

GIBS-VIEWS LETTER
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SCIENCE, RELIGION AND
SOCIETY:
A Futuristic Vision

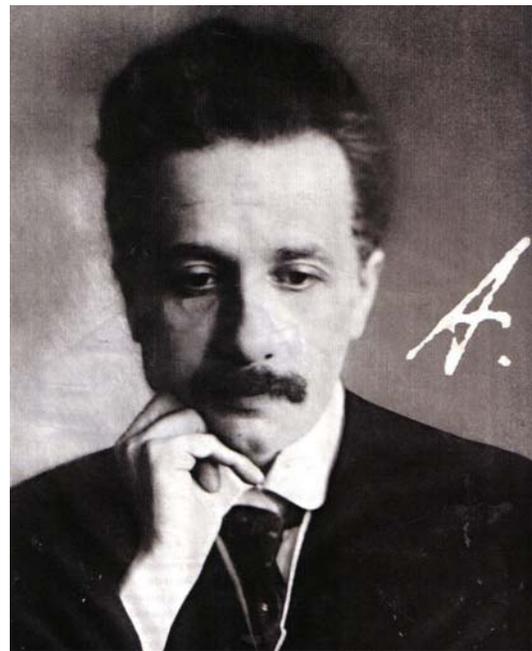
Prof. Robert Y. George Ph. D.*

* This viewsletter is essentially expanded from a speech given by the author on September 4, 2004 during the first Fulbright Academy Forum, held in the Agassiz Room of the Museum of Comparative Zoology, Harvard University, 26 Oxford Street, Cambridge, Massachusetts

Historically philosophers, more so in the West than in the East, made significant contributions to science and technology since the industrial revolution by introducing ideas that impacted both military development, domestic socio-economics and international political life after the collapse of communism. America emerged as the sole super-power. This paper focuses on, in a futuristic perception, what holds for the mankind globally in the 21st century in the light of interaction between human thoughts (philosophy and religion) and science and technology. This inquiry is one of the primary missions of the Fulbright Academy and the very purpose of this meeting at Harvard.

Early in the 13th century Thomas Aquinas defined theology as a branch of science. Is it really true? French philosopher Rene Descartes, a skeptic on the existence of God, in the 15th century

found MIND in the *cogito ergo sum* and widened the link between religion and science The discovery of Copernicus in the 16th century that the earth goes around the sun was not in agreement with the conventional religious wisdom. Recently in the last two centuries (19th the 20th) socio-economic and political progress revolved around the theories of Charles Darwin (1857 – ‘Origin of Species’) and Karl Marx (founder of communism).



Einstein

Albert Einstein in his eloquent lecture at the Princeton Theological Seminary emphasized the importance of understanding religion in the light of science. Now in the 21st century we have the Wilsonian concept of ‘**Consilience**’ (the union of knowledge) as defined in a thought-provoking book by Harvard socio-biologist and conservation ecologist Edward O. Wilson. An appeal is made to accept the consilience concept as a guiding principle and awaken a “Planetary Consciousness” to take the path less traveled (as American Poet Robert Frost

defined) toward a peaceful earth with international understanding and mutual respect between cultures, as envisaged by William Fulbright.

The meaning of life and ‘the future of life’ (Wilson, 2002) are all more serious concerns of thinking mind, particularly after the paradigm shift in international politics since the 9/11 tragedy. John Locke wrote in 1690 his “Essay concerning Human Understanding” and claimed that “In the beginning there was Mind. For it is impossible to conceive that even bare incognitive matter should produce a thinking intelligent Being, as that of nothing should of itself produce matter”. In essence he argued that nothing could come from nothing: “*Ex nihilo nihil fit*”. In Aristotelian thinking process this is a deductive argument. The Nobel-prize winner physicist Max Delbrook approached metaphysics on a similar theme in his book: “Mind and Matter”. What is this “Mind” that existed prior to “Matter” or before the origin of time and space? Does it mean Locke’s “Cognitive being” is really God?

David Hume, a century before Darwin, attempted in 1779 as a religious skeptic to destroy arguments for the existence of God in his famous book: “Dialogues Concerning Natural Religion”. In Hume’s book there are two fictional characters. ‘Cleanthes’ proclaimed that the ‘Author of nature is somewhat similar to the mind of Man’. The second character ‘Philo’ challenges ‘Cleanthes’ and stated that “Throw several pieces of steel together, without shape or form, they will never arrange themselves so as to compose a watch”. He further pointed out that “Stone, mortar and wood but without an

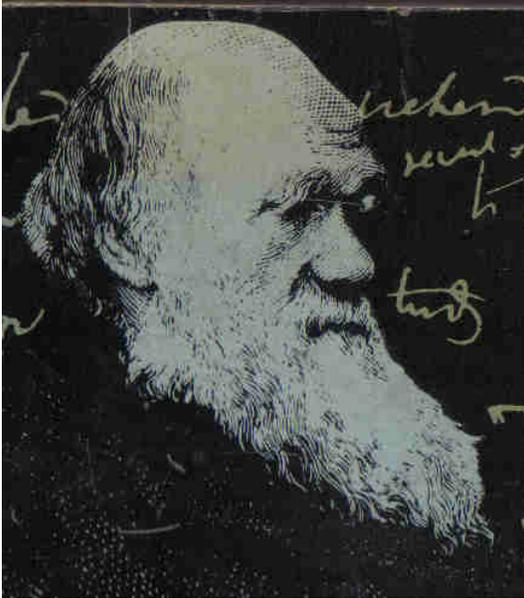
architect, never erect a house”. In fact, Hume is acknowledged by almost all historians of philosophy as ‘Philo’. In today’s time the world order is nebulously defined and in this paper an effort is made (a) To explore the link between science and religion and (b) To arrive at some mechanism to shrink the widening gap between Eastern and Western civilizations or cultures.

SOME PHILOSOPHICAL IDEAS

Prior to Charles Darwin the world believed in John Locke’s view of life when God was on the top of the Cosmic Pyramid. The sequence from the bottom to the top of the pyramid is as follows: (1) Nothing (2) Chaos (3) Order (4) Design (5) Mind (6) God. Design is prerequisite for order and in fact design is what Aristotle referred as *telos*. “*The whole universe is nothing but God’s artifact, a product of His intelligence*”. The author of communism Karl Marx concluded that Darwin had to put an end to *teleology* and therefore, eliminated design to order. Marx was profoundly influenced by the philosophy of the British communist leader Frederick Engel who asked a question with confidence: “With the philosophers to think, and the working men to fight for us, will any earthly power be strong enough to resist our progress?”

In 2008 we will celebrate Darwin’s centennial birth day to honor a genius who made fundamental contributions to human thought and pursuit of knowledge. It is appropriate that we give careful considerations not just to his evolutionary theories but also to the his concern on the ecology of life on earth and the survival of 1.8 million known

species and 10 or more species yet to be described.



On October 1, 1873 Charles Darwin wrote a letter to Karl Marx for thanking him for the book “Capital” and endorsed the communist philosophy in his statement: “Though our studies have been so different, I believe that we both earnestly desire the extension of knowledge and this in the long run is sure to add to the happiness of mankind”. John Dewey in his book “The Influence of Darwin on Philosophy” in 1910 emphasized the shift from the idea of an intelligent designer (God) that shaped things once for all.

After obtaining a degree in theology, Darwin learned geology under the guidance of Lyell. He then became a biologist by his own efforts. Darwin never had formal training in Physics or Chemistry. The intricate relationship between design and order in the cosmic pyramid is more in the realm of physical structure and chemical molecules, which Nobel laureate Linus Pauling used in deciphering DNA. However, Darwin’s

lack of perception of genetics or absence of formal academic education in biology did not hinder his ability to come up with one of the most important discoveries in biology – the theory of natural selection. Undoubtedly he was a genius.

Physicist Ernst Schrodinger wrote in 1967 a book entitled “What is life”. Schrodinger defined life on the basis of the Second Law of Thermodynamics: accordingly entropy is simply disorder which is the opposite of order and the entropy of any isolated system increases with time as per the Second law. Does the heat generated at the “Big Bang” produced entropy, causing disorder from order? We now know that the universe is still expanding and equilibrium or steady state is not yet reached.

A famous French philosopher made a significant effort to condense all of nature to mathematical laws. Rene Descartes wrote his first book “*Discourse de la Methode pour bien Conduire la raison et chercher la Verite dans les Sciences*” (Discourse on the method for properly guiding reason and finding truth in sciences). Descartes found MIND in the *cogito ergo sum* and then body in EXTENSION, two parallel realms joined only in the pineal gland of the brain. We must recognize the fact that his days are the days when the dark age of mankind was awakened from the long slumber from the days of Aristotle. Scientists like Galileo questioned the ancient Greek conception of earth as flat but not round and located at the very center of the solar system (not orbiting). Biology as a science attained maturity when William Harvey discovered the function of the heart as a double pump. Philosopher Descartes speculated that the

heat of the heart was the cause of the heart beat.

Descartes, one year before he died at the age of 54 in 1649, became the personal tutor of Queen Christina of Sweden in Stockholm, just like Aristotle became a tutor of Greek emperor Alexander centuries ago. Rulers of the old days, unlike heads of government today, respected philosophers and intellectuals. In fact scientists were mistreated in the present society and many left their native lands to find peace in an adopted nation. Renowned biologist J. B. S. Haldane left Britain for good and settled in his final years and died in India. Science is riding in the back seat in the United States today with National Science Foundation underfunded. We need a paradigm shift.

Another diplomat and philosopher in Italy Niccolo Machiavelli (1469 – 1527) was a product of the golden age of Florence in Italy. At the dawn of the sixteenth century Machiavelli played a dominant role in the selection of the Pope Julius II in Rome. He wrote the literary document *The Prince*. He believed that politics was an art, independent of morality and religion. Some modern philosophers argue today that political tactic of Machiavelli influenced 20th century dictators like Josheph Stalin in Soviet Russia and Adolf Hitler in Germany. Atheism emerged more visibly in Europe than in America. Question now emerging in the minds of American people today is: What is the fundamental reason for our founding fathers to separate church from the government, despite the reluctance espoused by Benjamin Franklin. In 2004 we are witnessing in the United States a

reversal of this policy and a shift toward a faith-based government.

BIRTH AND GROWTH OF THEOLOGY

German philosopher Immanuel Kant separated empirical knowledge and theology as two exclusive and distinct realms. He identified the three entities: Self, the World and God. In other words, these are really (1) Psychology (2) Cosmology and (3) Theology. St. Thomas Aquinas in the 13th century established the concept that man, besides being a body, is also a mind. Even the primitive man realized that death or even dreams indicated something immaterial about man. Today in American Universities there is a lack of emphasis in the curriculum on interdisciplinary pursuit of knowledge. This fragmentation of knowledge came about in the 20th century. Only an education reform can bring about a change where discipline-oriented education should wane and give way to emphasis on interdisciplinary courses and international encounters as implied in the Fulbright mission.

In Greek theology means theos (god) and logos (knowledge). Aristotle considered Homer, the author of *Iliad* and *Odyssey*, as a theologian, despite the polytheistic and paganistic implications. Nevertheless, God (with G in capital letter) was the creator in the monotheistic religions, namely Judaism, Christianity and Islam (all Abrahamic religions). St. Augustine gave the first definition for theology as “ a discourse about divinity”. However, the first person ever to claim theology as a branch of science was St. Augustine

(1225 – 1274) who argued that the theology explores the contents of belief, not blindly, but by means of “Reason enlightened by faith” (*fides quaerens intellectum*).

Much of the modern thinking about God in the post-Darwinian world revolved around the doubts Thomas Huxley in the 20th century raised about the very existence of God by coining the word ‘agnostic’ (not atheistic). Huxley really borrowed the idea from the word “Gnosticism”, a concept based on the ‘Greek Hellenistic Heresy’ of Homer with a polytheistic connotation. Polytheism flourished in the mythology of Egyptian Pharaohs, Aryan and Hindu epics of *Mahabharatha* and *Ramayana*, Roman and Greek gods and goddesses.

After the advent of Islam, based on the teachings of Muslim prophet Mohammed of Mecca and Medina, the middle ages of the eighth and ninth centuries witnessed a fusion of sacred and profane (paganistic) cultures. The archbishop of Canterbury, St. Anselm (1033 – 1109), was not happy with this idea of fusion of good and bad or truth and lies. He coined the words “Scholastic Theology” to erase paganism or polytheism from theology. A century later Thomas Aquinas came up with a synthesis as *Summa theologiae* which American theologian Richard Niebuhr described as a combination of theological concepts ‘without confusing philosophy and theology, state and church, natural and divine laws. Perhaps the founding fathers of our country saw some wisdom in the theory of Aquinas to separate state from church.

MODERN SYNTHESIS BASED ON EINSTEIN’S IDEAS

Jimmy Carter, our former president, emphasized the widening gulf between East and West when he accepted the Nobel Prize for peace. I met him in Budapest, Hungary during the Fulbright 50th anniversary celebrations and listened to his views on the relationship between church and state. He also quoted in his book “Living Faith” the words of Richard Niebuhr to reinforce his own view: “To establish justice in a sinful world is the whole sad duty of the political order. There has never been justice without law. And all the laws are the stabilization of certain social equilibrium, brought about by pressures and counter-pressures in society and expressed in the structure of government”. Albert Einstein advocated a similar philosophy wherein lies the bond between religion and science. Let us look at what Einstein proclaimed in conjunction with religion and science for the purpose of understanding how he saw the link between creation and evolution.

Admittedly, Newton’s views and ideas impacted Einstein significantly since Newton probably wrote more on religion and alchemy than physics *per se*. Many of the concepts of Newton in his PRINCIPIA come from Descartes two realms of MIND and EXTENTION. Einstein’s view are crystallized in four pages of his writings in the New York Times Magazine on November 9, 1930, but the same article he published in German two days later in Berliner Tagblatt. His concept is that longing (to know the truth) is the “motive behind all human endeavor and human creation”. He argued that in the primitive man feelings of fear evoked the religious notion. These are fears of wild beasts,

diseases, famine and natural disasters. These religious apprehensions compelled the people to each a supernatural power to seek help. The idea of “God of Providence” originated to “protect, dispose, reward and punish”. In Einstein’s words, this is “the social or moral conception of God. In the Old Testament (Torah) the first five books of the Bible reveal the development of the religion of fear to moral religion or the shift from polytheism to monotheism.

Einstein argued: “it is very difficult to elucidate this feeling to anyone who is entirely without it, since there is no anthropomorphic conception of God. The individual existence impresses him as a sort of prison and he wants to experience the universe as a single whole. Einstein thought that even the preaching of Francis of Assisi and the philosophy of Spinoza (*Amor de Intellectualis*) contained some elements of cosmic religious feelings and sometimes even misinterpreted as atheism in a mask. Nevertheless, the key question still is: Is religion an irreconcilable antagonist of science? Einstein asked how can God who rewards and punishes human beings since man is powerless just as “an inanimate object not responsible for the motions it undergoes”. This is why church has always fought science in the days of Galileo and virtually persecuted scientists. Presumably, cosmic religious feelings, according to Einstein, is “the strongest and noblest motive for scientific research”. This is why Kepler and Newton spent “years of solitary labor in disentangling the principles of celestial mechanics”. Einstein once said that in this materialistic age of ours the serious scientific workers are the only profoundly religious people”.

Einstein in his lecture to the Princeton Theological Seminary on May 19, 1939 (published also in his book “Out of my later years”) defined a religious person as follows: “One who has liberated himself from the fetters of his selfish desires and is preoccupied with thoughts, feelings, and aspirations to which he clings because of their super personal values”. A conflict arises when a religious person or community insists on the absolute truthfulness of all statements recorded in the Bible. According to Einstein this action is an intervention on the part of religion into the sphere of science. The goal of religion is essentially to liberate mankind from the bondage of egocentric cravings, desires and fears. Scientific pursuit can help man to achieve this goal. Einstein concluded at his Princeton lecture with this emphatic statement: “Science not only purifies the religious impulse of the dross of its anthropomorphism but also contributes to a religious spiritualization of our understanding of life”.

In an article published in the ‘The Christian Register’ in June 1948 Einstein compared the various existing religions of the world and concluded “in their essential substance, that is divested of all myths, they do not seem to differ basically from each other”. This generalization is the unifying force that I saw in the Fulbright conference on the “Spirit of Global Understanding” in Budapest in 1998. The famous Einstein statement is worth quoting here: “Science without religion is lame and religion without science is blind”.

FULBRIGHT VISION



Senator William J. Fulbright of Arkansas in 1945, soon after World War II, proposed to the US Congress the Fulbright International Exchange Program as an American outreach effort to promote mutual understanding of the cultures and societies of all the countries of this troubled world. President Harry Truman, upon approval by US Congress, signed into law the Fulbright Program in 1945. 140,000 Fulbrighters came to the United States. In its first 50 years, 80,000 American Fulbrighters were benefited either by teaching or doing research in one or more of the 140 participating foreign countries. I am one of these fortunate Fulbrighters.

Let me at this juncture define the Fulbright vision in his own words in the following three quotations, as uttered so wisely by this wiseman who originated the Fulbright dream that is the torch borne by every member of the Fulbright family which now number nearly quarter millions in all corners of the world.

1. “Man’s struggle to be rational about himself, about his relationship to his society and the other people and

nations involves a constant search for understanding among all peoples and all cultures – a search that can only be effective when learning is pursued on a worldwide basis.” -- William J. Fulbright.

2. “ The essence of intercultural education is the acquisition of empathy – the ability to see the world as others see it, and to allow for the possibility that others may see something we have failed to see, or may see it more accurately” – William J. Fulbright

3. “ Our future is not in the stars but in our minds and hearts. Creative leadership and liberal education, which in fact go together, are the first requirements for a hopeful future for humankind” --- William J. Fulbright.



Harriet Fulbright and Robert Y. George

Religion Speaks as does Science

Ever since the dawn of the Egyptian civilization in the days of the Pyramids, there was confrontation between religious thoughts. While the Pharaohs advocated the peganestic multi-gods concept, the Hebrew slaves under the leadership of Moses proclaimed the glory of one God. The Monoans in the Mediterranean island of Greek believed in Nature as super-force and were

subdued by the Athenian Greeks from the mainland who worshiped many gods. The Romans invented gods for great variety and built temples to adore these Greek gods and goddesses. The pinnacle of pantheism culminated in the Hindu religion.

The denominations within Christianity increased in the evolution of this great religion. Wars arose between Protestants and Catholics in Europe. John F. Kennedy was questioned by theologians of all faiths (Presbyterians, Baptists, Episcopalians, Methodists etc) in 1960 in the Greater Houston (Texas) Historical Association when he was a candidate for the presidency of the United States of America. Kennedy was bold and persuasive in his arguments to support his fundamental view that church and state are separate, as clearly defined in the constitution of the United States. The founding fathers, though Christians in their faith, carefully avoided religion in any form or fashion in the governance of the American people. Kennedy in essence told the Texas theologians that "I believe in an America where it does not matter whether the elected president is Catholic or Protestant or Jewish". In essence, he declared that "All men and all churches are equal, as embodied in the First Amendment".

Kennedy was confronted by the theologians in Texas about his selection as a speaker in Philadelphia in 1947 as one of the 3 speakers, one representing Protestants, one the Jewish faith and Kennedy as spokesman for Catholic religion. Kennedy served hardly four months since he was elected to represent Massachusetts in the US Congress. He turned down this invitation and did not

go to Philadelphia. Kennedy recalled the convention of the Bishops in 1948 and their declaration to separate church from state. He supported this joint statement. He said to the Texans that he is not a Catholic candidate but he is a democratic candidate. When asked by a theologian whether he will consult the Vatican for any action, he swiftly replied that I do not need approval from the Pope and he said: "I am not a student of theology".

What a contrast between the days of Kennedy in the sixties and the modern day. The most dangerous development in these days is the emergence of pseudo-religious pundits like late Rev. Jerry Falwell and Rev. Pat Robertson who influenced right-wing republicans to create an office for faiths in the White House in the Bush administration. This, in itself, is contrary to the prudent policy of "Church separate from Religion".

THREE PATHS TO CHAOS

In the course of evolution of human civilizations, from the ancient Egyptian to the modern, American we saw hurdles and obstacles and *Homo sapiens* did not fully recognize the fact that we are a single race. We put the differences ahead of our unity, like the cart before the horse and chose the three paths leading to chaos. (1) Racial prejudice and ethnic confrontations (2) language barriers leading to lack of communications and battles of cultures and (3) evolution of a mosaic of religious faiths with their ramifying denominations. Since September 11, 2001 we are genuinely concerned about our own security, prioritized without any compromise but eager to move toward peaceful coexistence and mutual respect between different cultures. What then we should

do to bring some cementing force to unify these three paths to chaos?

The renowned Swedish biologist Carl von Linnaeus in the 17th century divided the human race into four broad categories on the basis of skin color: Black (Africa & African American), White (Caucasian or European), Yellow (Japanese & Chinese) and Red (Native Americans). Perhaps Linnaeus left out the Brown (Indians). More appalling was a recent 2001 book which attempts to explain the evolution of human races in a book entitled “The Seven Daughters of Eve” (The science that reveals our genetic ancestry), authored by a British scholar Bryan Sykes. All seven daughters Ursula, Xenia, Helena, Velda, Tara, Katrine and Jasmine are Europeans as if the other human races do not count. Human races were once geographically separated and therefore, genes did not mix. However, immigration and emigration processes, as induced by improved transportation from ancient camel or horse rides to modern jumbo jets, contributed to the flux of genes in interracial relationships. Just recently in 2002 we realized that there are only 40,000 genes in human genome and not 100,000 genes as originally thought. This situation improved the human genome project. As of February 2002 30% of the genes were sequenced and one year later in 2002 80% of the genes were sequenced. We also know that between any 2 individuals in the 6 billion people, who inhabit the earth today, no matter what ethnic or racial background, the similarity in genes is 99.8%. This very thought should make mankind united on genetic grounds. We are similar to bacteria 40%, mice 60% and our closely genetic relationship is to a chimpanzee at 95%.

The second obstacle in human unity is attributed to language barriers. Present day human cultures and subcultures are based on languages and dialects that evolved to develop primarily group communication. Some African Americans prefer to call their language “ebonics” (like Pidgin English in China and Creole English in the South. This pattern of isolation leads to diversification. We need to look at education as a tool to unify the family of languages that include Indo-European, Afroasiatic, African (Banu, Sudanic, Nilotic, Nubian), Ural- Altaic (Finno-Ugric family, languages f Estonian, Finnish, Hungarian, Dravidian, Mangolian and Samoyeds of Siberia). Bilingualism or multilingualism is one approach but appallingly low percentage of Americans is bilingual. This picture must change. One unifying trend we see today is the wider use of English in all parts of the world.

The third obstacle for human unity is the diversification of religious faiths on the face of the earth today. The Nicene council in the fourth century, under the authorization of Emperor Constantine, established Christianity and stopped persecution of Christians in Europe.



The next mega-trend started when the birth of Islam as a major religion

occurred in Mecca and Medina with the preaching of Mohammed. The backbone of USA foreign policy, with enormous tax-dollars spent in billions ever since the birth of Israel as a nation in 1948, revolves around the religious conflicts between Jews and Palestinians and oil in the Middle East with UK as a partner in the global scene. Is there a solution to this problem? What is obvious is that sooner a solution is reached better the scope for global peace, the goal of the Fulbright dream. The new and challenging concept of *consilience*, advocated by E. O. Wilson of Harvard, is timely and offers potential solutions for these problems as we march into this century (Wilson, 2000).

WILSONIAN CONCEPT OF CONSILIENCE

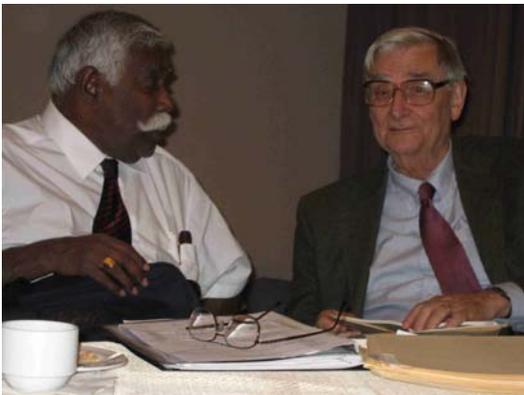
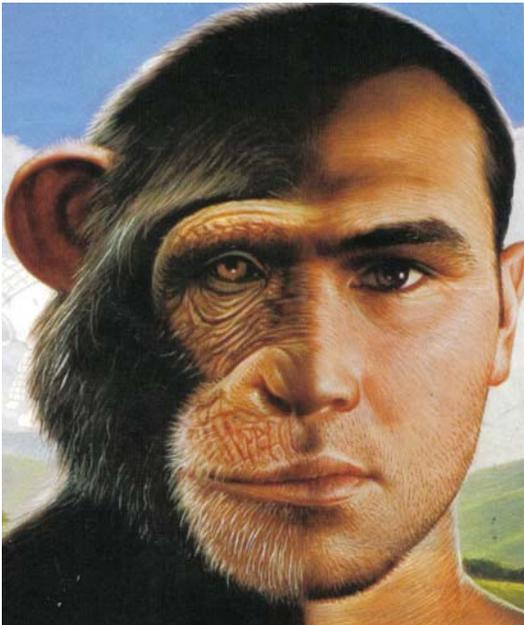
Wilson is a great 'bridge-builder' between Sciences and Humanities and his book "Sociobiology" was selected by the Animal Behavior Society as the most influential book in the 20th century. Traditionally in most liberal arts institutions of higher education we have a school of college of arts and sciences. However, this academic arrangement has become more a fiscal affair to distribute resources between heterogeneous departments, most often unequal in faculty strength and curriculum, A change to this scenario is inevitable as more and more course offerings become interdisciplinary in nature, just as sociobiology as a marriage between disciplines.

In his writings, which won him two Pulitzer Prizes, Wilson recognized the orderliness in the human species and in the cosmos at large. He was concerned about specialization and fragmentation

of knowledge in the 20th century. He was also impressed by Einstein's ideas of the great unification of physics and he pursued a course to unify all knowledge. This venture led to his new concept of *consilience*. He makes it clear that the linkage of sciences and humanities is undoubtedly the greatest enterprise of mind. *Consilience* is the mechanism to achieve the noble goal of unification of sciences and humanities. Wilson gives credit to William Whewell for first coining the word consilience in his 1840 synthesis – " *The philosophy of inductive Sciences*". There is a good argument to prove in the modern days that the boundaries within natural sciences are disappearing and replaced by " hybrid domains in which *consilience* is implicit". This is the best time in the history of mankind for collaboration between scientists and humanists (philosophers). Fulbright Academy also recognizes this union as a motivating force toward peace.

Wilson eloquently describes the life and contributions of the French philosopher Marquis de Condorcet (born in 1743) who in the 18th century was a mathematician and applied maths to social science. He also opposed the colonial policies of France. He founded the society for the friends of the blacks to oppose slavery. He was a contemporary of Immanuel Kant. He was an ethicist who advocated the idea of unity of human race. With the onset of the French revolution Condorcet became a politician. He wrote the book " *Sketch for a Historical Picture of the Progress of Human Mind*". His theory was that culture was governed by laws just as those of physics. In the last chapter of his book (The tenth stage; the future progress of human mind)

Condorcet concludes that “when all humanity has attained a higher level of civilization, nations will be equal and within each nation citizens will be equal. Science will flourish and lead the way. Then there is enlightenment which Wilson succinctly summarized with a sense of optimism: “We must know and we will know” (*Wir müssen wissen. Wir werden wissen*).



Prof. R. Y. George and Prof. E.O. Wilson, during October 24, 2006 Conference in the Harvard University.

On October 24, 2006 I had the pleasure to co-chair with Prof. Edward O. Wilson at Harvard University a one

day-workshop which led to the formation of the “Interagency Board on Deep-Sea Coral and Associated Vulnerable Ecosystems”.

This event is a successful story of bridge-building between government agencies (NOAA, NSF, MMS, USGS etc), Academia, Corporations and NGOs (GIBS, MCBI, PEW Institute, Environmental Science etc.) to protect deep-sea ecosystems from human impact (over-fishing, climate change and pollution etc.)

Let me conclude my presentation today at Harvard (Sept. 4, 2004) by dedicating this talk to two great Harvard scholars and naturalists: Louis Agassiz and his son Alexander Agassiz, both inspired me by their research and writings as did my friend Prof. Ed Wilson of Harvard University.

THREE BOOKS TO READ

1. Wilson, E. O. 1998. *Consilience: The Unity of Knowledge*. Alfred A. Knopf, New York. 333 p.
2. Wilson, E. O. 2002. *The Future of Life*. Alfred A. Knopf, New York 230 pp.
3. Wilson, E. O. 2006. *The CREATION: An Appeal To Save Life On Earth*. W.W. Norton & Company, London



The author giving the commencement address in 1988 at his Alma Mater, Madras Christian College, Tambaram, Tamil Nadu, in India where he took his B.S. degree in 1958 before getting his M.S. and Ph.D. He also was a Fulbright Professor twice in 1984 and 1988 to India.

- Some of the ideas, expressed in this essay, were presented by the author in an invited paper at the 50th year celebration of the Fulbright Program in Budapest, Hungary in 1998 and elaborated in the talk on Sept. 4, 2004 at the Harvard University.

Recommendation:

It is important that US Congress and the new US President in 2009 consider creating with adequate funding a “Fulbright Commission” to look into the possibility of supporting the Fulbright non-governmental (NGOs) organizations that promote the late Senator Fulbright’s vision and fund these organizations through a ‘Fulbright Office’ within ECA (Educational and Cultural Affairs) of the U.S. State Department. The international work, as envisaged in the Fulbright vision, should forge ahead in the coming decade (2009-2018) with full dedication of the ‘Fulbright Office’ to promote the ‘UN Millennium Goals’. In the 2007 Fulbright Association annual conference I appealed to “empower the United

Nations” with large scale funding to improve the infrastructure of UN and to promote the “UN Reform” as contemplated by the UN Secretary-General.

It is also important to create a ‘Fulbright Coccus’ in the House of Representatives to increase substantially the annual funding to \$500 million for the “Fulbright Program” that has thus far brought nearly 100,000 Fulbrighters to USA and sent thousands US Fulbrighters abroad as “*Ambassadors of America*”.



Dr. Pence with the author of the ‘Essay’.

Prof. Jay Pence, University of North Carolina at Chapel Hill (now retired), reviewed this essay and made the following comments.

“Much of this essay is a sweeping survey of thinkers who made vital contributions to the understanding of the interface of science and religion. It is an impressive survey that demonstrates a broad grasp of ideas, particularly of Western thought. The use of Albert Einstein’s writing provides a unifying theme.

One suggestion is to make more detailed use of the ideas E. O. Wilson developed in his book: Consilience: The Unity of

Knowledge. Although detailed inclusion of Wilson's biological materialism may be outside the purpose of this essay, such ideas as his distinction between transdentalists and empiricists might be useful. Also, his criticism of the social science is relevant for understanding the evolution of ethical standards. Whether or not these ideas are included in the essay, more specificity in explaining the "Wilsonian Concept of Consilience", near the end of the essay, would be helpful for the reader.

This is an important essay. Decades ago, C. P. Snow credited scientists with knowing more literature than professors in the humanities know science. This essay is part of the invitation by scientists to students of literature (and social science) to join hands with scientists in the grand quest to understand ourselves".

Jay Pence.

"There is a multiplier effect in international education and it carries the possibility, the only real possibility of changing our manner of thinking about the world, and therefore of changing the world" – William J. Fulbright.

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www.GIBSconservation.org

Dr. George presently serves as founding member of the board of directors of the Fulbright Academy. He was Fulbright Professor to India twice (1984 and 1988). Prof. George retired from the University of North Carolina at Wilmington after serving as Professor of

Marine Biology for 30 years (1972 to 2003). He is also honorary professor of the Kristineberg Marine Science Laboratories in Sweden. Dr. George was recently appointed as Adjunct Professor of Marine Biology and Fisheries at the Rosenstiel School of Marine and Atmospheric Sciences of the University of Miami.



Harvard University

