

SECTION E, SCIENCE EDUCATION

Classroom Recognition of Conflict Between Theology And the Evolutionary Origin of Life

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Since the advent of the biological sciences in the mid-nineteenth century, man has resented the popular misconception of Darwin's statement on the possible evolution of man. Man is an egotist. He prefers to believe himself to be an unique animal and created uniquely so. Man disseminates. He will often accept the evolution of lower animals, but he can not, although he has the same basic needs and the same biological functions common to all animals, accept the theory of evolution as an explanation of the physical existence of man. By this very dissemination, he is placed in a position where he must continuously reassure himself of his unique superiority. Since observable evidence is to the contrary, he must create artificial standards of worth, such as color, race, nationality, social-economical status and religion.

This conflict between science and the unique creation of man has had an influence on our society more serious than that reflected by the 'monkey trials'. I do not believe it to be accidental that the majority of our great scientists have come from the poor or from the wealthy classes. The poor, never having felt superior, have little or no guilt at questioning the established order of things. They want change. The wealthy are secure in their own worth and have no need to hold on to the existing standards. It is the middle class that, having gained superiority, fear losing it. They do not wish to question the established order, for that which is gained may also be lost.

Within this middle class lies our greatest intellectual resources and our greatest danger. They admire and respect education. These are the accepted tools of advancement. They have the energy and drive to resist failure, and the potentialities for appreciating the beauty found in the simplicity and organization of science. Yet, they fear being individualistic and, preferring groups, straddle the fence on all issues. They are neither right nor wrong, black nor white, good nor bad, but a mixture—the little gray people. They could be lions but prefer to be sheep, safe within the fence of their own fears. These fears are the legacy of future generations.

The industrial revolution gave birth to the middle class. The scientific revolution set them apart for a hundred years. In the last sixty years, the scientific culture has come to understand that it must have new sources of energy, drive and intelligence for its technical society. We must have more nurturing and maturing of intellectual resources to satisfy the demands of the atomic era. Only during the last ten years, have we realized that the maturing of these fellow talents must begin at an earlier age, if we hope to maintain adequate resources for the survival of our way of life.

I know this philosophizing seems, to some, ambiguous and remote from the teaching of biology in our classrooms, but is it?

Man has always searched for the answer to where he came from and to where he is going—the alpha and omega. It is only when he can associate his coming and his going with all life in the universe, that man gains the freedom to reach an understanding as to his worth, and the purpose of his individual coming and going.

The concepts of molecular biology can give man his association with the mysteries of the Universe. The theory of evolution should establish

his kinship with all life, including his fellowman. It is not a coincidence that prejudice against minorities is lacking in most scientists.

Teachers have for years refrained from tampering with controversial subjects. Teaching of the biological sciences in high school has been primarily restricted to the physical structures and biological functions of plants and lower animals. Biology students are taught that frogs have urinary systems, earthworms excrete solid waste, *Paramecia* conjugate and pigs and cows are prolific. It is only through association that students derive knowledge of their own intimate functions.

Publishers, being aware of public opinion, often place the theory of evolution and genetics at the back of the textbook. They know that many teachers are straightforward, highly organized, chapter people who never have time to cover all the text material. Seldom does anything but tall green peas, dwarf yellow peas, a smooth white rat, a rough black rat and a few *Drosophila* escape from this Pandora's box. Molecular biology and the origin of life are left entirely to the discretion of higher education.

The recent uproar in Texas over the state adoption of the BSCS textbooks seems to affirm the social wisdom of this method of teaching, or not teaching, the theories that deal with the function and creation of a miracle—man.

Man's faith in his divine creation is based on his belief in the Bible. He accepts the words of the Bible on faith. Faith is such a delicate thing and can be only as strong as man's belief in himself, or in God. Shouldn't we, as teachers, respect the student's belief in himself and God? Must we say the Bible is wrong; God did not create? Would it not be better to help him to keep his faith within the framework of scientific knowledge? In order to do this, there must be a separation of the physical man from the spiritual man. A teacher can not take the act of creation of physical man from God without preparing the student for this divorce.

Preparing the student. Open discussion about the origin of life, with teacher control but without teacher participation, is the method of communication I use. It is made clear to the students that individual beliefs are personal and dear to each child; that it takes courage for anyone to uphold his own beliefs. As long as these beliefs are honest they warrant the highest respect of teacher and pupils.

Such discussions, which accept the conflicts that exist between theology and science as to the origin of life, relieve the resentment and silent resistance of the students to a great extent. Resentment results from the guilt most students feel when considering assumptions that seem to infringe on the authenticity of the Bible or on the power of God. I suppose the psychologists would say that public affirmation of a belief in God relieves the guilt complex.

Since I have listened to the students and have voiced approval of their courage in standing up for their own beliefs, they are in a frame of mind to award me the same courtesy.

An approach to the problem. The first problem in the separation of physical man from spiritual man is to separate the physical man from the image of God. This is not easy. High school students have had very little practice in abstract thought. By class discussion, which stems from leading questions about the image of God, the teacher can gently channel the thoughts of the students toward an understanding of what is meant by the separation of physical man from spiritual man.

The following is an example of the type of questions I ask during a class discussion and the usual class responses that are elicited.

Question. The Bible states that man was created in the image of God. What is the image of God? Is he Negroid, Amerind, Caucasian or Mongolian; tall, short, fat or thin; murderer, thief or genius?

Response. Of course, students can find no physical image that will describe God. Their own need for superiority will not allow them to accept a God not in their own physical image. Reason will not allow them to refuse other men a right to God.

Question. Since the image of God is not a physical form, then what characteristics are common to all men and to God, but are not characteristic of lower animals?

Response. After much discussion, students will agree that (1) all men have the ability to reason; (2) all men have the ability to create, meaning to bring into existence that which did not exist before, such as a painting, a book, a building or, even a sewer; and (3) all men have the capacity for love and compassion for others.

Question. Since these characteristics that are the image of God are spiritual and abstract, does it really matter in what physical form they first came into being, or were created?

Response. The students will agree that it does not really matter, but they will still return to the theme of the Bible tells me so. Human animals, regardless of religion, resist the implication that the form beautiful is of minor importance.

Question. The Bible states that God is love and that he lives in you. (I John 4:7-21). If this is true, then is not the image of God created in you by yourself?

Response. Students may not accept this wholeheartedly. It puts too much responsibility on the individual, but most will think about it without resentment.

Question. Have not the God-like characteristics, which we now attribute to man, evolved over the centuries? Did not Abraham produce a son out of wedlock? Did he not send mother and child into the desert to die? Would we say Abraham was in the spiritual image of God as we know Him today?

Response. Students will all agree that this nefarious deed of Abraham was not an act associated with the spiritual image of God. They will discuss the various deeds of the Old Testament prophets, which do not come up to our concepts of God-like behavior as it should exist today. Students will discuss other Biblical characters who sometimes acted too human. Those most often discussed are: Lot, whose daughters bore his children; Cain, who killed his brother because of jealousy; the brothers, who sold Joseph into slavery and lied to their father; Laban, who cheated Jacob of seven years of work and gave him Leah instead of Rachel; Jacob, who not only stole his brother's birthright, but later, embezzled his father-in-law's cattle. He did this by placing spotted branches in front of pregnant cows, causing them to drop spotted calves. The genetic probability is faint, but the intent to defraud is clear. Other characters are David and Bathsheba; Solomon and his seven hundred wives; Herod and Herodias, who were responsible for the beheading of John, the Baptist; and Pilate, who washed his hands of the responsibility for the death of Christ. If this discussion continues for more than one day, biology students become Biblical scholars.

Question. From these examples of religious leaders of the Bible, would you not arrive at the conclusion that over the ages, our concepts of behavior associated with the image of God have changed or evolved?

Response. Students will agree that the spiritual image of God has changed over the centuries, and that people are becoming better all the time. This is easy for the student to accept because of his need to feel superior. It is a nice, safe, smug feeling to believe oneself to be better than past generations.

Question. Does not the Bible tell the history of this evolution of the Christian religion and the growth of the spiritual image of God? Could not the growth of man's spirit to higher levels, as told in the Bible, be called the ascent of man's spirit? Are not the Biblical laws and the ten commandments the methods used for achieving this spiritual ascent?

Response. After some discussion of other possible methods of achieving the spiritual image of God, students will agree that these questions can be answered in the affirmative.

Question. Since we agree that the Bible tells of the spiritual ascent of man toward the image of God, is it so impossible or against religious beliefs to attempt to understand how science explains the evolution or physical ascent of man?

Response. Most students will agree that science need not conflict with theology. Religion, which is of the spirit, does not prohibit the discussion of how life, as a physical form, could have originated and evolved into the physical structure we call man.

Result of class discussion. After class discussion, which attempts to separate the physical man from the spiritual man, students can more easily accept the study of molecular biology as the tools which could have brought about life on this earth. They can better appreciate the beauty, organization, and simplicity found in the physical functions of all life. They can be, as I am, awed by the miraculous creation that has resulted from two separate evolutionary processes, evolution of the spirit and evolution of the physical form. When these two processes are brought together in one organism, we have the complete man.

SUMMARY

It has been assumed that a conflict, between theology and science, does exist in the biology classroom. This assumption is based on the reluctance with which teachers of biology approach the subject of evolution and the origin of life, and from the recurring public controversies over textbook material, which emphasizes these topics. This conflict should be recognized. An attempt should be made to resolve this conflict by enhancing and maintaining the child's faith within the framework of scientific knowledge.

I have advocated the definite separation of the physical man from the spiritual man as the best approach to a solution to this problem. I have attempted to demonstrate my classroom approach to the problem.

The separation of physical man from the spiritual man is based on my personal beliefs. I can not devise an experiment to uphold my hypothesis. I can only assume, on faith, that there are truths unseen. I do know that there were more professed atheists at the beginning of the scientific revolution than there are today. I do not believe that this is the better part of valor, nor of social pressures. I believe as man discovers more, he humbly realizes there is so much more that he does not know. He can only be awed by the vast possibilities. He can not but be eager for the continuous evolutionary ascent of man in form and in spirit. As a teacher of biology, I wish to endow my students with this awe and this eagerness for life. Molecular biology and the theories associated with the origin of life are the tools of this endowment. C. P. Snow (1964) has made this statement, "This branch of science (molecular biology) is likely to

affect the way in which men think of themselves more profoundly than any scientific advance since Darwin's—and probably more so than Darwin's."

That seems a sufficient reason why the next generation should learn about it. The Church recognizes invincible ignorance; but here the ignorance is not, or need not be invincible. This study could be grafted into any of our educational systems, at high school or college levels, without artificiality and without strain."

To teach molecular biology "without strain", biology teachers in the Southwest must recognize the conflict which does exist between theology and science in their classrooms. They should make a positive attempt to alleviate this conflict.

LITERATURE CITED

Snow, C. P. 1964. *The Two Cultures and a Second Look*. Cambridge University Press, New York.
