

In our last lesson, we looked briefly at five revolutions: 1) The British Bloodless Revolution, 2) The American Revolution, 3) The French Revolution, 4) The Russian Revolution, and 5) The Industrial Revolution. In this lesson we will look at another revolution, the Scientific Revolution.

### **Church attacks on Copernican Science were philosophical**

The start of modern science is usually associated with the Polish astronomer Copernicus. The most influential cultures, Greek, Arabic, and Chinese had a well-developed knowledge of the world. Yet the science of the ancient world was rooted more in philosophy than science with Aristotle seen as the “final authority.” The major advances of the ancients were in mathematics, algebra, geometry and astronomy. Perhaps the reason for this is that these fields were more readily advanced by logic than experimentation. Francis Schaeffer says that “medieval science was based on authority rather than observation.” Modern science or the Scientific Revolution began amid the “High Renaissance” and the Reformation. “In 1546 Luther died. Copernicus, the astronomer, lived from 1473 to 1543 and gave a preliminary outline of his theory in 1530 - that is, that the earth went around the sun, and not the sun around the earth.”

During the 1540s, three books were published that changed forever the way the world is seen. “*On the Revolutions of the Heavenly Spheres* by Copernicus was published posthumously; second, Vesalius published his book, *On the Structure of the Human Body* (this book is often spoken of as *De Fabrica*); third, the first edition of a Latin translation of the collected works of Archimedes (287-212 B.C.) was published in 1544 in Basel.” This introduced some of the mathematical methods essential to developing modern science. These books would become keystones to modern science.

The astronomer Galileo Galilei, using the newly invented telescope, began to write about his astronomical findings in his native tongue so the common man could understand his discoveries. In his writings he supported the views of Copernicus, disagreed with Aristotle’s views of the universe, and wrote extensively of his findings about the makeup of the universe. Galileo came under condemnation by the Roman Inquisition in 1632 and was forced to recant his statements about Copernicus and Aristotle. Yet he continued writing “not only that Copernicus was right, but also that Aristotle was wrong.” Many have incorrectly suggested that the Church attacks on Copernicus and Galileo were made because their “theories” contradicted the Bible, the opposite is true. Copernicus and Galileo’s views did not conflict with the Bible but their views did conflict with Aristotle and thus the Roman Church of the day. “When the Roman Church attacked Copernicus and Galileo (1564-1642), it was not because their teaching actually contained anything contrary to the Bible. The church authorities thought it did, but that was because Aristotelian elements had become part of church orthodoxy, and Galileo’s notions clearly conflicted with them.”

## Scientific aspects of biblical influence

The Bible provided the basis for the rise of the Scientific Revolution and Modern science was born from a biblical worldview. Early scientists accepted that the world was created by a personal, intelligible, knowable God, and that they could learn the truth “about nature and the universe” because of reason. “Christian thought-forms” even influenced those who were not believing Christians. Schaeffer explains; “. . . the Christian thought-form of the early scientists gave them the faith in the possibility of science.” Without having “the faith in the possibility of science,” that the world was created by a personal God, the early scientists would not have been thought it possible to understand the world by observation and experimentation. This became the basis for the birth of modern science in the western world. Because there was personal God it was possible to know that there was “a correlation between themselves as observers and the thing observed - that is between subject and object.” Christianity gave birth to modern science “because it insists that the God who created the universe has revealed Himself in the Bible to be the kind of God He is . . .” and “the belief that God as the Creator and Lawgiver has implanted laws in His creation which man can discover.”

Let's look at some of the “founders” of modern science that were strongly influenced by their Christian worldview.

## Examples of biblical influence

Francis Bacon was a lawyer, essayist, and Lord Chancellor of England. He was cut from different cloth than those of his peers who continued to accept recognized authorities as their guiding light. Rather than authorities, Bacon “stressed careful observation and a systematic collection of information - to unlock nature's secrets.” Francis Bacon (1561-1626) was a man who firmly believed in the Bible's view of the fall of man and man's rebellion against God. Bacon, who was known by some as “the major prophet of the Scientific Revolution,” said: “Man by the Fall fell at the same time from his state of innocence and from his dominion over creation. Both of these losses, however, can even in this life be in some parts repaired; the former by religion and faith, the latter by the arts and sciences.” Bacon, like the other early founders, “. . . did not see science as autonomous.” And like science, man also is not autonomous. We are to take seriously what the Bible teaches about man, history, and what has taken place within God's creation. It is “upon the base of the Bible's teaching, science and art are intrinsically valuable before both men and God. This gave a strong impetus for the creative stirrings of science to continue rather than to be spasmodic.”

Sir Isaac Newton (1642-1727), who as a young professor in his twenties at Cambridge University, recognized that “there is a universal force of attraction between every body in the universe and that it must be calculable. That force he called gravity.” He subsequently wrote a book, *The Mathematical Principles of Natural Philosophy*, in 1687, arguably one of the most influential books ever, detailing his observations. He also recognized and developed the theory of the speed of sound. Newton was able to

calculate the speed of sound “by timing the interval between the sound of an object which he dropped, and the echo coming back to him from a known distance.”

Newton is best known for his writings about gravity and the speed of sound, what isn't as well known is that he was a devoted Christian and wrote prolifically about the Bible. Like many early scientists, Newton was criticized for not concerning himself with the question of why. He, again like many scientists of his day, didn't worry about the why because he accepted that all creation had been created by a personal God. In his later years, Newton turned his attention writing “more about the Bible than about science.” We must recognize that for Newton it was the same God who had created the universe, whose truths could be learned from observation and experimentation, who had revealed Himself and His truths to His people in the Bible.

Blaise Pascal (1623-1662) was a man of great talents and abilities. He developed the first successful barometer and made major contributions in the study of the equilibrium of fluids. For example, he “took a tube of mercury up the mountain Puy de Dôme (in central France) and thus recorded the changes in the mercury level according to altitude.” Pascal was also a noted mathematician and his work played an important part in developing differential calculus.

Perhaps Pascal's greatest contributions were not in science or mathematics but in literature. He is accepted by many as the, or at least one the, greatest writers of French prose who ever lived. Pascal, as a Christian, understood people as special because they were created in the image of God and more important Christ had died on a cross for them. He saw people as not just a part of nature, or as Schaeffer suggests “he did not see people lost like specks of dust in the universe.” Pascal saw people as the creation of God that gave life meaning in that it was man that could comprehend the universe not the universe comprehending man.

A later day scientist was Michael Faraday (1791-1867). He is best known for his major contributions in electricity. It was Faraday who discovered the induction of electric current. Faraday, like the others we have listed, was also a Christian. Schaeffer tells us that Faraday “. . . belonged to a group whose position was: Where the Scriptures speak, we speak; where the Scriptures are silent, we are silent.” Like the scientists we have mentioned, Faraday understood man was created in God's image and nature was created for man. He rejected the idea that man was created for nature.

### **Shift in modern science**

Science and discovery continue today but for the most part without the advantage of the Christian worldview and as a result there has been a not so subtle change of emphasis. The biblical emphasis on an “ordered creation reflects the nature of reality and is therefore acted upon in all cultures” despite what their worldview might be. Mankind acts on an assumption of order not chaos. Today many think that the concept of an orderly universe is no longer accurate. More important they do not recognize a universe or a world that was created for man by God. They see man as created for the

universe, that man is just part of some great “cosmic machine.” This represents a clear change in conviction from earlier modern scientists.

The Greek philosopher Plato recognized that “regardless of what kind of particulars one talks about, if there are no absolutes - no universal - then particulars have no meaning.” The universal or absolute is that under which all the particulars fit - that which gives unity and meaning to the whole. Philosophers from Plato on have recognized that it is absolutes or universals that give meaning to individual particulars. This is most easily understood in terms of morals. “If there is no absolute beyond man’s ideas, then there is no final appeal to judge between individuals and groups whose moral judgments conflict. We are merely left with conflicting opinions.” The argument can also be made for man’s existence. If our existence is to have meaning then there must be an absolute, a universal, which gives our existence meaning.

Today there has been a shift not in science but in the worldview of the scientists and philosophers. The Christian worldview sees God and man as outside of the cause-and-effect of the universe or cosmos. In this view, God and man could influence nature or what is called “the machine” by Schaeffer. In the worldview of the modern scientists changed and today man is no longer outside the machine, man is just part of the machine and God has been removed from the picture. It is critical that we remember that it was not science that brought them to this point but their worldview.

In a closed system of cause-and-effect there is no place for a living God and there is no place “for man as man.” In fact, as Schaeffer explains, there is not room for much in a closed cause-and-effect system. “There is no place for love in a totally closed cause-and-effect system. There is no place for morality in a totally closed cause-and-effect system. There is no place for the freedom of people in a totally closed cause-and-effect system. Man becomes a zero. People and all they do become only a part of the machinery.”

Charles Darwin (1809-1882) furthered this worldview by teaching that all life evolved through the survival of the fittest. There are serious problems with this theory, do I dare say flaws, that have never been satisfactorily explained by Darwinists or Neo-Darwinists. This fact has not prevented this theory from gaining dominance in our current culture. Statistically there is no proof chance could have produced the complex world we live. Schaeffer says: “Statistical studies indicate that pure chance (randomness) could not have produced the biological complexity in the world out of chaos, in any amount of time so far suggested. Has there been enough time for natural selection, as it is seen through the eyepieces of Darwinism or Neo-Darwinism to operate and give rise to the observed phenomena of nature? No, say these mathematicians.” Schaeffer continues saying: “Most importantly, no one has yet shown how man could have been brought forth from non-man solely by time plus chance.”

The popularization of Darwin’s ideas by Thomas Huxley (1825-1895) and Herbert Spencer (1820-1903) “extended the theory of biological evolution to all of life, including ethics.” This opened a “barn door” that is still open and may never be shut until Christ

comes again. The idea of the survival of the fittest supported the proponents of racism and the noncompassionate use of wealth. We have seen the natural conclusion of this thinking in the rise of Nazi Movement in Germany. Without having a biblical world, people of Germany could not withstand the impact of Darwinism on them and their culture. Although we cry out against the death and hatred of the Nazis, we have not yet encountered the full natural conclusion of Darwinism as it will be presented to us as genetic engineering.

Is it just an accident that we have seen the rise of the most brutal, authoritarianism regimes in the history of man in the twentieth century? How many citizens have died through the hands of their own governments under the guise of making things better for average citizens? A conservative estimate would be thirty to forty million people have been murdered by the governments that were to protect them. How many may die to provide a supply of transplantable body organs to enable the "fittest" to survive? What is the cost of "stem cell research" among the unborn? Are we entering a period that will give us a new definition of death to support those who are deemed more worthy of living?

Without the absolutes of the Bible, there are no absolutes except those arbitrary rules established by either popular or political consensus. Without absolutes, there are no boundaries between what we can do and what we should do - nothing is out of bounds.

Every day some scientist or politician is suggesting that the government do this or that to make our lives better. The only problem is that we might not consider it making our lives better. Should we force people to be tranquilized to limit or eliminate human aggression? Should we require all politicians be medicated to control hostility? Should we sanction mass sterilization where population growths are more than wanted by government? Should we end the lives of those who for reasons of health will only be a drain on either their families or the state, using resources better used for someone who can make a positive contribution? Should we shut down all fast-food operations as unhealthy for the general populace? Should we require everyone to wear seat-belts, or carry health insurance, or stop smoking, to get flu shots, to pay for services given free to illegal aliens? Who is going to control those who are in control? If man is just a "machine" what is the value of biological continuation?

Today, Humanism says: ". . . that there is only the cosmic machine, which encompasses everything, including people." In this view everything is explained by being man being part of the "closed system." Schaeffer explains that "To those who hold this view everything people are or do is explained by some form of determinism, some type of behaviorism, some kind of reductionism. The terms, determinism or behaviorism, indicate that everything people think or do is determined in a machinelike way and any sense of freedom or choice is an illusion. In one form of reductionism, man is explained by reducing him to the smallest particles which make up his body. Man is seen as only the molecule or the energy particle, more complex but not intrinsically different." How far have we fallen from the "pride of man in the High Renaissance and the Enlightenment down to the present despair." Today there is no

place for God, no place for love, freedom or significance. Man is only a machine, but can man live like a machine? If man is a machine what can he find to give meaning to life?

### **Need to reaffirm the original base for modern science**

This despair of man, this despair of man in our culture and in our society is so unnecessary. At the risk of oversimplifying, the problem is our starting point, the answer to the question; where did we come from? The biblical worldview says that world, the universe was created by God who could make something out of nothing and He was responsible for making man in His image. In the biblical worldview man is not a machine but a being, created in the image of a personal God, who cares about him. In the biblical worldview man need not despair but trust and have faith in His creator.

For the humanist, it is a bit more of a problem. Some humanists who might believe creation from nothing, absolutely nothing, is possible. However, although possible in theory, creation from absolutely nothing seems to be “unthinkable.” There is not much of an answer there. Well then if one does not subscribe to something from nothing, then for the humanist, there must be something that has always existed. This something must be either an atom or a molecule, or the energy particle, and then everything, including life and man, comes forth by chance from that. Hmm, that does not seem like much of an answer either. Is it any wonder man is in despair?