

SCIENCE VERSUS GOD IN SIKHISM

Written by Dr. Devinder Singh Sekhon PhD
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Many people believe that the advances in science put a question mark on the existence of God (or Waheguru). Many people even ask me that how I can have such a strong faith in the existence of God when I hold two PhD degrees including one in Chemistry. They do not realize that the more we discover about the nature and its laws, the more we are impressed by the ways the nature is working and stronger becomes the faith in Waheguru Who has created such a wonderful universe.

Before we continue, let us discuss science itself. Science is simply the organized study of nature and its laws.

create laws.

Science does NOT

All the laws governing the working of the universe have been created by God. In fact, God created the universe based on some laws.

One of the main meanings of the word, “Huqam” in Guru Granth Sahib is the laws of nature as created by Waheguru. There are many holy Shabads in Guru Granth Sahib that clearly state that the universe came into being based on the laws of nature. As an example, listen to this holy Shabad by Guru Nanak Sahib.

ੴ ਸਤਿਨਾਮੁ ॥ (ੴ ਸਤਿਨਾਮੁ 2) ਹੁਕਮੀ ਹੋਵਨੀ ਆਕਾਰ ਹੁਕਮੁ ਨ ਕਹਿਆ ਜਾਈ ॥ ਹੁਕਮੀ ਹੋਵਨੀ ਜੀਅ ਹੁਕਮੀ ਮਲਿਕੈ ਵਡਿਆਈ ॥ ਹੁਕਮੀ ਉਤਮੁ ਨੀਚੁ ਹੁਕਮੀ ਲਖਿ ਦੁਖ ਸੁਖ ਪਾਈਅਹੀ ॥ ਇਕਨਾ ਹੁਕਮੀ ਬਖਸੀਸ ਇਕੀ ਹੁਕਮੀ ਸਦਾ ਭਵਾਈਅਹੀ ॥ ਹੁਕਮੈ ਅੰਦਰਿ ਸਭੁ ਕੋ ਬਹੁਰੀ ਹੁਕਮੁ ਨ ਕੋਇ ॥ ਨਾਨਕ ਹੁਕਮੈ ਜੇ ਬੁਝੈ ਤ ਹਉਮੈ ਕਹੈ ਨ ਕੋਇ ॥

Meaning: All bodies come into being by Waheguru’s command (Laws). But those laws are indescribable (for example the detail of formation of the universe). All living beings are produced by His laws, and people earn respect according to the laws too. People good or bad in accordance with His laws and they also enjoy or suffer in life according whatever has been written for them according to the laws (deeds). Some people find contentment according to His rules while others are born again and again. Everybody has to follow His laws and nobody is

beyond them. If a person comes to realize that everything happens according to His laws, he quits selfishness.

ੴ ਸਤਿਨਾਮੁ (ੴ ਸਤਿਨਾਮੁ 3):----- ਹੁਕਮੀ ਹੁਕਮੀ ਚਲਾਏ ਰਾਹੁ ਨਾਨਕ ਵਗਿਸੈ ਵੇਪਰਵਾਹੁ

Meaning: The laws maker Waheguru runs the universe with His laws. With the Laws in place, He is carefree and watches His creation happily.

ੴ ਸਤਿਨਾਮੁ ੴ:1, ਸਤਿਨਾਮੁ 5 (223):--- ਏਕੋ ਹੁਕਮੁ ਵਰਤੈ ਸਭ ਲੋਈ ਏਕਸੁ ਤੇ ਸਭ ਓਪਤਿ ਹੋਈ

Meaning: The whole universe has been created by Waheguru alone, and His laws are working everywhere.

There are many more holy Shabads like these which clarify that Waheguru's laws are governing the universe. It is a different story that humans have uncovered those laws by the use of science over a large span of time and used them to make life more (or less) comfortable. Let us discuss some of the important laws of nature which have been in existence ever since the formation of the universe.

1. **The law of gravitation** (mutual attraction of the heavenly bodies): This is one of the most useful laws and keeps all the stars, planets and the galaxies in their relative positions. Without gravity, there will be a chaos in the universe and the heavenly bodies will be colliding with one another all the time. Simply stated, the existence of the universe as we see it, would not have been possible. The interesting thing is that despite all the wonderful advances of science and technology, scientists still do not know how gravity works.

2. The law of pressures: Fluids (liquids and gases) flow from higher to lower pressure under normal circumstances until the pressure is equalized. Winds blow according to this law. This law allows propeller aircrafts to fly, and helicopters to fly and stay at one spot. We can drink with a straw because of this law. There are many more examples in our daily life where this law applies.

3. The laws of electromagnetism: We are very proud of our recent advances in science and technology which include radio, television, phones (including cell or mobile phones) fax machines, X-rays, Ultrasound, MRIs and so on; but all these wonderful inventions are based on the natural laws of electromagnetism which have been in existence ever since the universe came into being. A current-carrying wire generates a magnetic field around it, and if a closed loop of wire is rotated in a magnetic field, a current is generated in the loop. These relationships allow us to develop useful machines some of which are listed above.

4. The law of inter-conversion of different forms of energy: The inter-conversion of one form of energy into another is a fundamental law of nature. The most common forms of energy are mechanical, heat, light, sound, and electricity. They can all be converted from one form into another. For example mechanical energy in the form of rubbing two surfaces against each other can be converted into heat. We see electricity in the form of lightning being converted into first heat and then sound. The heat generated by lightning causes the surrounding air to expand which gives rise to sound. Similarly, we see some of the heat energy of the Sun getting converted into light energy. When you hit a hard surface with another hard object, you hear a thud. Again you see a part of mechanical energy being converted into sound energy while the rest changes into heat energy.

5. Inter-conversion of matter into energy: Do you know how the sun produces energy? Hydrogen gas in the Sun constantly gets converted into helium gas. During this conversion an extremely small amount of mass (weight) is lost per atom of helium. This lost mass actually gets converted into heat energy. Einstein gave us the relation between mass, m , and the energy, E for such a conversion as follows: $E = mc^2$ where c is the velocity of light which is 300,000 km/s. Now Einstein (or any other scientist) did not create this wonderful law – God created it. Einstein simply discovered the mathematical relationship.

There are many other laws of nature which govern the universe, but the point being made here is that scientists do not create laws, they simply put them to use.

Some other wonders of Nature:

1. Rotation of the Earth and the tilt of its axis: To create days and nights, the earth rotates on its own axis. It takes exactly 24 hours to do so. But the more amazing thing is that the axis of the earth is not vertical; it has a tilt of about 23

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which gives rise to changes in seasons. If the axis were vertical, we will have the same season throughout the year. Countries closer to the poles would always be cold, and near the equator, they would always be hot. It is a wonder of Nature that the axis is tilted to produce changes in seasons. The interesting thing is that even though the moon is so close to the earth, its axis is vertical. Is not this a great phenomenon!!

2. Unique characteristics of water: Almost all liquids shrink in volume when they freeze with one big exception – water- which expands on freezing . It is such a marvel of nature!

Science has not created this phenomenon. Water is the most important requirement for all life to exist. Now imagine what would happen if water also shrank when it freezes into ice. In that case ice would be heavier than water and would sink to the bottom of the lake, river or the ocean during cold months when water freezes into ice. When ice sinks to the bottom, the top layer of water would again freeze and sink to the bottom exposing fresh water layer to the cold air. This cycle would continue until the whole lake, the river or the sea froze as it can easily happen in northern parts of both the hemispheres. In that case all the water life would be dead and there will be no water for humans and the land animals for use. But fortunately, due to this marvelous law of nature that ice is lighter than water, the entire lake, the river or the sea does not freeze because ice, being lighter than water covers the top of the large water bodies thereby protecting the lower layers of water from freezing. The bottoms of rivers and lakes hold water which is used by all the cold countries. When we learn about such marvels of God through science, our faith in Him becomes stronger not weaker.

3. Body structure and body functions: The structure and the functioning of the human body (or any other animal) is another great marvel of nature. When you learn about the structure and the functioning of the human body, you are overcome by awe. This wonderful machine is so complicated, yet perfect. The whole body functions are controlled by different mechanisms. You are told by these mechanisms that now you are hungry, thirsty or sleepy. Similarly, there are mechanisms to advise you that now you need to go to the bathroom and there are mechanisms to help you to cope with dangerous situations and so on. Appropriate hormones

are produced by the body when needed. For example when too much sugar is produced in the body after you have eaten food, the hormone insulin, is injected into the blood stream that converts the excess sugar into energy which is stored in the body for later use. Likewise, the hormone adrenalin is pumped into the blood stream when your body needs more energy to fight a dangerous situation. It is also amazing to learn how blood is circulated throughout the body and is supplied in larger quantities to the vital organs under special circumstances. There are zillions of friendly bacteria in our body which fight diseases. Soon after a cut, the flowing blood begins to turn into a semi solid to provide a protective covering to stop the further flow of blood. All these are natural phenomena. The scientists simply make use of these natural phenomena (or laws) to improve the body functions. Is not it wonderful that God has created a natural antidote for all diseases. Homeopathy is based on natural cures. The amazing body machine has been constructed by God and not by scientists. Yes, scientists can repair it or make it stronger, but cannot do anything against the Natural laws.

4. The cleaning system of the environment: You are wonder-struck to learn about the cleaning cycle of the environment. Scavengers like vultures, kites, dogs, many rodents and so on, keep the environment clean. Have you ever watched how crows and some other birds eat away ticks from the domestic animals thereby cleaning them? To protect us from the attack of harmful heavenly bodies and harmful particles from the space, God has covered the earth with a thick blanket of air. The top layer of the earth which has ozone gas protects us from the harmful UV rays.

Both carbon dioxide and nitrogen are very important gases which are present in the air. To keep a healthy balance of them in the atmosphere, God has created carbon dioxide and nitrogen cycles. When carbon dioxide is produced by the burning fuel and by living beings when they breathe, it is consumed by vegetation as food. Similarly, on one hand nitrogen is consumed by vegetation as food, while on the other hand, some bacteria convert the dead plants into nitrogen. Same is true of the water cycle. I could go on and on and a big book can be written just on describing the amazing body functions and the environment.

5. Beauty in Nature: Look at the beautiful multi colours in the feathers of some birds, especially the peacock and some parrot-like birds of South America. Also, look at the variety of colours in a single petal of some flowers. You are taken by awe at the beauty of nature which is in abundance. There are awe-inspiring tall mountains, beautiful rivers, springs and falls, and deep and vast oceans. The following holy Shabad in Assa Di Vaar shows the deep understanding of nature and its admiration by Guru Nanak Sahib.

ੴ ੴ ੴ ੴ ੴ :1(463): ਵਸਿਮਾਦੁ ਨਾਦ ਵਸਿਮਾਦੁ ਵੇਦੁ ਵਸਿਮਾਦੁ ਜੀਅ ਵਸਿਮਾਦੁ ਭੇਦੁ ਵਸਿਮਾਦੁ ਰੂਪ ਵਸਿਮਾਦੁ ਰੰਗੁ ਵਸਿਮਾਦੁ ਨਾਗੇ ਫਰਿਹੰ ਜੈਤੁ

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ਵਸਿਮਾਦੁ ਪਉਣੁ ਵਸਿਮਾਦੁ ਪਾਣੀ॥ ਵਸਿਮਾਦੁ ਅਗਨੀ ਖੇਡਹੀ ਵਡਿਣੀ॥ ਵਸਿਮਾਦੁ ਧਰਤੀ ਵਸਿਮਾਦੁ ਖਾਣੀ॥ ਵਸਿਮਾਦੁ ਸਾਦੀ ਲਗਹੀ ਪਰਾਣੀ॥ ਵਸਿਮਾਦੁ ਸੰਜੇਗੁ ਵਸਿਮਾਦੁ ਵਜਿਗੁ॥ ਵਸਿਮਾਦੁ ਭੁਖ ਵਸਿਮਾਦੁ ਭੋਗੁ॥ ਵਸਿਮਾਦੁ ਸਫਿਤੀ ਵਸਿਮਾਦੁ ਸਾਲਾਹ॥ ਵਸਿਮਾਦੁ ਉਝੜ ਵਸਿਮਾਦੁ ਰਾਹ॥ ਵਸਿਮਾਦੁ ਨੇੜੇ ਵਸਿਮਾਦੁ ਦੂਰ॥ ਵਸਿਮਾਦੁ ਦੇਖੈ ਹਜ਼ਰਾ ਹਜ਼ੂਰ॥ ਵੇਖੀ ਵਡਿਣੁ ਰਹਿਆ ਵਸਿਮਾਦੁ॥ ਨਾਨਕ ਬੁਝਣੁ ਪੂਰੈ ਭਾਗ॥

Meaning: Hey Nanak! Only very lucky people learn the deep secrets of Nature. For those who understand the secrets, the different types of music playing in the world (instrumental, due to the flow of the wind and the rivers, the chirping of the birds and so on), is mesmerizing; and so is the knowledge.

All the living beings and their varieties inspire awe (the way they live either in herds or individually, the way they gather their food, the way they reproduce, and the way they cope with the changing environment).

The beauty of the living beings and their different colours are amazing.

It is also amazing to see how the animals can survive without any clothes in the harsh environment and the way they protect themselves from their attackers (some have thickly padded feathers, some have wool to cover their bodies in cold, some, like tortoises, have very hard shells, while some others like porcupines have sharp needles covering their bodies. Some use poison to attack or to protect themselves while some others have horns).

The characteristics of water and air are also amazing.

Not only water is home to countless life forms and sustains all life, but it also can be used as a means to travel and as a source of energy. Its waves can also have a great destructive power. Likewise, other than supporting life, it is required by birds and some aircrafts to fly. It also carries tremendous amounts of energy which can be used for constructive or destructive purposes. Fire also has amazing powers and is used for heating and cooking purposes as well as destructive purposes.

The role of the earth also produces mesmerism as it produces all vegetation and countless minerals. Earth is also used to build bricks used in buildings and also to make earthenware. The different sources of reproduction of life also produce amazement (According to Guru Nanak Sahib, there are countless ways in which life is reproduced).

It is also amazing to note how many different tastes there are and how a single tongue can distinguish between so many different tastes. It is also amazing to note how and separation invokes different responses from living beings. For example, it is amazing to see how meeting between the same two people under different circumstances can invoke totally opposite emotions. It could be extremely joyous or very painful.

The effects of hunger and those of food on people can be very amazing.

Praise (of Waheguru) can produce dramatic effects on people and.

It is also amazing to observe how some people stay on course while some others are badly misled.

It is unbelievable to see so much diversity among people in their views about God. Some people think that He is very close while some others think He is somewhere far, far away.

At the same time, some people believe He is everywhere.

Guru Nanak says that He feels mesmerized to see such diversity and wonders in nature.

But only highly lucky people note such deep differences in nature.

Theory of Evolution: Some people argue that the theory of evolution excludes the need of God to run the universe. I do not know where they get this idea. The Theory has nothing to do with the existence or non-existence of God. It never said that man has evolved from monkeys. The Theory simply maintains that the individuals with stronger traits (or genes; but genetics was not known to Darwin) within a species have better chances of survival. Animals with changing environments also undergo some physical changes to cope better with the environment. For example goats in the plains of India have much less body hair than goats on the high altitudes of Himalayas where the climate is much colder and they need more hair on their body to protect them from the cold. Darwin did not explain how the changes take place. But clearly, it is a law of nature that animals suitable to a given environment flourish there much better than some other animals.

We all know that camels are most suited to deserts because

GOD

has given them the ability to go without water for many days at a stretch, and their feet are most suitable to walk on sand. There is absolutely nothing in Darwin's Theory that questions the existence of God. Evolution is a fundamental law of nature.

According to the American Geological Institute, the four most important features of Darwin's Theory of Evolution are as follows:

1. Variation exists among individuals within species as can be seen among domestic animals. Breeders of animals and plants use these diverse characteristics to establish new varieties of dogs, cats, pigeons, wheat, and cotton etc. This variation in plants enables some individuals to survive application of insecticides and produce offspring that inherit this resistance to the insecticides.

2. All living beings produce more offspring than can survive to maturity. For example a female salmon (a variety of fish) produces about 28,000,000 eggs when spawning. Darwin calculated that in elephants, which are among the slowest breeding land mammals, if all of the potential young of a single female survived and reproduced at the same rate, after 750 years, the descendants of the single mother could number 19,000,000!! Naturally not all of the offspring survive.

3. Competition exists among individuals. Regardless of the rate of reproduction in species, all of the young do not survive to become reproducing adults. This fact indicates that large number of offspring is somehow eliminated from the population. Some certainly die by accident; but most of them succumb to competition with other individuals. The most intense competition may be among individuals of the same species who compete for nearly identical environmental requirements. That is where the "survival of the fittest" fits in. The more aggressive and stronger surviving individuals pass on their genes to the next generation. (As mentioned earlier, Darwin was not aware of the gene factor. He used the term characteristics).

4. The organisms whose variations best fit them into the environment are the ones who are most likely to survive, reproduce and pass those desirable variations on to the next generation. Some variations certainly lower the chances of survival, such as hemophilia in mammals, albinism in many wild animals or unusually thin shells in clams living where there are numerous hungry snails. On the other hand some variations are helpful. For example any variation that increases water retention in a desert plant will favour survival of the plant to reach maturity.

Darwin called the process by which favourable variations are passed from generation to generation "Natural Selection".

This is the gist of Darwin's Theory of Evolution. I do not see anything at all in this Theory that goes against the existence of God as defined in Guru Granth Sahib. The cross breeding between a horse and a donkey to produce a mule has been there as far as the history goes back. Similarly grafting in fruit trees to improve the fruits has been used all the time. So, where is opposition?

I will end this article by saying that more the discoveries that are made by science, the more they uncover the amazing secrets of nature and more strongly they prove the existence of God. Guru Granth Sahib is not against science.

Even though Guru Nanak Sahib did not come on this earth to teach us science, but He Himself has made many revelations about this wonderful universe.

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