

## FEATURE ARTICLES

# SIKHISM SCIENTIFIC AND LOGICAL RELIGION FOR THE THIRD MILLENNIUM AND BEYOND\*

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### ABSTRACT

ਖੇਜੀ ਉਪਜੈ ਬਾਦੀ ਬਿਨਮੈ ਰਉ ਬਲਿ ਬਲਿ ਗੁਰ ਕਰਤਾਰਾ ॥ Guru Nanak

*Sikhi (Sikhism) is most scientific and logical religion founded by Guru Nanak during the 15<sup>th</sup> century when science was emerging as a very important subject in Europe that challenged many religious concepts. Sikhism is based on the philosophy revealed by Guru Nanak that was further strengthened and preached by the Sikh Gurus who succeeded to the House of Nanak. His philosophy is termed as Nanakian Philosophy. Although the Sikh theologians keep science and Nanakian Philosophy far apart from each other, nevertheless, Nanakian Philosophy is most scientific and logical and many verses have been cited in this article to support this thesis. Since science and Nanakian Philosophy go hand in glove, therefore, good knowledge of science is necessary to understand and interpret Nanakian philosophy in its real perspective. Although Guru Nanak has used scientific information and logic to explain his philosophy, in many verses he has also quoted allegoric expressions, ancient mythology/philosophy and rituals to make the people to understand his philosophy. However, it is important to keep in mind that such allegoric expressions, ancient mythology/philosophy, and rituals do not form the part of his philosophy. Since Sikhism is scientific and logical religion, therefore, it can be universally accepted by the generations of humanity to come during the Third Millennium and beyond, if it is taught/preached scientifically and logically. Moreover, scientific and logical interpretation of Nanakian Philosophy will also resolve once for all the persistent controversy: Whether Sikhism is a sect of Hinduism or Islam or syncretism of both. Or it is an independent, unique, and scientific and logical religion for the humanity of the*

### INTRODUCTION

**G**uru Nanak (1469-1539) laid the foundation of *Sikhi (Sikhism)* during the 15<sup>th</sup> century, the Period of Renaissance (between 14<sup>th</sup> century and 17<sup>th</sup> century) when the scientists were challenging some of the concepts of the Church in Europe. During this period Guru Nanak was busy in challenging the ancient mythology and rituals in which the peoples of South Asia were shackled for centuries and were unable to express their free will in any aspect of their lives because their lives were controlled by their religious mentors.

How difficult and risky it is to challenge the religious authorities? I would like to record here some of the punishments given by the church to those who raised their voices against some concepts of the church as reported by Bender and Leone [3]:

- Roger Bacon, a 13<sup>th</sup> century English priest, spent the final 14 years of his life in a dungeon for writing that in the quest for truth, experimentation and observation are valid challenges to the uncritical acceptance of spiritual and secular authorities.

(\* Slightly modified form of the paper presented at the International Seminar, SIKHISM: A RELIGION FOR THE THIRD MILLENNIUM, held at the Punjabi University, Patiala, India on March 27-29, 2000)

- In spring of 1633, Galileo, an Italian scientist, was imprisoned for life for challenging the concept of the church that earth is the center of the universe and sun revolves around the earth.
- During the 19<sup>th</sup> century, Charles Darwin was mocked and maligned for claiming that all living things evolved from lower life forms.
- In 1925, John Scopes, a high school biology teacher from Dayton, Tennessee was accused and convicted of violating a state law, which specified that only divine creation, as an explanation for the origin of life, could be taught in Tennessee public schools.”

Since the truth is eternal, it cannot be kept concealed forever. Recently, Easterbook [7] had reported that the church has finally accepted the truth of those persons who were cruelly treated by the Church for their so-called heretic acts:

“The Vatican has at last formally apologized for its arrest of Galileo, while last fall Pope John Paul II gingerly acknowledged evolution to be, ‘more than just a hypothesis.’ Later this year, the Fuller Theological Seminary in Pasadena, California, the intellectual hub of conservative Protestant denominations, will publish a book acknowledging a natural origin for the human family tree. And increasingly, spiritual thinkers are endorsing the proposition of German theologian Dietrich Bonhoeffer, who wrote in the early 1940s that growing understanding of natural world simply means people need no longer look to the church for answers to questions they can now answer for themselves.”

Recently John Paul II [13] has also apologized for all the atrocities rendered during the last two millenniums by the church on Jews, Muslims, Protestants, Scientists, women, etc. in the document, **Memory and Reconciliation of the Past.**

If the theologians can understand that since everything (including religion) in this universe is the creation of the Almighty then it should not be a problem for them to understand that science is also the creation of the Almighty. Then will the principles of science go against the principles of religion?

The answer is positively no, provided the religion is represented in its real perspective. We are passing through a period of Science Age (variously called as Space Age, Computer Age, Information Age, etc.). Therefore, any principle, that is unscientific or illogical, is taught in any religion, that religion is not going to stay very long during the next century or third millennium. I am proud to present today that Sikhism, based on the Nanakian Philosophy, will stay during the 21st century and beyond provided it is preached and

taught scientifically and logically in its originality and entirety to the humanity of this planet, the Earth.

Guru Nanak promulgated a unique philosophy that is scientifically and logically very sound having universal acceptability. His philosophy is termed as **Nanakian Philosophy**. It was preached and enriched by the nine succeeding Sikh Gurus to the House of Nanak, the **Nanakian School**. The follower of his philosophy is known as the ‘**Sikh**’ and the philosophy is called as ‘**Sikhi**’ in Punjabi. The word ‘**Sikhi**’ (*Gurmat*) gave rise to the modern anglicized word ‘**Sikhism**’ for the modern world.

In this article, firstly, I would like to present a glimpse on the philosophy of Guru Nanak to prove that it allows to question, use of discriminating intellect, to do research to find out the truth, and the freedom of speech. Such freedoms, that are not allowed in many religions, are openly granted to its followers. Secondly I would like to cite some verses of Nanakian Philosophy to prove that it is most scientific and logical religion of the world.

## I. A GLIMPSE OF NANAKIAN PHILOSOPHY

### 1. *Sikhi* (Sikhism) and the Guru

The following verses explains what is a *Sikhi* (Sikhism) and who is the Guru of the Sikhs?  
ਸਿਖੀ ਸਿਖਿਆ ਗੁਰ ਵੀਚਾਰਿ ॥ AGGS, M 1, P 465 [1].

*“Sikhi (Sikhism) is the advice / principle of the Guru's philosophy.”*

Now a question arises who is the Guru in the above stanza? In the following stanza Guru Nanak explains that the ‘*Sabd*’ (word) is the Guru:

ਸਬਦੁ ਗੁਰੂ ਸੁਰਤਿ ਧੁਨਿ ਚੇਲਾ ॥ AGGS, M 1, P 943.

*“Sabd is Guru, consciousness and intention toward it make one its disciple (Sikh).”*

Therefore, ‘*Sabd*’ is the ‘Guru’ for the Sikh as declared by Guru Nanak. The same principle, ‘*Sabd Guru*’ was taught by the Gurus of the Nanakian School in their *Bani* that has been incorporated into the *Aad Guru Granth Sahib* (AGGS) [1]. Similarly, Guru Gobind Singh reiterated that *Sabd* of the Sikh Gurus of the Nanakian School, incorporated in the AGGS, is the Guru of the Sikhs.

### 2. Some Basic Principles of Nanakian Philosophy

#### i) Evaluation of Things/Philosophy

ਪਹਿਲਾ ਵਸਤੁ ਸਿਵਾਣਿ ਕੈ ਤਾ ਕੀਚੈ ਵਾਪਾਰੁ ॥

AGGS, M 1, P 1410.

"Gurbani teaches that one must evaluate the things / philosophy, if convinced, then adopt / follow it."

**ii) Importance of Deliberation/Discussion**

ਸਭਸੈ ਉਪਰਿ ਗੁਰ ਸਬਦੁ ਬੀਚਾਰੁ ॥ AGGS, M 1, P 904.

"Highest importance is given on the deliberation / discussion on the sabd (philosophy) of the Guru (in the AGGS)."

**iii) Freedom of Expression**

There is complete freedom of expression in Sikhism. And discussion can only be held if one listens to others and expresses one's views to the others:

ਜਬ ਲਗੁ ਦੁਨੀਆ ਰਹੀਐ ਨਾਨਕ ਕਿਛੁ ਸੁਣੀਐ ਕਿਛੁ ਕਹੀਐ ॥

AGGS, M 1, P 661.

"As long as one lives in this world one must listen others and express oneself to the others (to find the truth)."

**iv) How to Resolve Doubts?**

The above philosophy (ii & iii) has been confirmed by Guru Arjan, that if there is any doubt that can be resolved by sitting together in *sangat* (congregation) and discussing the matter fully attuned:

ਹੋਇ ਇਕਤ੍ਰ ਮਿਲਹੁ ਮੇਰੇ ਭਾਈ ਦੁਬਿਦਾ ਦੂਰਿ ਕਰਹੁ ਲਿਵ ਲਾਇ ॥

AGGS, M 5, P 1185.

"Resolve the doubts by discussion and sitting together while attuned to the Almighty."

**v) Discriminating Intellect:**

There are many people, who may be called intellectuals but very few are there, who have the discriminating intellect to distinguish between good and bad, true and false, right and wrong, etc.

ਬੁਝੈ ਬੁਝਨਹਾਰੁ ਬਿਬੇਕ ॥ AGGS, M 5, P 285.

"Those who have discriminating intellect can understand things in their real perspective."

ਸੋ ਧਨਵੰਤਾ ਜਿਸੁ ਬੁਧਿ ਬਿਬੇਕ ॥ AGGS, M 5, P 1150.

"The one, who has the discriminating intellect, is wealthy in knowledge (wise)."

**vi) Importance of Research:**

Gurbani explains that those who research progress: ਖੋਜੀ ਉਪਜੈ ਬਾਦੀ ਬਿਨਸੈ ਹਉ ਬਲਿ ਬਲਿ ਗੁਰ ਕਰਤਾਰਾ ॥

AGGS, M 1, P 1255.

"The researcher progresses while the other (discursive and aimless) perishes, (Nanak) sacrifices himself on the Guru, the Creator."

**Prevailing Situation**

In spite of the above freedom in the Nanakian Philosophy, the Sikhs have never been encouraged by the Sikh theologians and the Sikh religious authorities to challenge the unscientific and illogical concepts, introduced into Sikhism, and misinterpretation of Gurbani by some of the *Sants, Babas, Kirtanwalas*, and preachers. Moreover, it is also being emphasized that to be a good Sikh one has to follow strictly the ancient traditions without verifying their authenticity and legality; and to accept unscientific and illogical codes and rituals recommended by the Sikh authorities without any reasoning. In most of the cases such recommendations even cannot pass the test of the Gurbani of the Gurus of the Nanakian School incorporated in the AGGS.

Moreover, what is happening in Sikhism is exactly contrary to that what happened in Christianity. During the period of renaissance the scientists were trying to correct the wrong concepts introduced into the Christianity while in Sikhism during the 18<sup>th</sup> and 19<sup>th</sup> centuries the scholars were reintroducing myths and rituals that were condemned and rejected by Guru Nanak and the other Gurus of Nanakian School. Since then Sikhism is continuously being wrapped in a cocoon woven with ancient mythology, unscientific and illogical codes and rituals, and inauthentic

writings. Consequently, it is being represented as mythic and ritualistic religion. Sometime it is represented as a sect of Hinduism or Islam or syncretism of both.

**A Challenge to the Sikh Intelligentsia**

The Sikhs scholars are always busy in defending Sikhism as a unique and independent religion of the world. Recently a controversy that Sikhism (Khalsa) is a sect of Hinduism has been raised again. Now the time has come for the Sikh intelligentsia to prepare a constructive project to settle this persistent controversy: Whether Sikhism is a sect of Hinduism or of Islam or a syncretism of both, or it is an independent, unique, and scientific religion for the humanity of the world.

**II. CONFLICT BETWEEN SCIENCE AND RELIGION**

The conflict between science and religion started during the Period of Renaissance (between 14th and 17th century) when science was emerging as an important subject affecting the lives of human beings and the scientists started challenging certain concepts

of religion in Europe.

Barbour [2] put the above situation as follows:

*“The combined effect of the three movements - neo-orthodoxy, existentialism, and language analysis - has been to isolate science and religion from each other. The distinctive features of religion - namely revelation, personal involvement, and endorsement of a way of life - are held to be absent from science. There can be no significant dialogue if there are no common interests and no points of contact between the fields. As an example, we have shown that in each case the doctrine of creation is said to have nothing to do with evolution or astronomy. All the three movements discourage the construction of any general picture of reality and abandon the search for inclusive metaphysical categories. Science and religion are left each to its own specialized job, each to accomplish its own purposes in its own way. There can be no conflict between them; but neither can there be fruitful communication.”*

The same situation is found in Sikhism. Some Sikh theologians are trying their best to keep science and religion as two separate fields. While discussing with the ardent theologians it becomes very clear that they are not ready to give any place to science in Sikhism and Gurbani. We are now living in the Science Age and it will be very difficult for us to escape from the effect of science on our lives and thinking. For example, if any religion teaches something like that the sun revolves around the earth, people are not going to

accept it when the scientific evidence is that the earth revolves around the sun. There were many metaphysical phenomena in various religions that have now been found through

science to be of physical, chemical, or biological orders. Similarly any other metaphysical phenomena of any religion if cannot be explained by science today, the time is not far off when all such phenomena will be explained scientifically and logically tomorrow. But some Sikh theologians sternly believe that Gurbani cannot be explained or understood through science and logic. It can only be understood by attaining the ਅਨੁਭਵ (*Anubhav*) through regular long hours of *Naam Japna* and *Naam Simrana*. *Anubhav* is explained by the theologians as an experience or wisdom attained not through any materialist instruments or physical process but through clairvoyance / extrasensory perception. However, my personal experience with the study of Gurbani is different than that of such theologians. I see that Gurbani is most scientific and logical philosophy

and it can be easily understood and explained with the present day knowledge of science and logic. I am also very optimistic that if there is anything that cannot be explained today will definitely be explained tomorrow when more and more laws of the universe are explored by the scientists. Moreover, I would also interpret ਅਨੁਭਵ (*Anubhav*) as intuitionism. Intuitionism is the doctrine that things and principles are truly apprehended without the conscious use of reasoning. The intuitionism can be experienced equally by theologians (Gurus, Bhagats, Sufis, etc.), scientists, philosophers and even by ordinary individuals. The irony is that many individuals are unable to recognize the intuition when received and fail to elaborate or explain to others because of lack of discriminating intellect (ਬੁਧਿ ਬਿਬੇਕ).

I think Albert Einstein [19] might have declared the following statement to resolve the conflict between science and religion:

*“Science without religion is lame.  
Religion without science is blind.”*

It can be easily inferred from the above statement that science and religion could complement each other to find the truth. But some zealot theologians had gone to such an extent that they misconstrued the above quotation of Einstein as follows to show the superiority of religion over science:

*“Science without religion is blind.  
Religion without science is lame.”*

### **The human being, as a common community, is the basic principle of the Nanakian philosophy. . .**

Now Albert Einstein is experiencing the fate that so many of the great men of history had experienced in the past. The above-misconstrued statement of Einstein is quoted by many Christian

theologians and now it has also been quoted by an Eastern scholar, Jivasudarshana, for that very reason to show the supremacy of religion over science [12]. The same misconstrued statement has been quoted by some Sikh scholars {Manjeet Singh [25] and Nirmal Singh Kalsi [14]} to support superiority of religion over the science. The scholars of Gurbani do not have to construe any statement of anybody or any information (data) to interpret Gurbani because it is already scientific and logical philosophy.

The above example clearly indicates that if the scholars of today can misconstrue the well-established statement of a well-known Nobel Laureate and scientist, Einstein, then one can easily imagine how much misconstrued information could be found in the

old writings of Sikhism during the 18<sup>th</sup> and 19<sup>th</sup> centuries? My observations of the Sikh history indicate that most of the statements of Guru Gobind Singh have been misconstrued and in many cases he has been represented as leading Sikhism away from the Nanakian Philosophy. Similarly, Guru Nanak and other Gurus of the House of Nanak have been misrepresented in the old as well as in the contemporary Sikh literature. The Sikhs are very fortunate that they can find the Nanakian Philosophy in original that has been enshrined in the Aad Guru Granth Sahib (AGGS) by Guru Arjan and Guru Gobind Singh. Thus, the Aad Guru Granth Sahib is the most authenticated and primary source of the Nanakian Philosophy to construct Sikhism. Therefore, it is imperative for each scholar to be diligent in quoting information from ancient writings and secondary sources to construct Sikhism. And the authenticity of such sources should be tested with Nanakian Philosophy in the AGGS, science and logic, the touchstones of truth.

### III. SCIENCE AND NANAKIAN PHILOSOPHY

Science and Nanakian Philosophy are closely intertwined with each other. Therefore, to understand the Nanakian Philosophy it is important to have the latest scientific information and a discriminating intellect. Moreover, it is also important to understand the methodology used by Guru Nanak to explain his philosophy. In most of the cases Guru Nanak quotes simple science and logic and sometime cites ancient mythological works and rituals, commonly accepted by the masses and thereafter he explains his philosophy. He also uses many allegoric expressions to make it easy for the readers to understand his philosophy. Another method used by him is that he poses question first and then answers it with his philosophy. The scholars, who would interpret his philosophy, have to be very diligent and need discriminating intellect to distinguish his philosophy from the ancient mythological works, allegoric expressions, and questions cited in his philosophy. Now I would like to demonstrate a few examples to prove the above thesis.

#### 1. Use of Simple Science and Logic

Guru Nanak has used simple science and logic to explain that how a soiled body parts and clothes are cleansed and how the polluted mind can be purified:

ਭਰੀਐ ਹਥੁ ਪੈਰੁ ਤਨੁ ਦੇਹੁ ॥ ਪਾਣੀ ਧੋਤੈ ਉਤਰਸੁ ਖੇਹੁ ॥  
ਮੂਤ ਪਲੀਤੀ ਕਪੜੁ ਹੋਇ ॥ ਦੇ ਸਾਬੁਣੁ ਲਈਐ ਓਹੁ ਧੋਇ ॥  
ਭਰੀਐ ਮਤਿ ਪਾਪਾ ਕੈ ਸੰਗਿ ॥ ਓਹੁ ਧੋਏ ਨਾਵੈ ਕੈ ਰੰਗਿ ॥

AGGS, Jap 20, P 4.

*"If hands, feet and body are soiled with dust they can*

*be washed with water.*

*If the clothes become impure with urine (chemicals) they can be cleansed by washing with soap (other chemicals).*

*If mind is polluted with sins that can be purified by understanding the Almighty and by imbibing Its philosophy."*

#### 2. Use of Ancient Mythology, Concepts or Philosophy

**i) Use of Ancient Concepts about the Universe:** Guru Nanak uses extensively the ancient concepts that were accepted as true by the masses in the beginning of his verse and then he cites scientific or logical fact, his theory or doctrine to explain the reality:

ਪਾਤਾਲਾ<sup>1</sup> ਪਾਤਾਲ ਲਖ ਆਗਾਸ<sup>2</sup> ਆਗਾਸ ॥

ਓੜਕ<sup>3</sup> ਓੜਕ ਭਾਲਿ ਬਕੇ ਵੇਦ ਕਹਨਿ ਇਕ ਵਾਤ<sup>4</sup> ॥

ਸਹਸ ਅਠਾਰਹ ਕਹਨਿ ਕਤੋਬਾ ਅਸੁਲੂ ਇਕੁ ਧਾਤੁ<sup>5</sup> ॥

ਲੇਖਾ<sup>6</sup> ਹੋਇ ਤ ਲਿਖੀਐ ਲੇਖੈ ਹੋਇ ਵਿਣਾਸੁ ॥

ਨਾਨਕ ਵਡਾ ਆਖੀਐ ਆਪੇ<sup>7</sup> ਜਾਣੈ ਆਪ<sup>8</sup> ॥

AGGS, Jap 22, P 5.

Ancient Concepts:

*"The Veda got tired after an immense<sup>3</sup> search and said one thing<sup>4</sup>.*

*That there are hundreds of thousands (many lakhs) nether worlds<sup>1</sup> under nether worlds*

*And skies<sup>2</sup> above skies.*

*The Semitic books say that there are eighteen thousand worlds, but in reality it is one thing (element)<sup>5</sup>."*

Nanakian Concept / Modern Concept:

*"If there could be any account (of the worlds in the universe) then one can try to account, however, the accountant (or account) may be exhausted.*

Nanak Says:

*Let us say the Almighty is Great, It knows Itself (the infiniteness of the universe)."*

Scientifically there is no nether world, it is a myth. Similarly, there is no sky. What we call sky is in fact the blue color due to the thickness of the air around the earth through which the sunlight passes and looks blue. Similarly, the Semitic books have the concept of only 18,000 worlds in this universe. However, according to Guru Nanak the universe is infinite and it is not possible to account the number of the worlds (stars and their planets in the universe). The Nanakian Philosophy about the infiniteness of the universe is so correct even today since the scientists have also declared the infiniteness of the universe.

The irony is that many preachers fail to distinguish the ancient concept from the Nanakian concept of the

universe. They usually preach that it was Guru Nanak who said that there are *lakhs* (hundreds of thousand) of nether worlds under the nether worlds and skies above skies, although it is very clear that it was a concept of the Vedas.

## ii) Ancient Concepts about Yugs and their Deities:

Yug-system has been quoted many times in the Nanakian Philosophy. Let us examine in what context it has been quoted. Yug-system as explained by Dr Sahib Singh [27] from a verse of Guru Nanak is given in the following Table:

Name of the Yug	Period in Years	Deity of the Yug
Sat Yug	1,728,000	Saetember
Traeta Yug	1,596,000	Ram
Duaapar Yug	864,000	Krishan
Kal Yug	472,000	Allah

Therefore, according to this system:

‘Saetember’ appeared about: 4,660,000 years ago;  
‘Ram’ appeared about: 2,832,000 years ago;  
‘Krishan’ appeared about: 1,336,000 years ago; and  
Name of ‘Allah’ appeared about: 472,000 years ago.

**Note:** It is worth noting that in this Yug-system there is no mention of Buddha (560-483 BC), who appeared about 2,560 years ago, and Jesus, who appeared about 2,000 years ago, the founders of two great religions of the world. Surprisingly Muhammad, who preached Allah, has been mentioned, who appeared during 570 CE, i. e. only 1,430 years ago instead of 472,000 years ago as mentioned above.

The above Yug-System explained by Dr Sahib Singh is based on the example of this system accepted in the ancient philosophy as described by Guru Nanak in his following verse:

ਸਾਮ ਕਹੈ ਸੇਤੰਬਰੁ ਸੁਆਮੀ ਸਚ ਮਹਿ ਆਛੈ ਸਾਚਿ ਰਹੇ ॥  
ਸਭੁ ਕੇ ਸਚਿ ਸਮਾਵੈ ॥  
ਰਿਗੁ ਕਹੈ ਰਹਿਆ ਭਰਪੂਰਿ ॥ ਰਾਮ ਨਾਮੁ ਦੇਵਾ ਮਹਿ ਸੁਰੁ ॥  
ਨਾਇ ਲਇਐ ਪਰਾਛੁਤ ਜਾਹਿ ॥ ਨਾਨਕ ਤਉ ਮੋਖੰਤਰੁ ਪਾਹਿ ॥  
ਜੁਜ ਮਹਿ ਜੋਰਿ ਛਲੀ ਚੰਦ੍ਰਾਵਲਿ ਕਾਨ੍ ਕ੍ਰਿਸਨੁ ਜਾਦਮੁ ਭਇਆ ॥  
ਪਾਰਜਾਤੁ ਗੋਪੀ ਲੈ ਆਇਆ ਬਿੰਦ੍ਰਾਬਨ ਮਹਿ ਰੰਗੁ ਕੀਆ ॥  
ਕਲਿ ਮਹਿ ਬੇਦੁ ਅਥਰਬਣੁ ਹੂਆ ਨਾਉ ਖੁਦਾਈ ਅਲਹੁ ਭਇਆ ॥  
ਨੀਲ ਬਸਤੁ ਲੇ ਕਪੜੇ ਪਹਿਚੇ ਤੁਰਕ ਪਠਾਣੀ ਅਮਲੁ ਕੀਆ ॥  
ਚਾਰੇ ਵੇਦ ਹੋਏ ਸਚਿਆਰ ॥ ਪੜਹਿ ਗੁਣਹਿ ਤਿਨ੍ ਚਾਰ ਵੀਚਾਰ ॥

ਭਉ ਭਗਤਿ ਕਰਿ ਨੀਚੁ ਸਦਾਏ ॥ ਤਉ ਨਾਨਕ ਮੋਖੰਤਰੁ ਪਾਏ ॥ ੨ ॥  
AGGS, M 1, P 470.

Guru Nanak clearly rejected the above system which explains that to get salvation people were advised according to the ancient philosophy to recite the names of different incarnations of the Almighty during these different Yugs. Guru Nanak does not believe in Yug-system because in his above 5<sup>th</sup>, 6<sup>th</sup> and in the last two stanzas he gives his own philosophy that salvation can be attained by understanding the Almighty, through love and service for the humanity, and being humble to the humanity.

Unfortunately, Bhai Gurdas has his own Yug-system explained in his *Vaaran* (commonly called *key to the Gurbani*) where the various incarnations of the Almighty appeared in these Yugs are different than that in the ancient philosophy, cited by Guru Nanak in his above verse. For example,  
‘Vishnu’ for the Sat Yug instead of ‘Saetember’.  
‘Krishan’ for Traeta Yug instead of ‘Ram’.  
‘Ram’ for Duaapar Yug, instead of Krishan, and  
‘Gobind’ for the Kal Yug instead of Allaha (Vaar I, Pauri 49) [22].

Moreover, Bhai Gurdas equates all these incarnations as of Nanak, meaning that Nanak appeared as Vishnu in Sat Yug, as Krishan in Treata Yug, as Ram in Duapar Yug and Gobind in Kal Yug. Similarly, Bhatt Kal explains that it was Guru Nanak that appeared as Baavan (Vaaman Avatar) in the Sat Yug, as Ram in Traeta Yug, as Krishan in Duaapar Yug, and as Nanak, then Angad, then Amar (Das) in Kal Yug as is clear from his following Bani:

ਸਤਜੁਗਿ ਤੈ ਮਾਣਿਓ ਛਲਿਓ ਬਲਿ ਬਾਵਨ ਭਾਇਓ ॥  
ਤੁਝੈ ਤੈ ਮਾਣਿਓ ਰਾਮੁ ਰਾਘਵੰਸੁ ਕਹਾਇਓ ॥  
ਦੁਆਪਰਿ ਕ੍ਰਿਸਨ ਮੁਰਾਰਿ ਕੰਸੁ ਕਿਰਤਾਰਥੁ ਕੀਓ ॥  
ਉਗ੍ਰਸੈਣ ਕਉ ਰਾਜੁ ਅਭੈ ਭਗਤਤ ਜਨ ਦੀਓ ॥  
ਕਲਿਜੁਗਿ ਪ੍ਰਮਾਣੁ ਨਾਨਕ ਗੁਰੁ ਅੰਗਦੁ ਅਮਰੁ ਕਹਾਇਓ ॥  
ਸ੍ਰੀ ਗੁਰੁ ਰਾਜੁ ਅਬਿਚਲੁ ਅਟਲੁ ਆਦਿ ਪੁਰਖਿ ਫੁਰਮਾਇਓ ॥ ੭ ॥  
AGGS, Bhatt Kal, P 1390.

The irony is that Bhatt Kal's explanation of deities of these Yugs is entirely different than that of Guru Nanak quoted from the ancient philosophy and also from that of Bhai Gurdas. Bhai Gurdas and Bhatt Kal made Guru Nanak as diety of all these Yugs in the form of Baavan, Ram, Krishan, Nanak, Angad, and Amar.

Guru Nanak does not believe that the Almighty appeared as different Avatars during these different Yugs as described in the ancient mythology. Guru

Nanak equates the different states of mind of the human being as different periods (Yugs) as is clear from his following Slok:

ਨਾਨਕ ਮੇਰੁ ਸਰੀਰ ਕਾ ਇਕੁ ਰਬੁ ਇਕੁ ਰਬਵਾਹੁ ॥  
ਜੁਗੁ ਜੁਗੁ ਫੇਰਿ ਵਟਾਈਅਹਿ ਗਿਆਨੀ ਬੁਝਹਿ ਤਾਹਿ ॥  
ਸਤਜੁਗਿ ਰਬੁ ਸੰਤੋਖੁ ਕਾ ਧਰਮੁ ਅਗੈ ਰਬਵਾਹੁ ॥  
ਤ੍ਰੇਤੈ ਰਬੁ ਜਤੈ ਕਾ ਜੋਰੁ ਅਗੈ ਰਬਵਾਹੁ ॥  
ਦੁਆਪੁਰਿ ਰਬੁ ਤਪੈ ਕਾ ਸਤੁ ਅਗੈ ਰਬਵਾਹੁ ॥  
ਕਲਜੁਗਿ ਰਬੁ ਅਗਨਿ ਕਾ ਕੂੜੁ ਅਗੈ ਰਬਵਾਹੁ ॥  
AGGS, M1, P 470.

Nanak says that there is one body and one mind that drives (controls) it (body). The body may have different states of mind at different times (periods, Yugs). If the mind is in the contentment state it means the person is in Sat Yug; if in the continence state it means the person is in Traeta Yug; if in the penance state it means the person is in Duaapar Yug; and if in the falsehood state it means the person is in Kal Yug.

This is the most scientific, psychological, and logical explanation of different states of mind being equated to the different periods of life of the human being. The students (Sikhs) of Nanakian Philosophy have to be very careful to distinguish between the ancient philosophy and Nanakian Philosophy. Unfortunately many scholars and preacher accept the ancient philosophy, quoted by him, as the Nanakian Philosophy. Such misunderstanding about the Nanakian Philosophy takes the Sikhs to different directions, consequently, Sikhism loses its originality and uniqueness. Then Sikhism starts appearing as a mythic and ritualistic religion like others. The irony is that even Bhai Gurdas and Bhatt Kal have failed to recognize the context in which the ancient concept/philosophy of Yug-system was cited by Guru Nanak in his philosophy.

### 3. The Origin of Man

Now let us discuss the origin of man according to the available scientific evidence and Nanakian Philosophy and in relation to the ancient philosophy and the Yug-system. The evolution of man widely accepted is described briefly as follows [20]:

**The ancestor of man**, the primate, who walked on four legs, appeared about 40,000,000 years ago.

**Ramapithecus**, who walked on his two feet, appeared in Siwalik Hills in India about 14,000,000 years ago.

**Australopithecus**, Man-like ape, appeared in South Africa about 5,000,000 years ago.

**“1470 Man”** appeared in east Africa about 2,500,000

years ago.

**Homo erectus** is the first representative of the genus, *Homo*. It was widespread in Asia, Africa, and Europe. It appeared about 500,000 years ago.

**Homo sapiens**, the first form of wise man, appeared in Europe, Asia, and Africa about 250,000 years ago.

**Neanderthal Man** (between *Homo sapiens* and the Modern Wise Man), appeared in Europe about 70,000 years ago.

**Homo sapiens sapiens**, the Modern Wise Man (the present man belongs to this species), appeared outside of Europe about 35,000 years ago.

**Appearance of Civilization [20]:** The first sign of civilization appeared when the Modern Wise Man started farming and stopped roaming from forest to forest in search of food.

First civilization appeared in

Near East about:	10,000 BCE
South East Asia about:	6,000 BCE
Mexico and Peru about:	5,000 BCE
Far East about:	3,000 BCE
Indus Valley about:	2,500 BCE

The earliest civilization in India is of Indus Valley civilization. The Aryans settled in N. India (Punjab and Sindh) about 1,750 BCE. Hindu states were developed during 1,000 - 600 BCE. Therefore, the Hindu philosophy could be only 2,600 to 3,000 years old. Under these conditions it is inconceivable that Vishnu, Krishan, Ram, etc. the Hindu deities, could have appeared about 1.3 to 4.6 million years ago when there was no man, either as *Homo erectus*, *Homo sapiens* or *Homo sapiens sapiens*, on this planet, the earth.

### Inferences from the above Discussion

1. Most of the time scholars refer to *Homo sapiens* as the present man, in fact, this species has disappeared since a long. The Modern Wise Man is a subspecies, *Homo sapiens sapiens*, that appeared about or less than 35,000 years ago.
2. Appearance of the Almighty in various incarnations, for example: Vishnu or Saetember during Sat Yug; Hari Krishan, Krishan, Kahn, or Yadva during Traeta Yug or Duaapar Yug; and Ram during Duaapar Yug or Traeta Yug.
3. Although the Yug-System described is an ancient mythology, nevertheless, it was accepted as a truth by the peoples during Guru Nanak's time and even today it is accepted as a truth by many Sikh theologians. According to the available scientific evidence there is no such Yug-System, however, Guru Nanak used it allegorically to refer to as the ancient mythology. Whenever, Guru Nanak used

the mythological work or ancient philosophy in his verses, he never meant that he believes in them. Unfortunately, many Sikh theologians take such mythological works as a truth and interpret Gurbani accordingly. Such interpretation takes the students and the scholars of Nanakian Philosophy far away from the truth. Therefore, knowledge of science and logic is necessary to understand the Gurbani in its originality and entirety.

### The Book of Life

Stephen Hawking [9] says that by far most complex systems we have are our own bodies. There have not been any significant changes in human DNA (deoxyribose nucleic acid) in the past 10,000 years. But soon we will be able to increase the complexity of our internal record, our DNA, without having to wait for the slow process of biological evolution. *"We also need to become more complex if biological systems are to keep ahead of electronic ones. At the moment, computers have an advantage of speed, but they show no sign of intelligence. This not surprising as our present computers are less complex than the brain of an earth worm, a species not known for its intellectual powers. But computers' speed and complexity double every 18 months, and this will probably continue until computers have a similar complexity to the human brain [9]."*

Will computers ever show true intelligence? Stephan Hawking [9] says: *"It seems to me that if very complicated chemical molecules can operate in humans to make them intelligent, then equally complicated electronic circuits can also make computers act in an intelligent way. And if they are intelligent, they can presumably design computers that have even greater intelligence and complexity."*

Now the scientists are writing The Book of Life, the Genome of Human. The human gene is composed of about 2 meters long DNA forming about 80,000 genes packed into 23 pairs of chromosomes (one set of chromosome in each pair comes from each parent). Each gene is a segment of double-stranded DNA that holds the recipe for making a specific molecule especially protein. The recipes are spelled out in varying sequences of the four chemical bases in DNA: adenine (A), thymine (T), guanine (G), and cytosine (C). The bases form interlocking pairs that can fit together in only one way: A pairs with T, and G pairs with C. Reading genome entails sequencing or reading the three billion base pairs of DNA found on the 23 chromosomes in a human cell, i.e. total of 6 billion

base pairs in a complete set of 46 chromosomes [16].

Humans share many genes with yeasts (also molds and slimes), worms, fruit flies, and lettuce, about 90% with mice and more than 98% with chimpanzees. This tiny difference of 2% makes us human. A variation of 0.2% makes one individual different than the other [16].

The impact of The Book of Life is expected to be enormous. It would help us to find out that an individual is prone to what diseases and problems: Alzheimer's disease, heart problems, cholesterol, addiction to tobacco, alcohol, etc. It would also help to do the gene therapy to control the diseases that are caused by certain genes. Transfer for human gene in pigs to produce different organs for transplants into humans will be a big biological business in the future [16].

Now let us examine if such scientific information could be helpful to interpret and understand Nanakian Philosophy in its originality and entirety:

#### i) The roots of Man (Mann):

ਮਨ ਤੂੰ ਜੋਤਿ ਸਰੂਪ ਹੈ ਆਪਣਾ ਮੂਲੁ ਪਛਾਣ\* ॥

AGGS, M 3, P 441.

(\* This stanza was first uttered by Guru Nanak as admitted by Guru Amardas: ਇਉ ਕਹੈ ਨਾਨਕੁ ਮਨ ਤੂੰ ਜੋਤਿ ਸਰੂਪੁ ਹੈ ਆਪਣਾ ਮੂਲੁ ਪਛਾਣੁ ॥)

Most of the time it is interpreted as follows:

*"Oh my soul, you have emanated from the light of God, know your true essence."* [6].

**ੴ : The numeral '1' should be pronounced as 'Ik' and the letter ਓ (Oora) with open end as 'Oh'.**

Since some portion of the genome of the human resembles with the smallest organism, like yeasts, molds, slimes, worms, and lettuce (plant); 90% resembles with mice, and 98% with chimpanzees, therefore, it clearly indicates that we can trace back our roots (*mool*) to primate (chimpanzees) to mice to plants (lettuce) to microorganisms (yeasts, molds, slimes) and then ultimately to the primordial source (*Jyot*), the Energy, as explained in the above verse. It also explains the evolution of man through different stages of various living forms starting from the smallest organism as recorded in the Nanakian Philosophy:

ਕਈ ਜਨਮ ਭਏ ਕੀਟ ਪਤੰਗਾ ॥...AGGS, M 5, P 176.

There is in another verse in the Nanakian Philosophy that explains to man that since he has attained this form



of human being after a long and continuous process of evolution, now is the time for him to understand and realize the Almighty:

ਭਈ ਪਰਾਪਤਿ ਮਾਨੁਖ ਦੇਹੁਰੀਆ ॥

ਗੋਬਿੰਦ ਮਿਲਣ ਕੀ ਇਹ ਤੇਰੀ ਬਰੀਆ ॥ AGGS. M 5, P 378.

It is further mentioned in the Nanakian Philosophy that evolution of man is at the highest level of evolution and he is the commander of all the living beings:

ਅਵਰ ਜੋਨਿ ਤੇਰੀ ਪਨਿਹਾਰੀ ॥ ਇਸੁ ਧਰਤੀ ਮੀਹ ਤੇਰੀ ਸਿਕਦਾਰੀ ॥

AGGS, M 5, P 374.

Keeping in view the above related verses, the first verse (ਮਨ ਤੂੰ ਜੋਤਿ ਸਰੂਪ ਹੈ ਆਪਣਾ ਮੂਲੁ ਪਛਾਣ ॥) can be interpreted scientifically and logically as follows:

The first part is in a form of question, "*Recognize your roots.*"

The second part is the answer, "*Your roots are from the primordial Energy (Jyot), the Almighty.*"

It means after passing through long process of evolution starting from the Energy (*Jyot*) you have attained human form, the highest form of evolution - the commander of all the living beings, thus try to realize the Almighty. The above stanza of Guru Nanak clearly encourages the man to discover his roots (basics of life). Recently the scientists have almost completed the sequencing of human genome, The Book of Life. Bill Clinton, US President has expressed mapping of human genome as follows: "*Today we are learning the language in which God created life. We are gaining ever more awe for the complexity, the beauty, the wonder of God's most divine and sacred gift.*" [4]. Bill Clinton further said that: "*If the project (The Book of Life) proves anything, it is the most important fact of life on this Earth is our 'common community'*" [CNN.com, June 27, 2000]. The human being, as a common community, is the basic principle of the Nanakian philosophy that was taught about 500 years ago by the Sikh Gurus of the Nanakian School. The scientists have now discovered this fact that all the human beings are a '*common community*'.

#### 4. Concepts of God, the Almighty

Primitive peoples paid religious devotion either to nature as a deified collective entity or to all things in nature, including the elements (air, water, fire, and earth formerly believed to compose a physical universe), celestial bodies, plants, animals, and humanity [11]. As the civilization progressed, many religious leaders started to think that there may be a being that is so different from finite beings - a mystery beyond the powers of human conception.

The Infopedia [11] has given a very brief but critical analysis about the concepts of God in different religions of the world. The concepts of selected religions are given as follow:

**i) The Jewish Idea of God:** The idea of transcendence is introduced in the opening verses of the Hebrew Scriptures, in which God is presented as creator. This explains the Jewish antipathy to idolatry-no creature can represent the Creator, so it is forbidden to make any material image of him. Nonetheless, it is also part of the creation teaching that the human being is made in the image of God. Thus, the Hebrew understanding of God was frankly anthropomorphic. He promised and threatened, he could be angry and even jealous; but his primary attributes were righteousness, justice, mercy, truth, and faithfulness. He is represented as king, judge, and shepherd.

**ii) Christian Conceptions:** Christianity began as a Jewish sect and thus took over the Hebrew God, the Jewish Scriptures eventually becoming, for Christians, the Old Testament. During his ministry, Jesus was probably understood as a holy man of God, but by the end of the 1st century Christians had exalted him into the divine sphere, and this created tension with the monotheistic tradition of Judaism. The solution of the problem was the development of the doctrine of the Trinity (The unity of Father, Son, and Holy Spirit as three persons in one Godhead). Although it is suggested in the New Testament, was not fully formulated until the 4th century.

**iii) Islam:** Islam arose as a powerful reaction against the ancient pagan cults of Arabia, and as a consequence it is the most starkly monotheistic of the three biblically rooted religions. The name Allah means simply "the God." He is personal, transcendent, and unique, and Muslims are forbidden to depict him in any creaturely form. The primary creed is that "*There is no god but Allah, and Muhammad is the apostle of Allah.*" Allah has seven basic attributes: life, knowledge, power, will, hearing, seeing, and speech. The last three are not to be understood in an anthropomorphic sense. His will is absolute, and all that happens depends on it, even to the extent that believers and unbelievers are predestined to faith or unbelief.

**iv) Hinduism:** In Hinduism, Holy Being can be understood in several ways. Philosophically, it is understood as Brahma, the one eternal, absolute reality embracing all that is, so that the world of change is but the surface appearance (*maya*/illusion). In popular religion, many gods are recognized, but, properly understood, these are manifestations of Brahma. Each

god has his or her own function. The three principal gods, charged respectively with creating, preserving, and destroying, are joined as the Trimurti, or three powers, reminiscent of the Christian Trinity.

### Disbelief in God

Arguments against belief in God are as numerous as arguments for it. **Atheists** absolutely deny the existence of God. Some, for instance, believe the material universe constitutes ultimate reality; others argue that the prevalence of suffering and evil in the world precludes the existence of a sacred being. **Agnostics** believe that the evidence for and against the existence of God is inconclusive; they therefore suspend judgment. **Positivists** believe that rational inquiry is restricted to questions of empirical fact, so that it is meaningless either to affirm or deny the existence of God [11].

The western theologians use the word, 'the God' for 'the creative and controlling power'. The word 'God' has different meanings for different peoples, e. g., various incarnations of the God into different gods and goddesses. For example, 34 Greek gods; 12 principal Roman gods; 31 Egyptian gods; and many gods (360,000,000) with their consorts and goddesses in Hinduism [8].

### The God (the Almighty) in the Nanakian Philosophy

A precise and concise definition of God (Almighty) is given in the Commencing Verse of the Aad Guru Granth Sahib (AGGS) [1]. It is commonly called as **Mool Mantra** by the Sikhs at large and by almost all the Sikh scholars, although no such title was assigned either by Guru Nanak when it was composed or by Guru Arjan at the time of compilation of the AGGS. Moreover, there is no place of Mantra in Nanakian Philosophy. The Commencing Verse of the AGGS has been discussed scientifically and logically in details in my previous article [5]. It has been proven that it is not a Mool Mantra but a precise and concise definition of the **Transcendent Entity** (referred to as the Almighty or the God in this article). The Commencing Verse of the AGGS is as follows:

ੴ  
ਸਤਿ ਨਾਮੁ ਕਰਤਾ ਪੁਰਖੁ ਨਿਰਭਉ  
ਨਿਰਵੈਰੁ ਅਕਾਲ ਮੂਰਤਿ ਅਜੂਨੀ ਸੈਭੰ  
ਗੁਰ ਪ੍ਰਸਾਦਿ ॥

The first part ੴ is generally pronounced by many theologians and scholars as ਏਕੁ ਓਅੰਕਾਰੁ (*Ik Oankaar*) or ਏਕੰਕਾਰੁ (*Ikankaar*). The survey of the available literature indicates that this pronunciation might have been coined by the early Sikh scholars [23] who were under the strong influence of Vedic and Puranic philosophy.

Dr Sahib Singh [27] explains ੴ as ਇਕ + ਓ or ਓਅੰ or ਓ (Oam or Om) + ਕਾਰ and pronounces ੴ as 'ਏਕੰਕਾਰੁ' or 'ਏਕ 'ਓਅੰਕਾਰੁ'. And he interprets ਕਾਰ as: ਜੋ ਇਕ-ਰਸ ਹੈ; ਜੋ ਹਰ ਥਾਂ ਵਿਆਪਕ ਹੈ. (*One, Unchangeable, is prevalent everywhere.*) And many scholars followed him. Interpretations by Dr Sahib Singh [27] and other scholars [18, 23] clearly takes us into the ancient philosophy that ੴ originated from 'Om', 'Onkar',

**In ੴ the open end of 'Oora' has been extended geometrically to characterize it as ਬੇਅੰਤ (*Beant* - Infinite). Thus, it should be pronounced as ਇਕੁ ਓ ਬੇਅੰਤ (*Ik Oh Beant*) = One and Only, Oh, the Infinite.**

'Omkar', the ancient descriptive or specific names for the Almighty. Pritam Singh [26] has noticed that in spite of unmistakable figure 1 which proceeds 'O' (ਓ) in the Mool Mantra, the commentators, who possess even a smattering of Sanskrit, do not forget to refer it to the trinity of gods, although there is no place of Trinity in Nanakian Philosophy.

Now the Sikh scholars and theologians have given enough opportunity to Parma Nand [17] and others to undermine originality and uniqueness of the philosophy of Guru Nanak by declaring that ੴ is not a new word coined by Guru Nanak but he borrowed it from Upanishads because 'Oankaar' or 'Omkar' has been used in various Upanishads. The only thing Guru Nanak did was to add numeral '1' to confirm the 'Oneness' of God, which is also found in the Upanishads. Parma Nand [17] has also tried to portray that the commencing verse is called Mool Mantra according to the rules of Vedas for declaring a word or sentence as Mantra, *Beej* Mantra or Mool Mantra. Mantra, according to Vedas, is a word or sentence repeated again and again under certain condition forces the deities to perform miraculous work to fulfil the desires of the performers (devotees).

I have been working with many scholars on the pronunciation of ੴ and interpretation of the Commencing Verse since a long. It was Dr Parminder Singh Chahal (personal discussion) who gave very



ਕਣੁ ਸੁ ਵੇਲਾ ਵਖਤੁ ਕਵਣੁ ਕਵਣੁ ਬਿਤਿ ਕਵਣੁ ਵਾਰੁ ॥  
ਕਵਣਿ ਸਿ ਰੁਤੀ ਮਾਹੁ ਕਵਣੁ ਜਿਤੁ ਹੋਆ ਆਕਾਰੁ ॥...  
ਜਾ ਕਰਤਾ ਸਿਰਠੀ ਕਉ ਸਾਜੇ ਆਪੇ ਜਾਣੈ ਸੋਈ ॥

AGGS, Jap 21, P 4.

*"What was the moment, time, date, day,  
season or month*

*When the Universe was created?.....*

*It is the Creator, the Almighty,*

*Who knows when the Universe was created."*

According to the latest finding it is estimated that the Universe came into being about 10-20 (about 15) billion years ago [10, 29]. (The latest estimate is about 12 billion years). But according to Guru Nanak no definite date or time could be assigned to the origin of the universe. But in another verse that explains the formation of our solar system, the date of formation goes as back as more than a billion years. Guru Nanak describes the primordial stage of our solar system when there was nothing but gases and laws of the universe:

ਅਰਬਦ ਨਰਬਦ<sup>1</sup> ਹੁੰਦੁਕਾਰਾ<sup>2</sup> ॥

ਧਰਣਿ ਨ ਗਗਨਾ ਹੁਕਮ<sup>3</sup> ਅਪਾਰਾ<sup>4</sup> ॥

AGGS. M 1, P 1035

*"More than a billion years ago<sup>1</sup>,  
There was only a mass of gases<sup>2</sup>.  
There was no earth or sky,  
But the laws<sup>3</sup> of the Infinite<sup>4</sup>."*

{1. *Arbad narbad*: means a period more than a billion years. The present estimation of origin of solar system is about 4.6 billion years. 3. Guru Nanak calls the Laws of the universe as Laws of the Almighty (ਹੁਕਮ)}

After the big bang and the creation of the laws of the universe then everything in this universe was put under these laws:

ਭੈ<sup>1</sup> ਵਿਚਿ ਪਵਣੁ<sup>2</sup> ਵਹੈ<sup>3</sup> ਸਦਵਾਉ<sup>4</sup> ॥

ਭੈ ਵਿਚਿ ਚਲਹਿ ਲਖ<sup>5</sup> ਦਰੀਆਉ<sup>6</sup> ॥

ਭੈ ਵਿਚਿ ਅਗਨਿ<sup>7</sup> ਕਵੈ ਵੇਗਾਰਿ<sup>8</sup> ॥ ਭੈ ਵਿਚਿ ਧਰਤੀ ਦਬੀ ਭਾਰਿ ॥

ਭੈ ਵਿਚਿ ਇੰਦੁ ਫਿਰੈ ਸਿਰ ਭਾਰਿ ॥ ਭੈ ਵਿਚਿ ਰਾਜਾ ਧਰਮੁ ਦੁਆਰੁ<sup>9</sup> ॥

ਭੈ ਵਿਚਿ ਸੂਰਜੁ ਭੈ ਵਿਚਿ ਚੰਦੁ ॥ ਕੋਹ ਕਰੋਤੀ ਚਲਤ ਨ ਅੰਤੁ ॥

ਭੈ ਵਿਚਿ ਸਿਧ ਬੁਧ ਸੁਰ ਨਾਥ ॥ ਭੈ ਵਿਚਿ ਆਡਾਣੇ ਆਕਾਸ ॥

ਭੈ ਵਿਚਿ ਜੋਧ ਮਹਾਬਲ ਸੂਰ ॥ ਭੈ ਵਿਚਿ ਆਵਹਿ<sup>10</sup> ਜਾਵਹਿ<sup>11</sup> ਪੂਰ<sup>12</sup> ॥

ਸਗਲਿਆ<sup>13</sup> ਭਉ<sup>14</sup> ਲਿਖਿਆ ਸਿਰਿ ਲੇਖੁ<sup>15</sup> ॥

ਨਾਨਕ ਨਿਰਭਉ<sup>16</sup> ਨਿਰੰਕਾਰੁ<sup>17</sup> ਸਚੁ<sup>18</sup> ਏਕੁ<sup>19</sup> ॥ ੧ ॥

AGGS, M 1, P 464.

(Note: The word ' ਭੈ ' is the metaphor for the Laws of the Universe)

*"Under the laws of the universe<sup>1</sup>, air<sup>2</sup> always<sup>4</sup> blows<sup>3</sup>; hundreds of thousand<sup>5</sup> rivers<sup>6</sup> flow; the energy<sup>7</sup> performs different works<sup>8</sup>; earth moves; clouds move; and the so-called Dharm Raaj<sup>9</sup> (birth and death) is under the laws; sun and moon (planets) are moving tens of millions of miles; Sid, Budh, Sur Naath; the sky; the soldiers and strongest warriors; groups<sup>12</sup>; appear<sup>10</sup> and disappear<sup>11</sup>.*

*Everybody (the whole world)<sup>13</sup> is under the laws of the universe<sup>14, 15</sup>."*

*Nanak says: "Only the One<sup>19</sup>, That is without any form<sup>17</sup>, is not under any law<sup>16</sup> and exists for ever<sup>18</sup>."*

In the following verse it is explained that the universe was created under the Laws of the Universe:

ਹੁਕਮੀ<sup>1</sup> ਸਹਜੇ ਸ੍ਰਿਸਟਿ ਉਪਾਈ ॥

ਕਰਿ ਕਰਿ ਵੇਖੇ ਆਪਣੀ ਵਡਿਆਈ<sup>2</sup> ॥

ਅਪੇ ਕਰੇ ਕਰਾਏ ਆਪੇ ਹੁਕਮੇ<sup>3</sup> ਰਹਿਆ ਸਮਾਈ ਹੇ ॥੧॥

AGGS, M 3, P 1043.

*"It<sup>1</sup> (the Creator of the laws) created easily the universe according to Its laws<sup>1</sup> (Laws of the universe). It creates and then watches Its Own power of creation<sup>2</sup>.*

*It works by Itself and makes the others to work,*

*And It pervades in Its Own laws<sup>1</sup> (Laws of the universe)."*

Finally, Guru Nanak simplifies the description of the *hukm* (Laws of the universe) as follows:

ਹੁਕਮੈ ਅੰਦਰਿ ਸਭੁ ਕੋ ਬਾਹਰਿ ਹੁਕਮ ਨ ਕੋਇ ॥

ਨਾਨਕ ਹੁਕਮੈ ਜੇ ਬੁਝੇ ਤ ਹਉਮੈ ਕਹੈ ਨ ਕੋਇ ॥੨॥

AGGS, Jap 2, P 1.

*"Everything is in interiority of the hukm (Laws of the universe),*

*Nothing is in exteriority of the hukm.*

Nanak says:

*If one can realize the above fact (Laws of the universe),*

*one can get rid of egoism."*

In the above verse Guru Nanak again emphasizes that It (the Almighty) creates according to Its Own Laws (*Hukm*) (Laws of the Universe) and It pervades in Its Own Laws.

## 6. The Almighty and the Nature

According to Guru Nanak the Almighty and the Nature are intertwined with each other. The Almighty created the Nature and It resides in it. It (the Almighty) also created Its own characters. It is responsible for all the forces and laws of the universe (Nature) and existence of life in everybody:

ਆਪੀਨੈ<sup>1</sup> ਆਪੁ<sup>2</sup> ਸਾਜਿਓ<sup>3</sup> ਆਪੀਨੈ ਰਚਿਓ ਨਾਓ<sup>4</sup> ॥

ਦੁਖੀ ਕੁਦਰਤਿ ਸਾਜੀਐ ਕਰਿ ਆਸਣੁ ਡਿਠੋ ਚਾਉ ॥

AGGS, M 1, P 463.

"It<sup>1</sup> (the Almighty) was created<sup>3</sup> by Itself<sup>2</sup> and It created Its own characters<sup>4</sup>.

Secondly, It created the Nature and It sat in there to watch Its creation."

ਭਲਿਹਾਰੀ ਕੁਦਰਤਿ ਵਸਿਆ ॥ ਤੈਰਾ ਅੰਤੁ ਨਾ ਜਾਈ ਲਖਿਆ ॥

AGGS, M 1, P 469.

"(Nanak) praises Its existence in the Nature. Its (Your) infiniteness cannot be comprehended."

It appears that what is the "Nature" for a scientist is the Transcendent Entity (It) for Guru Nanak with the exception that Guru Nanak also admits that It created the Nature and controls the Nature and It exists in the Nature.

Guru Nanak not only teaches that It (the Almighty) exists he emphatically says that It existed before the time and space, existed in the past, exists now, and will exist in the future:

ਆਦਿ<sup>1</sup> ਸਚੁ<sup>2</sup> ਜੁਗਾਦਿ<sup>3</sup> ਸਚੁ ॥ ਹੈ ਭੀ<sup>4</sup> ਸਚੁ ਨਾਨਕ ਹੋਸੀ<sup>5</sup> ਭੀ ਸਚੁ ॥

AGGS, Jap 1, P 1.

"It (the Almighty) was in existence<sup>2</sup> before the time and space.<sup>1</sup>

And was in existence in the Past<sup>3</sup>.

It is in existence in the present<sup>4</sup>

And will be in existence for ever<sup>5</sup>."

2. The word "sach" has been interpreted as "existence" according to Dr Sahib Singh [27]. It is also to be noted here that Guru Nanak has taken the period even before the "time" came into existence (aad) for the existence of the Almighty.

## 7. Source of Energy

There are two sources of energy in the Universe:

**i) Fusion:** The union of atomic nuclei to form heavier nuclei resulting in the release of enormous quantity of energy. (The simple meanings are union of two things into one.)

Technically it is explained as: Two hydrogen nuclei or protons smash into each other hard enough to fuse, forming a deuterium nucleus with one proton and one neutron. As the protons fuse, they release energy, partly in the form of a neutrino. Neutrinos are odd

particles that seem able to penetrate almost anything, including us and earth as if neither existed. Next the deuterium nucleus rams another free proton and fuses with it, giving off energy in the form of gamma rays. Finally, this clump of three particles smashes into another clump like itself and forms a helium nucleus. In this last collusion two protons are knocked loose and the process begins again. In each step, energy is given off in the form of photons. It is this energy that keeps the sun shining and earth alive. And this is how a hydrogen bomb works. The sun is an enormous hydrogen bomb that just keeps on exploding [10].

**Although many Sikh and non-Sikh theologians keep science and Nanakian Philosophy far apart from each other, a critical analysis of Nanakian Philosophy indicates that both are intertwined with each other as hand in glove.**

**ii) Fission:** Splitting of an atomic nucleus resulting in the release of large amount of energy. The simple meaning is splitting of a thing into two parts. Atom bomb is the result of fission (splitting) of an element to release energy.

Guru Nanak explains that the work (actions and reactions) in the universe is carried out with the energy released either by fusion or by fission:

ਸੰਜੋਗੁ<sup>1</sup> ਵਿਜੋਗੁ<sup>2</sup> ਦੁਇ ਕਾਰ<sup>3</sup> ਚਲਾਵਹਿ<sup>4</sup> ਲੇਖੇ<sup>5</sup> ਆਵਹਿ ਭਾਗ<sup>6</sup> ॥

AGGS, Jap 29, P 6.

"The work<sup>3</sup> is performed<sup>4</sup> by the energy

Released by fusion<sup>1</sup> and by fission<sup>2</sup>; and

The resulting work becomes<sup>5</sup> our assets (blessing)<sup>6</sup>."

Most of the interpreters (21, 23, 27, 28) express it (*sanjog, vijog*) either a union and separation of families or union and separation of man with/from the Almighty. But the above interpretation is based upon the fact that Guru Nanak is talking about the control (*nathi*) of all the actions and reactions, i.e. the work (*kar*) and its control rests with the Almighty (*Nath*) in the preceding part of the above stanza:

ਆਪਿ<sup>1</sup> ਨਾਬੁ<sup>2</sup> ਨਾਬੀ<sup>3</sup> ਸਭ ਜਾਕੀ<sup>4</sup> ਰਿਧਿ<sup>5</sup> ਸਿਧਿ<sup>6</sup> ਅਵਰਾ ਸਾਦ<sup>7</sup> ॥

AGGS, Jap 29, P 6.

"The Almighty<sup>1</sup> Itself<sup>1</sup> is the Controller<sup>2</sup>;

It controls<sup>3</sup> every thing<sup>4</sup>;

The self praise and possession of miracle power<sup>5,6</sup> is a taste<sup>7</sup> (desire),

That leads one away from realization of the Almighty."

Guru Amardas has also used fusion and fission in the same sense as explained earlier because here again it concerns the universe and creation:

ਆਪੈ<sup>1</sup> ਜੋਤਿ<sup>2</sup> ਵਿਛੋੜੇ<sup>3</sup> ਆਪੇ ਥਾਪਿ<sup>4</sup> ਉਥਾਪੇ<sup>5</sup> ਆਪੇ ॥  
ਸਚਾ<sup>6</sup> ਹੁਕਮ<sup>7</sup> ਸਚਾ<sup>6</sup> ਪਾਸਾਰਾ<sup>8</sup> ਹੋਰਨਿ<sup>9</sup> ਹੁਕਮ<sup>10</sup> ਨ ਹੋਈਏ ॥  
AGGS, M 3, P 1044-1045.  
"It<sup>1</sup> (the Almighty) Itself initiates the fusion<sup>2</sup>,  
It Itself initiates the fission<sup>3</sup>,  
It Itself creates<sup>4</sup>, and  
It Itself reverses<sup>5</sup> the creation.  
Its laws<sup>7</sup> and expansion<sup>8</sup> of the  
Universe exist<sup>6</sup> (under Its laws), and  
There is no other governing body<sup>9</sup>,  
That can issue such laws<sup>10</sup>."

Guru Arjan used fusion and fission to explain the conception and birth of man. Here fission is splitting of pairs of chromosomes of sex cells of a man and of a woman. And fusion is the combination or pairing of one set of n-number of chromosomes from the man sex cell (sperm) with the n-number of chromosomes of woman sex cell (ovum) resulting in a zygote of 2n-chromosomes. This zygote continues to divide resulting into a multicellular organism, which later develops into a new human being. This phenomenon has been described as following:

ਸੰਜੋਗ<sup>1</sup> ਵਿਜੋਗ<sup>2</sup> ਧਰਹੁ<sup>3</sup> ਹੀ ਹੂਆ<sup>4</sup> ॥  
ਪੰਚ<sup>5</sup> ਧਾਤ<sup>6</sup> ਕਰਿ<sup>7</sup> ਪੁਤਲਾ<sup>8</sup> ਕੀਆ<sup>9</sup> ॥  
ਸਾਰੈ<sup>10</sup> ਕੈ ਫੁਰਮਾਇਅੜੈ<sup>11</sup> ਜੀ<sup>12</sup> ਦੇਗੀ<sup>13</sup>  
ਵਿਚਿ ਜੀਉ<sup>14</sup> ਆਇ ਪਾਇਆ ॥

AGGS, M 5, P 1007  
"Pairing<sup>1</sup> and splitting<sup>2</sup> (of chromosomes) are  
Performed<sup>4</sup> according to the already decided laws<sup>3</sup>.  
By putting together<sup>7</sup> five<sup>5</sup> elements<sup>6</sup>  
A new body<sup>8</sup> was created<sup>9</sup>. Then according to the laws  
of the Almighty<sup>10</sup>,  
Life<sup>12</sup> is added into the newly formed body<sup>13</sup> and  
A new life<sup>14</sup> came into being."

The interpretation of the above verses in their real perspective would have not been possible without the application of knowledge of Physics, Biology, and Genetics. However, at many other places in AGGS *sanjog* and *vijog* have been used in their simple meaning of union and separation of people among themselves or of the man with the Almighty. It also becomes clear from these verses that interpretation of certain words should be done by keeping in view the context in which they have been used.

## 8. Food Fads

A healthy body with a sound mind is required to compete in our super-active and demanding world, if one wants to prosper. So good nutrition is a paramount necessity. The key of good health is eating a balanced diet. But there are many food fads in this world:

- there are people who are against eating of any type of meat;
- there are others who will not eat any meat except fish on Fridays and still there are others who will not eat meat on Tuesdays or Sundays;
- there are some who will not eat pork while there are others who will not eat beef but will eat any other meat; and
- there are still others who will eat meat only if the animal is slaughtered by certain methods {slaughtered by bleeding slowly (kosher or Halal) or slaughtered by one stroke of *kirpan* - sword (*jatka*)}.

The code of conduct (*Rehit Maryada*) published by the Shiromani Gurdwara Parbandhak Committee does not allow eating of meat if the animal is slaughtered by bleeding slowly under rituals, kosher or halal meat. And according to the *Hukmnama* (edict) of Jathedar

Sadhu Singh Bhaura of the Akal Takht dated February 15, 1980 eating of "*jatka*", a n i m a l slaughtered with one stroke of *kirpan* (sword),

is not against the code of conduct (*kurehit*) for the Sikhs. There are a few Sikhs with views different than those presented as above. Let us discuss food fads from scientific point of view and as explained in the Nanakian Philosophy.

**i) Consciousness:** People who are against meat eating are so because they think that killing of living organisms is a sin. They call themselves vegetarians because they think that the plants are not living organisms. If they are so, they don't have consciousness because they are not aware of being killed. Such conclusions are drawn because of lack of proper knowledge about life. In fact every living organism, whether single-celled or multicellular organism, plant or animal has consciousness and is very well aware of conditions inside of his body as well as outside of his body (environment). They try to protect themselves from the adverse conditions as soon as their lives are threatened.

ਏਕਾ<sup>1</sup> ਸੁਰਤਿ<sup>2</sup> ਜੋਤਾ<sup>3</sup> ਹੈ ਜੀਆ<sup>4</sup> ॥ ਸੁਰਤਿ<sup>2</sup> ਵਿਹੂਣਾ<sup>5</sup> ਕੋਇ ਨ ਕੀਆ<sup>6</sup> ॥

**Scientific and logical interpretation of Nanakian Philosophy will resolve once for all the persistent controversy: Whether Sikhism is a sect of Hinduism or Islam or syncretism of both or Sikhism is unique.**

ਜੇਗੀ<sup>7</sup> ਸੁਰਤਿ<sup>2</sup> ਤੇਰਾ ਤਿਨ ਰਾਹ<sup>8</sup> ਲੇਖਾ<sup>9</sup> ਏਕੋ ਆਹੁ ਜਾਹ<sup>10</sup> ॥

AGGS. M 1, P 24.

*"The Almighty has given same<sup>1</sup> consciousness<sup>2</sup> to all<sup>3</sup> the living beings<sup>4</sup>.*

*No living being<sup>6</sup> is without<sup>5</sup> consciousness<sup>2</sup>.*

*The living beings will follow the way of life<sup>8</sup>*

*According to their level<sup>7</sup> of consciousness<sup>2</sup>,*

*They come into existence (take birth)*

*And go away (die)<sup>10</sup> according to the*

*Information written<sup>9</sup> (on their genes)."*

**ii) Plant and Animal:** Sometimes it is very difficult to distinguish between a plant and an animal. For example, *Euglena* is an organism which has chlorophyll and like plants it can synthesize its own food under certain conditions. However, it depends on ready-made food under other conditions when it cannot synthesize its own food then it will ingest food particles and excrete wastes like an animal. *Euglena* is a bridging link between plant and animal. Guru Nanak explains this phenomenon as follows to convince people about these indistinguishable characteristics of plants and animals:

ਮਾਸੁ ਮਾਸੁ ਕਰਿ ਮੂਰਖ ਝਗੜੇ ਗਿਆਨੁ ਧਿਆਨੁ ਨਹੀ ਜਾਣੇ ॥

ਕਉਨੁ ਮਾਸੁ ਕਉਣ ਸਾਗ ਕਹਾਵੈ ਕਿਸੁ ਮਹਿ ਪਾਪ ਸਮਾਣੇ ॥

AGGS, M 1, P 1289.

*"Only fools wrangle about eating of meat.*

*(Because) They don't know what is called a meat*  
*(animal), and*

*What is called a "saag" (plant).*

*And eating of which results in committing of a sin."*

If the plants and animals are indistinguishable, Guru Nanak questions then where lies the sin. Is it in eating a plant or animal?

**iii) Is Milk a Plant Product?** It is very strange that those who have never objected drinking of milk and eating of milk products (dairy products) are not aware of the fact that milk and milk products are infact animal products. The cow converts the plant food into its blood and milk is synthesized from blood in the udder of a cow. When blood comes into the udder through special canals (veins) the blood is converted into milk by passing through various biochemical reactions carried out in certain cells of the udder. Thus milk is another form of the blood. The cow also converts the plant food into flesh (beef) of its body during its growth. Therefore, the milk is as much a blood or flesh as the flesh of the animal. In other words milk is equivalent to liquid meat. Thus milk is an animal product rather than a plant product considered by some vegetarians.

An unfertilized egg of an hen is a product very similar to the milk of a cow when compared its synthesis inside the body of the hen. The only difference in milk from the egg is that the calcium of milk is solubilized in the milk whereas the calcium of the egg is deposited around the egg as a shell to protect it. It is hard to understand that the so-called vegetarians will drink milk but will not eat egg although the synthesis of egg is very similar to that of milk and it is also a product of animals (birds).

In fact the milk thus synthesized in the udder of a cow is meant for her calf but not for any other animal including man. When a man drinks milk of a cow in fact he is drinking the rightful food of her calf. From moral point of view drinking of milk is the most sinful act because by doing so the man is taking away the rightful food of some young one, the calf:

ਹਕੁ ਪਰਾਇਆ ਨਾਨਕਾ ਉਸੁ ਸੁਆਰ ਉਸੁ ਗਾਇ ॥

AGGS. M 1. P 141.

*"Taking away the rights or rightful articles of the others is a sin comparable to the eating of pork (for a Muslim) and beef (for a Hindu)."*

(Eating of pork and beef has been cited here as similes by Guru Nanak, because eating of pork and beef has been declared as sin according to the edicts of Islam and Hinduism, respectively, to explain that taking away the rights and rightful articles of others is the greatest sin.)

If raising of a cow to get milk to maintain health is justified by the vegetarians, scientifically and logically it is equally justified to raise any other animal or poultry to get meat or eggs to maintain our good health.

According to the Allergy Information Association the top 10 food allergies are as follows: Milk, wheat, eggs, fish, shellfish, walnuts (and other nuts from trees), peanuts (and other legumes), corn, food additives - e.g. sulphite, monosodium glutamate and tartrazine ( a food dye), and alcohol. The allergic reactions include itching, tearing eyes, sneezing, tingling in the mouth and throat, asthma, and death. From medical and health point of views if a particular food is harmful for health and disturbs the mind or is allergic to a person that food should be forbidden for that person. Guru Nanak explains this phenomena as follows:

ਬਾਬਾ ਹੋਰ ਖਾਣਾ ਖੁਸੀ ਖੁਆਰ ॥

ਜਿਤੁ ਖਾਧੈ ਤਨੁ ਪੀੜੀਐ ਮਨ ਮਹਿ ਚਲਹਿ ਵਿਕਾਰ ॥ ਰਹਾਉ ॥

AGGS, M 1, P 16.

*"If anything on eating, either creates pain to the body*  
*(including allergy) or*

*Creates evil thinking in the mind, is forbidden."*

The above discussion leads us to the conclusion that the Nanakian Philosophy makes the people aware that no food should be declared as a forbidden on the basis of unscientific and illogical religious concepts or traditions. Moreover, since it is difficult to distinguish between a vegetarian and non-vegetarian diets, therefore, there is no sin of eating food originating either from plants or from animals. Consequently, one has to find oneself or through the help of food specialists and doctors to find a perfect food to keep one's body physically fit and mentally sound to lead a perfect life.

#### IV. FINAL MESSAGE FROM THE NANAKIAN PHILOSOPHY

Finally, I would like to convey the following message from the Nanakian Philosophy for the humanity (including the Sikhs) of the Third Millennium about the future life:

ਆਗਾਹਾ ਕੂ ਤੁਾਘਿ ਪਿਛਾ ਫੇਰਿ ਨ ਮੁਹਡੜਾ ॥

ਨਾਨਕ ਸਿੱਝਿ ਇਵੇਹਾ ਵਾਰ ਬਹੁੜਿ ਨ ਹੋਵੀ ਜਨਮੜਾ ॥੧॥

AGGS, M 5, p 1096.

Nanak says:

*"Think about the future, look not on the past.*

*Make the present life a great success*

*Because there is no birth again."*

#### CONCLUSIONS

1. *Sikhi* (Sikhism) is the most scientific and logical religion founded by Guru Nanak during the 15<sup>th</sup> century when science was emerging as a very important subject in Europe that challenged many religious concepts.
2. Sikhism is based on the Nanakian philosophy that was further strengthened and preached by the Sikh Gurus of the House of Nanak. Nanakian Philosophy has been incorporated in the Aad Guru Granth Sahib (AGGS) by Guru Arjan and Guru Gobind Singh, consequently, it (AGGS) becomes the primary and original source of information on Sikhism.
3. Nanakian Philosophy allows its followers (the Sikhs) to be critical, do research, use discriminating intellect, to evaluate properly and thoroughly any thing/philosophy being offered before accepting it, however, in practice this is not being encouraged by the Sikh theologians and the Sikh religious authorities.
4. Although many Sikh and non-Sikh theologians keep science and Nanakian Philosophy far apart from each other, a critical analysis of Nanakian Philosophy indicates that both are intertwined with each other as hand in glove. Therefore, good

knowledge of science is necessary to understand and interpret Nanakian Philosophy in its real perspective.

5. Although Guru Nanak has used scientific information and logic to explain his philosophy, in many verses, he has also used allegoric expressions, ancient mythology/philosophy and rituals, to make the people to understand his philosophy. However, the use of allegoric expressions, ancient mythology/philosophy and rituals quoted in his verse do not form the part of his philosophy.
6. Since Sikhism is scientific and logical religion, therefore, it can be universally accepted by the generations of humanity to come during the Third Millennium, if it is taught/preached scientifically and logically.
7. Scientific and logical interpretation of Nanakian Philosophy will resolve once for all the persistent controversy: Whether Sikhism is a sect of Hinduism or Islam or syncretism of both, or Sikhism is a unique, independent, and scientific and logical religion for the humanity of the world.

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29. Time, The 1979 Hammond Almanac. Hammond Almanac, Inc. Maplewood, New Jersey.
4. Mentioning allegoric / mythical expressions in AGGS, ONLY as reference to explain the logical interpretations of Gurbani.
5. Lack of available "correct scientific and logical" Sikh literature.
6. Lack of diligent and discriminative skills and knowledge on the part of Sikh liturgy and theologians.
7. Lack of Institutions / opportunities to educate liturgy and theologians, on the scientific and logical understandings of AGGS and Sikhi.

I believe you have touched this subject closer to my heart by writing about the scientific explanations in Gurbani. In reference to 'Evolution', Guru Nanak has written very clearly in AGGS, M 1, P 19:

ਤਨ ਜਲਿ ਬਲਿ ਮਾਟੀ ਭਇਆ ਮਨੁ ਮਾਇਆ ਮੋਹਿ ਮਨੁਰੁ ॥..

ਸਾਚੇ ਤੇ ਪਵਨਾ ਭਇਆ ਪਵਨੈ ਤੇ ਜਲ ਹੋਇ॥

ਜਲ ਤੇ ਤਿਭਵਣ ਸਾਜਿਆ ਘਟਿ ਘਟਿ ਜੋਤ ਸਮੋਇ ॥

None other than Guru Nanak, although written in 15th century and recognized by current scientists, has stated this statement about the 'Creation' coming into existence. I think the basis of whole Sikhi concept can be initiated on this very statement alone.

#### *Some critical questions:*

1. On page 8, first column; "Therefore, any principle, that is unscientific or illogical, is taught in any religion, that religion is not going to stay very long during the next century or third millennium." This statement seems contrary to the fact that 'Christianity', 'Hinduism' and Islam are established and some are flourishing everyday.
2. I think, "some basic principles of Nanakian philosophy", need more emphasis and elaboration. From principle i) through vi), you have pointed excellent topics that all need prolific propagation into Sikh Diaspora.

#### *Recommendation:*

- Reference to Scientific/logical literature is needed.
- Similarly, reference to institutions or other sources are needed, where one can find scientific information. In other words, how, when and who can write such information?
- On page 11, Nanak's interpretation of various 'yugs', as states of mind needs further elaboration of various states of mind and their co-relation to yugs.
- In reference to (ੴ), I would only say that since majority of the Sikhs are uttering this word in the

## **REVIEWERS' COMMENTS AND AUTHORS' RESPONSE**

### **Dr Avtar Singh Dhaliwal, Johnson City, TN, USA**

Your article is as usual very beautiful and it has certainly touched my heart. It is an excellent document projecting multiple significant topics, direly needed by the Sikh Diaspora and other believers/students in Sikh religion at large. The salient features as I understood are: -

1. Scientific/logical explanations of 'TRUTH', as narrated in Nanakian philosophy.
2. Necessity of good knowledge of science to understand Nanakian philosophy in its real perspective.
3. Possession of diligent and discriminative skills.

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man-tendency to indulge in copying during the School, College and University examinations is a globally and universally known weakness in human-behaviour.

Statistically, hence, logically speaking, if the Guru had postulated, at the very outset of his experiment, the Null-hypothesis, which, by its definition, theorizes and philosophizes that nobody, from among the voluntarily gathered one million (1,000,000) or so, devotees of his "Mission" would fail in the examination given by him, then, the Guru, as the teacher par excellence, might have, at the very first call, realized that even the well-planned and the well-administered system of education could not scrape the inborn and the innate fear injected by Nature, in the marrow of the bones of us, as the living human-beings. But if, on the other hand, the Guru, as the experimenter, had started his experiment with the hunch or the hypothesis that even in an enormously large random-sample of living human-beings, there is a very very small number of individuals who are capable of guiding and directing the "Destiny of a Nation", then, the unique, the absolutely unusual and the historically un-precedented experiment conducted by Guru Gobind Rai, was a truly and immeasurably great success. Which of these two hunches was verified by the Guru will be the main thesis of the next instalment of this research-based paper. Mathematically, hence, logically speaking, the less is the number to be identified as the Leaders of the masses, the more difficult ought to be the Examination for that purpose. For further elaboration of this logically plausible proposition, the thesis entitled: "The Ailing System Of Examinations" [4] may be perused. Here, the author of the present series stands convinced that the Guru, in his experiment, intended to test the caliber of the Leaders who could mould the "Destiny of the People in India".

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3. Dhaliwal, A.S. 1977. Personality Correlates of Academic Over-Underachievement: Publisher: Guru Nanak Dev University, Amritsar, India.
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old way, it best be left alone. However, it does convey "God as ONE and His Creation that is ever expanding".

- Your article is too long, covering multiple subjects.

## **Response by the Author, Prof DS Chahal:**

Your critical questions are very important.

1. Your observation is right because of the level of scientific knowledge of the followers is very low. But my prediction is for the next century and the third millennium when people will be well versed with science. However, I will be writing more about this issue in the future.
2. I also intend to put more emphasis and will be elaborating on the Nanakian Philosophy and would be inviting more articles from others on this topic in the future.
3. I differ a little with your views on  $\text{ੴ}$ . My emphasis is on its pronunciation. According to Nanakian Philosophy no specific name can be assigned to the "Oora with an open end".

Your recommendations are also very useful and I will keep in mind to give as much information as possible. The article became long because the nature of the theme was so that required a lot of information to be added.