some scripture was enough explanation for the world while for others the details of God's plans require science. In fact, Augustine argued the pagan natural sciences should be the handmaidens of religion and the church, closely disciplined, but put to use as needed.<sup>90</sup> The handmaiden model was handed down to the Middle Ages.

*Misconceptions of the relationship between religion and science*

After the fall of the Roman Empire, Charlemagne, King of the Franks, became dedicated to spreading literacy and required both secular and religious schools to translate classical texts.<sup>91</sup> In first millennium and a half of the Christian era, although there were instances of opposition and acceptance between science and religion, the two perspectives generally sustained harmony. During the Middle Ages, the handmaiden formula and the view that there were two roads to truth, each reliable in its own realm, was argued by Thomas Aquinas, a Dominican Friar, and was widely accepted.<sup>92</sup> Consequently, from the thirteenth century onward, the Christian church became a patron of the universities and thus, scientific learning.<sup>93</sup> Before Darwin, the relationship of religion and science could therefore, best be described as complex, composed of conflict and accommodating events, yet at the same time the church spearheaded learning about the world, encouraging discoveries as a way of providing a closer look at the plans of God.

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<sup>90</sup>San Agustín, De Genesi ad litteram, (1947), Qtd in Peter Harrison, The Cambridge Companion to Science and Religion, (Cambridge: Cambridge University Press, 2010), 25.

<sup>91</sup>Harrison, 29.

<sup>92</sup>Thomas Aquinas, Of God and His Creatures, (1905), Qtd in Peter Harrison, The Cambridge Companion to Science and Religion, (Cambridge: Cambridge University Press, 2010), 33.

<sup>93</sup>Harrison, 40.

*Misconceptions of the Galileo Affair*

Despite the history of the Christian Church as a promoter of the natural sciences, the myth of conflict has been accepted well into the twenty-first century. To clarify the record, historical information on the Scientific Revolution is needed in order to understand the contemporary debate on the nature of the relationship between science and religion. When the argument that religion and science are incompatible is made, the example of the Galileo often affair arises. This matter unfolded when, supposedly, Galileo promoted the Copernican heliocentric model in opposition to church doctrine and thus was sentenced to home arrest for the rest of his life. Historical analysis reveals that Galileo was imprisoned not because of his ideas, but because of his depiction of the Pope and his omission of alternative truth. Galileo was given permission by Pope Urban the III to write his *Dialogue on the Two World Chief Systems* (1632) even through the Pope Paul V had issued a ruling in 1616 against the Copernican theory.<sup>94</sup> Pope Urban's agreement that the dialogues be published makes the case that the Catholic Church was flexible in regard to the natural sciences. Thus, when Galileo was sentenced to home imprisonment, he was punished not because he defended the Copernican theory, but because he neglected to mention the previous determination by Pope Paul V that could not hold, defend, or teach the theory in any way; thus, he effectively lied to Pope Urban.<sup>95</sup> It is important to note that Pope Urban was a close friend of Galileo and shared his similar scientific interests. Urban thought Galileo had by deceiving him had betrayed his trust and only befriended him to get his dialogues published. This view is generally accepted because Galileo depicted the Pope as a

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<sup>94</sup>Harrison, 40.

<sup>95</sup>Harrison, 41.

simpleton in his dialogue.<sup>96</sup> Other political and personal factors were involved in the Galileo Affair, so the incident can not be described as religion in conflict with science.

Furthermore, the idea of conflict may stem from historical and scientific blindness to the fact that many of the great natural philosophers of the Scientific Revolution were also devout believers. For the natural philosophers, God was considered the first cause and God has always assumed to choose to operate by the secondary causes of natural phenomenon.<sup>97</sup> Natural philosophers like Robert Boyle, Descartes, Isaac Newton, and Thomas Hobbes, believed the science of investigating the secondary natural causes did not involve God for explanation, rather God served as inspiration. The natural philosophers were able to reconcile science and religion through the study of secondary natural causes.

#### *Misconceptions due to Literature*

Literature like that of John William Draper, whose work became popular in the mid nineteenth century is also partially responsible for promoting the conflict theory with specific regard to *The Origin of Species*. In 1874, Draper published, *History of the Conflict between Religion and Science*, a work aimed against the Catholic Church for previously publishing a “syllabus of error” against teaching institutions and asking them to submit to the authority of the church.<sup>98</sup> Draper explained his idea of conflict as constant battle over ideas always leading to hostility. The Catholic Church which Draper blamed, never condemned Darwin’s ideas in *The Origin of Species*, however. Because of the history of the Galileo Affair, the church did not want to speak against an idea which might eventually come to be accepted and reconciled with biblical

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<sup>96</sup>Harrison, 42.

<sup>97</sup>Harrison, 42.

<sup>98</sup>John William Draper, *History of the Conflict Between Religion and Science*, (1875), Qtd in Thomas Dixon, Geoffrey Cantor and Stephen Pumfrey, *Science and Religion: New Historical Perspectives*, Cambridge: Cambridge University Press, 2010), 74.

teachings.<sup>99</sup> Catholic intellectuals came to be relaxed with evolution and had reconciliatory feelings.

*Misconceptions of the Catholic Stance*

In fact, Pius XII, a truly conservative pope, in 1950 conceded that the evolutionary origins of the human body offer an interesting hypothesis that Catholic might profitably explore. For example, Pius XII stated, “For these reasons the Teaching Authority of the Church does not forbid that, in conformity with the present state of human sciences and sacred theology, research and discussions, on the part of men experienced in both fields, take place with regard to the doctrine of evolution, in as far as it inquires into the origin of the human body as coming from pre-existent and living matter. For the Catholic faith obliges us to hold that souls are immediately created by God. However, this must be done in such a way that the reasons for both opinions, that is, those favorable and those unfavorable to evolution, be weighed and judged with the necessary seriousness, moderation and measure, and provided that all are prepared to submit to the judgment of the Church, to whom Christ has given the mission of interpreting authentically the Sacred Scriptures and of defending the dogmas of faith.”<sup>100</sup> Although Pope Pius XII did not support evolution outright, he thus acknowledged that there were merits to the theory; thus, his open-mindedness about the theory refutes the idea religion and science are in conflict.

Later in 1996, Pope John Paul II stated that we can all draw profit from "the fruitfulness of frank dialogue between the Church and science. At first glance these views seem to clash with each other. However, in order better to understand historical reality, your research into the relationships between the Church and the scientific community between the 16th and 18th centuries will have a great deal of importance, truth cannot contradict truth, more than a half-

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<sup>99</sup>Stefaan Blancke, Catholic Responses to Evolution, 1859–2009: Local Influences and Mid - Scale Patterns. (Journal of Religious History, 2013), 368.

<sup>100</sup>Pius XII, Humani generis, sec. 36.



century after the appearance of that encyclical, some new findings lead us toward the recognition of evolution as more than an hypothesis.”<sup>101</sup> Accordingly, the Vatican has adopted a conciliatory attitude towards evolution and evolutionary theory, but there remain aspects of evolution such as human morality and intelligence are difficult to accept from a theological perspective.

### ***Conclusion***

The highest authority within the Catholic Church sees no conflict between religion and science, so the argument that Darwin created a divide is false. Why is the “conflict theory” a commonly held belief? The most likely sources are fears of Social Darwinism, fears of atheism, and belief in the incompatibility of religion and science by the fundamentalist Protestant groups in the United States who, between 1875 and 1920, rejected the theory of organic evolution.<sup>102</sup> According to historian Jon H. Roberts, anti-evolutionary Protestants were convinced that the doctrine that man was first made by the fiat of God played such a central role in the biblical narrative, so the theory of organic evolution was irreconcilable with the whole system of truth for the revelation of which the Scriptures were given to men.<sup>103</sup> This belief is still held by those who hold strong specific beliefs about literal Biblical truths. These individuals believe that when faced with a scientific idea which seems to contradict religion, they are forced to choose one over the other. This forced choice leads them to accept religion over science.

This idea of conflict has been widely up held in regard to natural selection as applied to society (Social Darwinism). Anti-evolutionists have opposed Darwin’s theory being taught in schools because Social Darwinism has been associated with a “might makes right” social philosophy, a type of thought which came to the forefront in the United States with the First

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<sup>101</sup> John Paul, Message to the Pontifical Academy of Sciences, (The Quarterly Review of Biology, 1997), 382.

<sup>102</sup>Harrison, 94.

<sup>103</sup>Harrison, 95.

World War over fears the US would solve conflict by entering into war.<sup>104</sup> Protestant evangelicals in the United States feared supporting the theory of evolution effectively supported atheism and so rallied to ban the teaching of evolution from the classroom. This movement led to the Scopes Trial in 1925, which supported the banning of teaching evolution, but eventually the ruling was revoked.<sup>105</sup> The rise of the Intelligent Design theory followed the Scopes Trial and so did advancements in science. In 2005, *Kitzmiller vs. Dover Area School District* was an attempt at presenting Intelligent Design as an alternative theory in biology classes. However, since Intelligent Design violates the establishment clause of the First Amendment, the court ruled in favor of the Dover School District.<sup>106</sup> The conflict theory is thus clearly an invention of the later twentieth century, promulgated largely by ardent atheists or evangelicals who side by their logic stringently.

Those who choose to either support or reject Darwin's ideas often misunderstand religious doctrine, especially, that of the Roman Catholic Church, because of their misinterpretation of what occurred with Galileo and of the teaching of faith. Religion does allow room for belief in evolution and Darwin allows for belief in God. Catholic doctrine does not see a problem with Darwin, nor does Darwin refute the existence of God, as is evident in his works. Thus, when others choose to represent Darwin as Galileo, as an assailant of religion, they are incorrect in their representation. Darwin did not consider himself to be an atheistic writer and neither did the public in the nineteenth century, so he should not be labeled as an atheistic champion. The importance of this realization this is that misinterpretation of Darwin results in yet another conflict. If misinterpretation of the historical significance of Darwin's works in the

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<sup>104</sup>Harrison, 95.

<sup>105</sup>Jeffrey, Moran, *American Genesis: The Evolution Controversies from Scopes to Creation Science*, (Oxford: Oxford University Press, 2012), 3.

<sup>106</sup>Moran, 113.

nineteenth century had not occurred, then our contemporaries might be open-minded about religion and science. Admirably, Darwin didn't let the argument between religion and science push him into a corner and minimize his findings. He continued to emphasize that within each of us are the answers to how we accept the relationship between the two. There is much to be gained by keeping an open mind instead of closing either religion or science off to the other.

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