

Reconciling Biology to Religion: A Method of Enhancing Biology Education

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Abstract: *In this study an attempt was made to uncover areas where Biology as a science agrees with certain issues in the christian religion. The Holy Bible was examined, page-by-page, for issues that have some relationship with Biology. Biological principles were used to explain those issues and their implications to Biology education noted. It was suggested that in teaching Biology in schools, the synergy which exists between religion and Biology should be used effectively for a better teaching and learning experience. Biology education will be enhanced and Biology content more appreciated by learners.*

Key words: *Biology, Biology Education, Bio-religious, Holy Bible, Reconciling, Religion, Science.*

Date of Submission: 27-03-2020

Date of Acceptance: 15-04-2020

I. Introduction

It has been said that religion begins where science ends. This implies that anything not explainable by science is religion. If this is further stretched, it means that science and religion do not and cannot agree. Religion and Biology (a science) would seem to be parallel lines that never meet. On the contrary, they do meet; and when they meet, they produce an interjection that illuminates the path of Biology education, easing and enhancing the teaching and learning of Biology.

Biology education covers but not limited to:

- Understanding the basic principles of Biology;
- Employing the basic principles of Biology in technology;
- Explaining certain cultural and/or religious beliefs and precepts in terms of basic Biology principles.

The christian religion is replete with issues, better classed as bio-religious, which are evidence that science especially Biology, does agree, at least in some cases, with religion. Yes! In many religious issues that have to do with biological phenomena, there is a hidden biological principle. Such biological principles could be applied in making clearer and more understandable those issues. Herein lies the synergy, or agreement between Biology and religion.

Biology quarrels with, opposes, or rejects religion when it cannot experiment or prove a religious point. When Biology works with religion to establish a point, that is, when a point is biologically and religiously proven to be right, its acceptability becomes easy and it therefore, becomes a potent force in the teaching or learning of either science (Biology) or religion. For the learner, it affords him the purest of all satisfactions – intellectual satisfaction for the biologist and moral (spiritual) satisfaction for the religionist. When a matter or situation satisfies the need – intellectual or religious – of an individual, it becomes almost a law for him and its acceptance and observance does not pose any difficult. Learning or teaching such an issue becomes simplified even for the layman (non-biologist or non-religionist).

This discourse concerned itself with finding situations in the christian religion in which Biology, or its principles, could be used to explain or give enhanced meaning to some religious issues. Such explanations would be useful in fostering Biology education.

II. Methodology

The Holy Bible, which is the holy book of christians and the christian religion was used in this study. Page-by-page, some religious issues thought to be relevant to Biology as a science were picked out. The issues were placed side by side with Biology and areas of agreement noted. The table below shows the religious issues, what the Christian religion says about them and how Biology tries to offer explanations to them. The implications of the relationships to Biology education are also highlighted.

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S/ N	BIO-RELIGIOUS ISSUES	WHAT RELIGION SAYS ABOUT IT.	HOW BIOLOGY AGREES WITH IT.	IMPLICATIONS TO BIOLOGY EDUCATION
1	Incest	Sexual relations between closely related individuals such as brothers, sisters, first cousins, second cousins, etc not to be allowed. Holy Bible (a)	Inbreeding(marriage between closely related persons) lead to the transmission of deleterious recessive genes that come from common ancestors. This leads to the inheritance of hereditary diseases. It also reduces hybrid vigour, resulting in the production of weak offspring (Lieberman, Tooby&Cosmides, 2003).	Teaches and illustrates the transmission of hereditary characteristics from one generation to another.
2	Eve made from Adam's rib	A rib taken from Adam and used to make Eve. Holy Bible (b)	By somatic cell nuclear transfer (cloning) an individual is made (cloned). Through cloning, a new person or animal could be theoretically constructed asexually from any cell of the human or animal body, except reproductive cells or erythrocytes(Wilmet, Bai & Taylor, 2015).	Emphasizes the role of the nucleus (genes and chromosomes) in the perpetuation of life.
3	Male (human) circumcision	Human male to be circumcised few days after birth. Holy Bible (c)	Male circumcision involves the removal of the outer skin of the penis. This practiceexposes the penis properly, increases sensation and makes sexual intercourse more enjoyable. It also improves the appearance of the penis(The American Academy of Paediatrics 2012).	Sexual relations between the male and female are necessary for reproduction the perpetuation of the human species, and so must be enjoyed by both partners.
4	Sexual relations with animals	Humans are not to engage in sexual relations with animals. Holy Bible (d).	Sexual relations with animals may lead to infections - transmission of germs (infectious diseases) from animals to humans - Zoonanthroponosis (Roberts &Janovy, 2000).	Teaches the transmission of diseases or disease organisms from animals to humans.
5	Mixing of blood and yeast for food.	Prohibited. Holy Bible (e).	Yeast produces alcohol from sugars. Yeast in blood may convert the sugar in blood to alcohol, making food alcoholic and intoxicating. Auto brewery syndrome. (Painter, Cordell&Sticco 2019).	Teaches the alcohol producing ability of yeast.
6	Infectious diseases and boils	<ul style="list-style-type: none"> • Isolation of diseased person. • Washing of the person's clothes. • Washing of hands that touch the person. • Shaving of the person's hair. • Bathe the person with water. • Washing person with hyssop. Holy Bible (f) 	<ul style="list-style-type: none"> • Infectious diseases caused by living organisms. • Infectious diseases are contagious. • Quarantine (isolate) the person. • Treat with drugs to kill causative organism. • Hyssop plant (<i>Hyssopus officinalis</i> L) found to have antiseptic properties. (Tahir, Khushtar, Fahad & Rahman, 2018) 	<ul style="list-style-type: none"> • Teaches that infectious diseases and boils are caused by living organisms. • Emphasizes that infectious diseases are contagious and transmittable • Teachers that hyssop plant leaf extract contains antiseptic substance.
7	Mildew on clothing materials, leather,etc	<ul style="list-style-type: none"> • Mildewed (fungus-infected)materials to be thrown out into the refuse dump. • Scrape the inside of a mildewed house and throw the materials into a refuse dump. • Replace (plaster) the walls of the house. • Use hyssop and water and sprinkle in the house. Holy Bible (g) 	<ul style="list-style-type: none"> • Mildew (fungus) known to affect many materials, including clothes, walls of buildings. • Materials infected can be cleaned with anti-fungal agents. • Hyssop plant known to contain antiseptic substances(Walters, 2001). 	<ul style="list-style-type: none"> • Teaches that fungi attack and often grow and cover walls. • Use of antifungal substances to kill fungi.

8	Bodydischarge s	<ul style="list-style-type: none"> Affect beddings, seat, clothing, etc. Any who touches someone with body discharges to wash his hands and clothes, bathe with water. Material used by person with body discharges should be destroyed or washed with water. Holy Bible (h) 	<ul style="list-style-type: none"> Body discharges due to diseases. Body discharges can be a source of transmissible diseases. Materials used by persons with body discharges can be source of contagious diseases. 	<ul style="list-style-type: none"> Teaches the importance of body discharges as sources of infections. Teaches that body discharges are due to infections. Emphasizes that materials used by person with body discharges should be destroyed to avoid possible contamination of other healthy persons.
9	Eating of blood	Eating of blood forbidden. Holy Bible (i)	Blood of some animals harbour parasites, which could be transmitted when such blood is eaten.	Teaches the transmission of blood parasites, eg. through direct eating of blood, blood transfusion, exchange of sharp objects such as needles, etc.
10	Mating of different kinds of animals	To be prohibited. Holy Bible (j)	Animal breeding to get better varieties.	Emphasizes the importance of animal breeding through genetic manipulations.
11	Tattoo	Cutting of the skin and tattooing to be prohibited. Holy Bible (k).	Tattooing provides avenues for skin infection.	Teaches that infection organisms (germs) could get into the body through cuts in the skin.
12	Man lying with another man.	A man lying with another man as he would a woman - same sex marriage. Holy Bible (l)	Homosexuality is one way of transmitting sexually transmitted diseases. (STDs)	Teaches methods of transmission of STDs
13	Woman having sexual relations with animals.	Prohibited. Holy Bible (m)	A source of diseases from animals to humans.	Emphasizes the importance of Zoonosis.
14	Pig eating	Pig meat (pork eating) prohibited. Holy Bible (n)	Pigs act as biological vectors for some parasites of man and so could be sources of infections – sources of transmission of such parasites, eg. <i>Trichinella</i> species.	Teaches the subject of parasitology and how parasites are transmitted from one animal to another.
15	Yeast	Kingdom of heaven is like yeast that a woman took and mixed into a large amount of flour until it worked all through the dough. Holy Bible (o)	Yeast is used in the baking of bread	Teaches the importance of yeast fermentation and the use of yeast in bread making.
16	Flint knives for circumcision	Flint knives are to be used for circumcision of the male. Holy Bible (p).	Flint is a material used in producing a spark normally used in lighters. Use of flint knives ensures the sterilization (by heat) of the knife before being used in circumcision. Sterilized knives prevent infection.	Teaches the importance of the use of sterilized objects in surgery.

III. Discussion

Science and religion have always been or, appeared to be in stiff opposition. As a result, each tends to thread its own path – none tries to cross the other’s way. The result of this is accusations, intrigues, confusion, misunderstanding and, stiffer opposition. The human players in this fields often engage in verbal and sometimes, physical abuses and wars. Early scientists like Nicolaus Copernicus (who wrote a book titled “On the revolutions of the heavenly spheres”) and Galileo Galilei (an astronomer /mathematician, whose works supported that of Copernicus) had problems with the inquisition (a former Roman Catholic tribunal for the discovery and punishment of heresy) because of their scientific view of the universe which were thought to be in opposition to the teachings (or views) of the church. Charles Darwin himself was labelled “the most dangerous man in England” because of his organic evolution theory.

However, a close perusal will reveal that, instead of being miles apart, instead of being antagonistic to each other, science and religion have common meeting grounds. In particular, Biology and religion as revealed by this study, have areas in which each enhances, supports, fosters, and helps to explain the other.

Science sees religion as superstition. This need not be so. Sometimes there is some science hidden in superstition. Biologist Popper cited by Jevons and Stokes (1987) maintains that even myths and superstitions should not be derided because, ill-founded though they may be, they can act as source of theories. Sometimes,

too, one may find some religion in science (Ogbonda 2007). This may sound absurd, but cases abound in nature in which scientists openly confess they have no explanations for certain natural phenomena. For instance, Thomas Carlyle (1795-1881), a foremost scientist at the time had this to say: "I don't pretend to understand the universe – it's a great deal bigger than I am" (Awake! 1992). Again, what does science say about death? Yes! science knows about the cause of death, but why does science not stop or even reverse death? The evolution of the universe, the laws governing the universe and death must be beyond science. The explanations to them, therefore, must be left for and to religion.

If we accept the thesis that there is science in religion and religion in science, then we have reached a point of agreement. All we would need to do is to see how one can be used to explain and enhance the other. That's all. For the contemporary biologist, the principles of Biology can be used to explain certain religious precepts. This, surely, will lead to the propagation of Biology education at all levels. The Biology educator and the preacher (of religion) will then be in a better position to convince their audience (learners) as to the veracity of whatever they teach. Biology education will benefit enormously by this arrangement-Biology and religion working synergistically.

IV. Conclusion

Science generally and Biology in particular can be reconciled to religion. If and when this is done, Biology and religion can work in synergy to promote Biology education and enhance the teaching and learning of Biology for positive results.

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Martha I. A. Njoku, et al. "Reconciling Biology to Religion: A Method of Enhancing Biology Education." *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 10(2), 2020, pp. 47-50